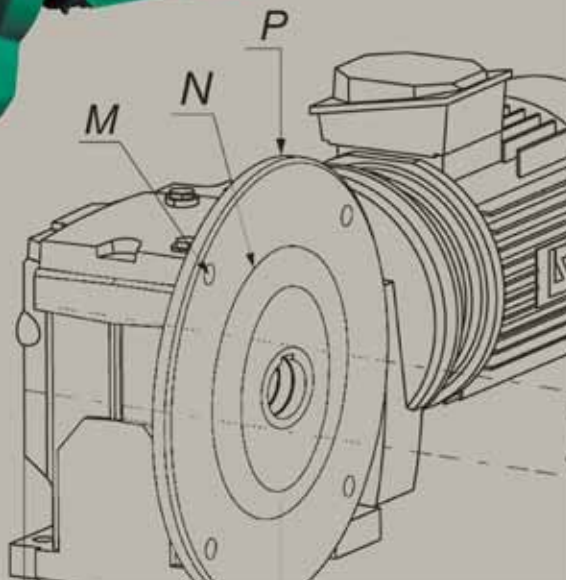
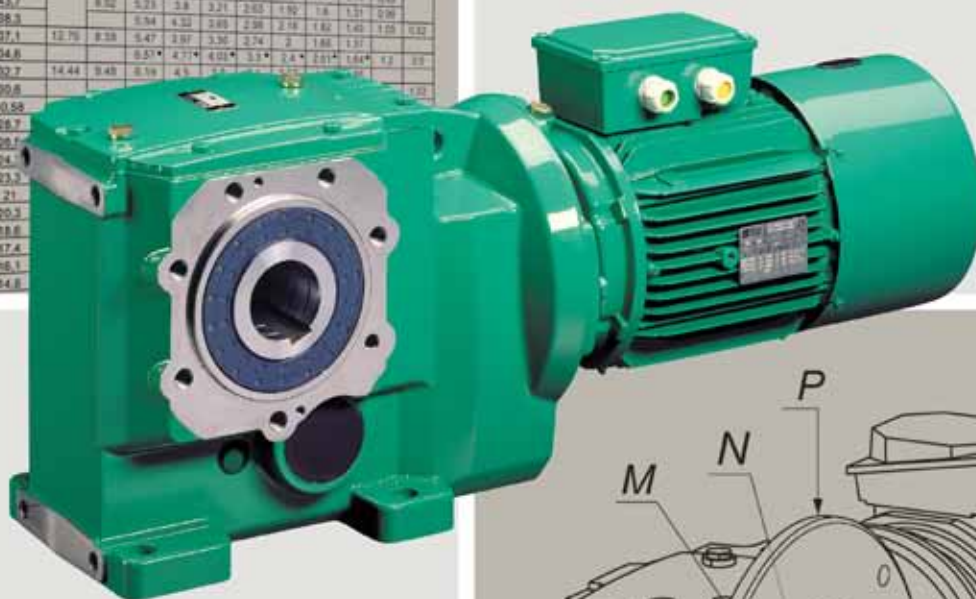




EMERSONTM
Industrial Automation

		O1 3333											
		15 000											
min-1		0.25	0.37	0.55	0.75	0.9	1.1	1.5	1.8	2.2	3	4	5.5
		71			85			100		112	125	135	150
9.08	160	3.41	2.24	1.49	1.08	0.9							
10.6	137	3.57	2.01	1.3	1.04	0.85							
11.6	125	4.35	2.66	1.83	1.36	1.15	0.94						
12.8	113	4.8	3.15	2.09	1.49	1.25	1.03						
15.0	96.4	5.61	3.68	2.4	1.75	1.48	1.21	0.98					
16.9	85.2	5.3	4.14	2.7	1.96	1.66	1.36	0.99	0.82				
18.8	77	7	4.6	3	2.18	1.84	1.53	1.1	0.92				
21.4	67.8	7.93	5.21	3.4	2.47	2.08	1.71	1.29	1.04	0.83			
23.8	61	8.76	5.78	3.77	2.74	2.31	1.89	1.39	1.06	0.84			
27.0	53.8	9.93	6.54	4.27	3.1	2.62	2.14	1.56	1.21	1.01	0.78		
28.8	50.3		6.88	4.55	3.21	2.8	2.28	1.67	1.4	1.14	0.93		
33.2	43.7		8.92	5.73	3.8	3.21	2.63	1.97	1.6	1.31	1.09		
37.9	38.3			6.94	4.33	3.69	2.96	2.19	1.82	1.45	1.23	1.02	
39.1	37.1	12.76	8.38	5.47	3.97	3.39	2.74	2	1.69	1.37			
41.9	34.6			6.51	4.71	4.01	3.3	2.4	2.01	1.64	1.2	1.0	
44.3	32.7	14.44	9.48	6.59	4.5	3.8	3.1	2.3	1.9	1.5	1.1	0.9	
47.4	30.8												
47.4	30.8												
50.5	28.7												
54.7	26.1												
59.7	24												
62.3	23.2												
69.0	21												
71.3	20.3												
78.0	18.6												
83.1	17.4												
90.1	16.1												
98.2	14.8												

A green industrial motor with a blue circular component on the front. The motor has a green painted metal housing with a blue circular flange or cover on the front. There are some small gold-colored screws or pins on top of the green housing. The background is a white grid with numerical data.

4275 en - 2011.04 / d

**LEROY[®]
SOMER**

LS2

Right-angle output drive systems

ORTHOBLOC 3000 / LS, LSES

Selection guide

Electromechanical products

Orthobloc 3000

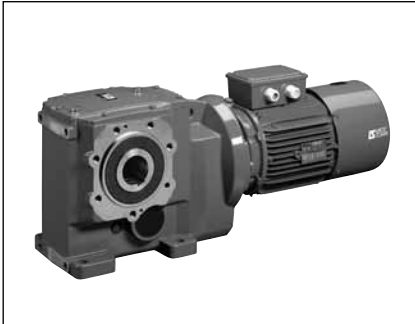
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Electromechanical products

Orthobloc 3000

General



Orthobloc 3000 geared motors with helical bevel gears are used to adapt the speed of the electric motor to that of the driven machine.

Their size is therefore determined by the motor power (P) expressed in kilowatts (kW) and the output rotation speed of the gearbox (n_S) in revolutions per minute (min^{-1}). The characteristic parameter of speed reducers is the rated output torque (M_{nS}) expressed in Newton-metres (Nm):

$$M_{nS} = \frac{P \times 9550}{n_S} \times \text{efficiency}$$

A range of eight sizes: 31, 32, 33, 34, 35, 36, 37, 38.

Rated output torque up to 13500 Nm.

Power ratings: 0.25 to 90 kW.

Reduction ratios: 3.71 to 160.

Two to three reduction stages.

Reversible.

Quiet operation.

Construction

Description of Orthobloc (Ot) gearboxes

Component	Materials	Remarks
Housing	Cast iron	- use of single-component pearlitic ENGJL-200 cast iron (flake graphite: 200 MPa tensile strength) to ensure unit is fully sealed - monobloc ribbed with internal reinforcements to absorb vibrations and noise, and increase its rigidity - foot mounted S, SBT or with flanges BS, BD..., BR. They are compact and meet industrial requirements
Gears	Steel	- cut by gear hob, they are heat treated and then undergo final machining. The quality and precision of the gear cutting allow maximum torque with minimum noise level
Shaft	Steel	- grinding of sealing surfaces - cylindrical hollow with protective cover or output with key in accordance with ISO R 773, or hollow with SD shrink disc - tolerance of diameters in accordance with NFE 22-051 and ISO R 775 - tapped holes at the solid shaft end for fixing connecting devices in accordance with DIN 332 version D
Lipseals	Nitrile	- sealing rings between housing and flange - antidust lipseals in accordance with DIN 3760 form AS - gasket under the access cover
Lubrication	Oil	- in accordance with ISO 6743/6 - delivered with the quantity of oil corresponding to the operating position, it is fitted with drain, level and breather plugs
Mounting		AP: gearbox with input shaft MI: geared motor with integral motor MU-FF: geared motor with IEC motor, manufactured with universal mounting
Standard motor		LS, LSES: multi-voltage 230/400 VY - 400 VΔ - composite material (80 to 100) pressed steel (≥ 112) ventilation cover, on request fitted with a drip cover for operation in vertical position (shaft facing down) - LS: metal terminal box fitted with cable gland - LSES: terminal box made of composite material (80 to 112) aluminium alloy (≥ 132) equipped with threaded plugs (without cable glands) - IP 55 standard protection
Brake motors		FCR: failsafe brake induction motor, IP 55 protection, from 0.25 to 15 kW (LS), from 0.75 to 11 kW (LSES) FCPL: failsafe brake induction motor, IP 44 protection, 11 to 90 kW (LS, LSES)
Finish	Paint	Shade: RAL 6000 (green), system I (1 polyurethane vinyl layer of 25/30 μm)

Electromechanical products

Orthobloc 3000

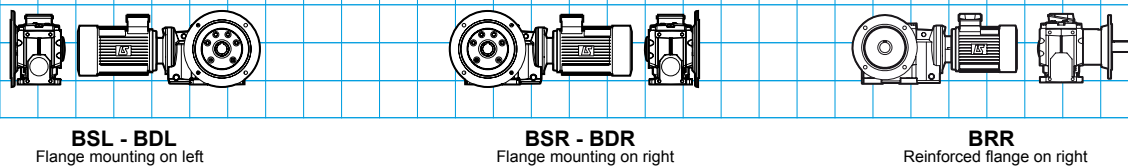
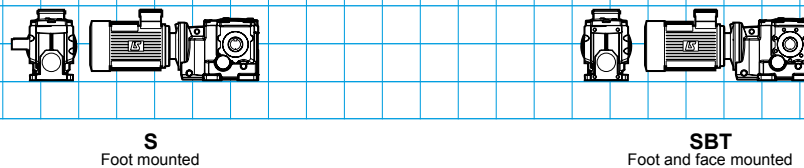
Mounting and operating positions S, SBT, BS, BD, BR

Standard position: gearbox viewed from side F, motor behind.

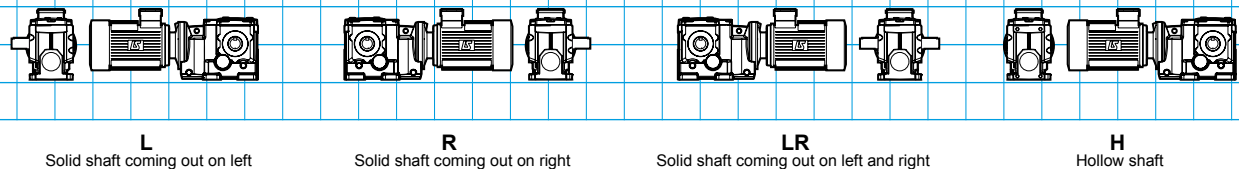
1 - Marking on sides



2 - Mounting



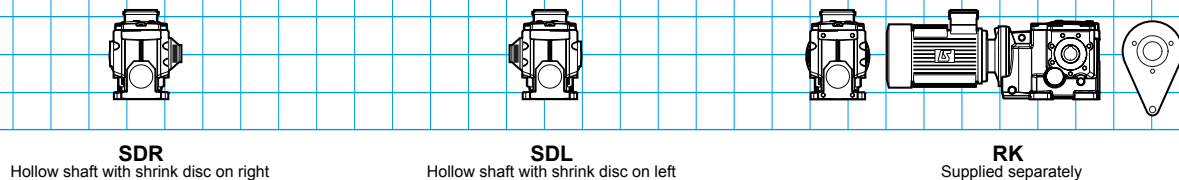
3 - Output shaft



4 - Options:

Shrink disc SD

Torque arm R



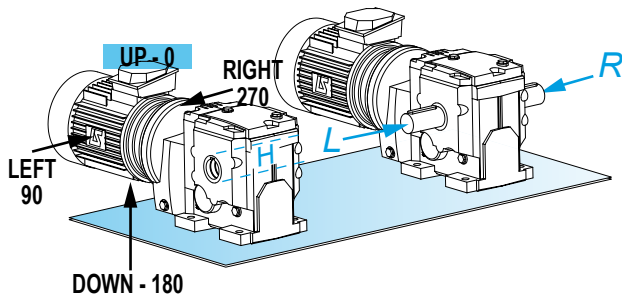
Electromechanical products

Orthobloc 3000

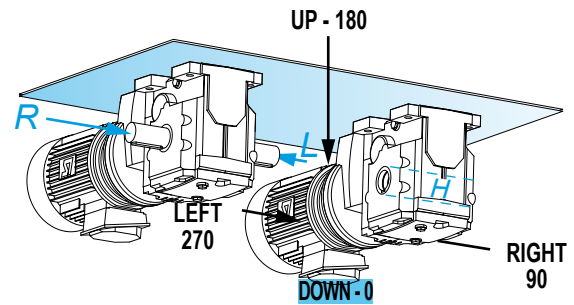
Operating positions for Ot S, SBT

The absolute orientation of the connection (TB: Up, Down, Right, Left, Front, Back) is related to the chosen operating position.

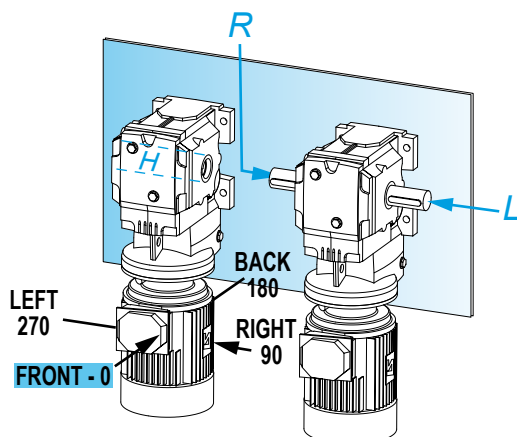
The relative orientation (0-90-180-270, in the trigonometric direction), a consequence of the absolute position, is related to the feet (real or imaginary) for an observer, facing the gearbox.



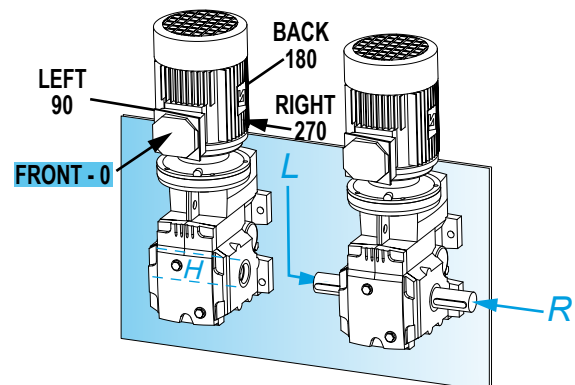
B3



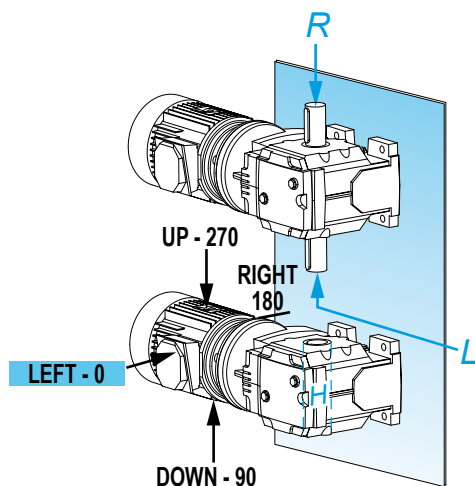
B8



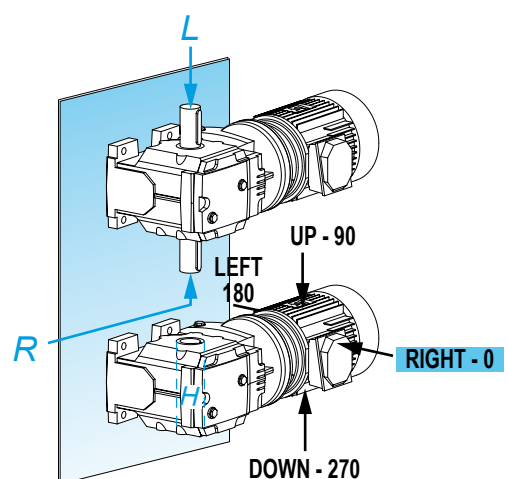
B6



B7



V5



V6

Std terminal box

Left output shaft L, right R, hollow H.

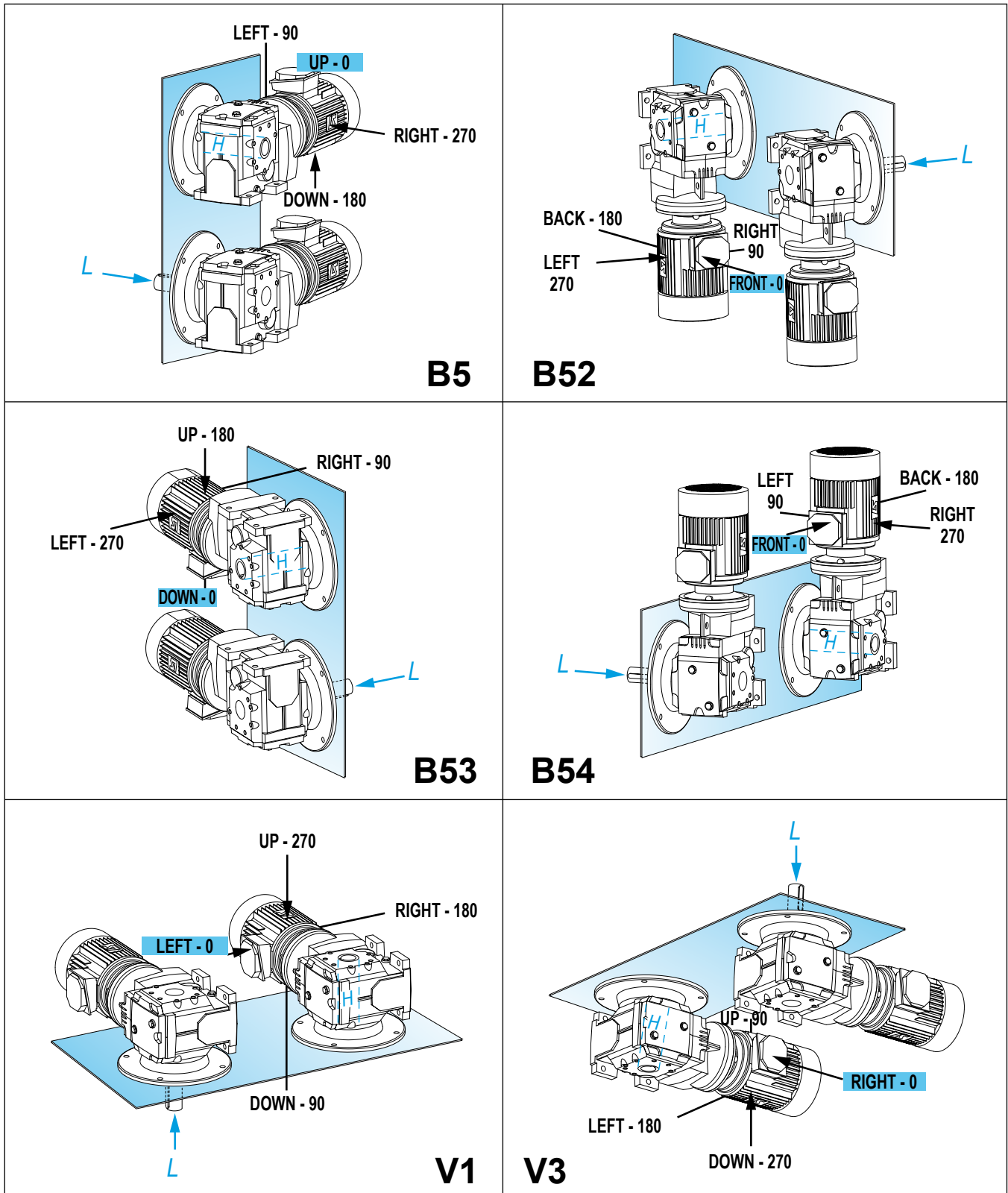
Electromechanical products

Orthobloc 3000

Operating positions for Ot BSL, BDL

The absolute orientation of the connection (TB: Up, Down, Right, Left, Front, Back) is related to the chosen operating position.

The relative orientation (0-90-180-270, in the trigonometric direction), a consequence of the absolute position, is related to the feet (real or imaginary) for an observer, facing the gearbox.



Std terminal box

Left output shaft L, hollow H.

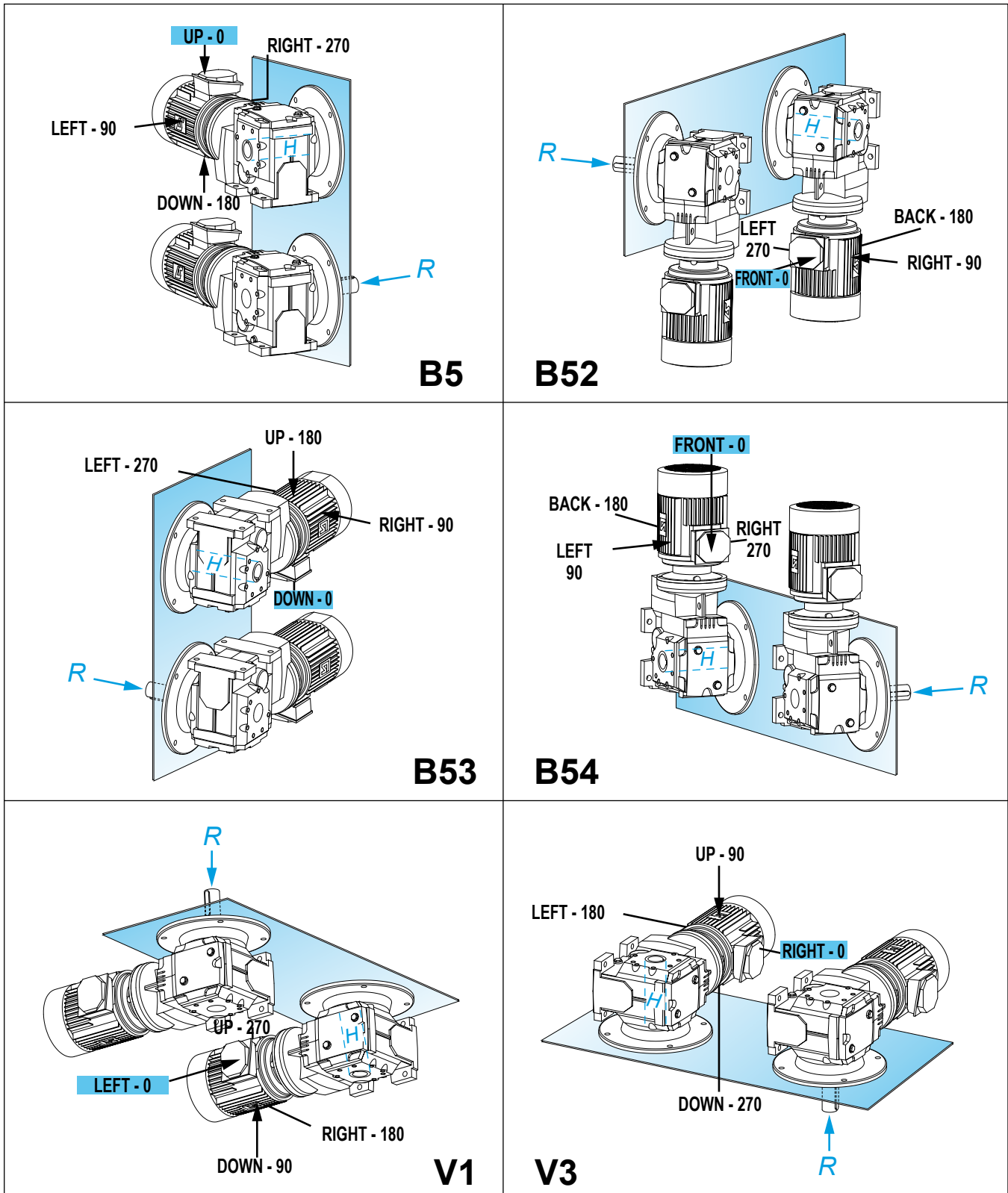
Electromechanical products

Orthobloc 3000

Operating positions for Ot BSR, BDR, BRR

The absolute orientation of the connection (TB: Up, Down, Right, Left, Front, Back) is related to the chosen operating position.

The relative orientation (0-90-180-270, in the trigonometric direction), a consequence of the absolute position, is related to the feet (real or imaginary) for an observer, facing the gearbox.



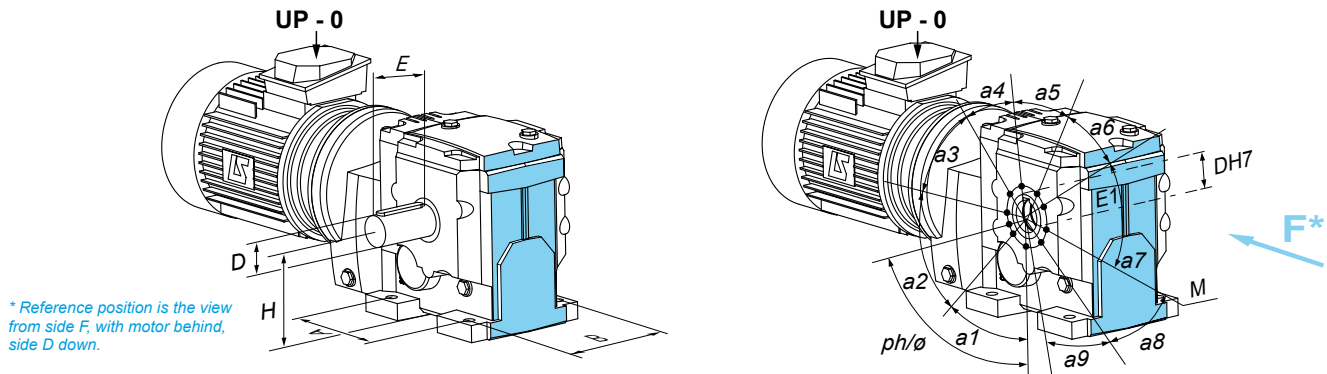
Std terminal box

Right output shaft R, hollow H.

Electromechanical products

Orthobloc 3000

S, SBT mounting



- Foot mounted form, solid shaft on left L, solid shaft on right R, hollow shaft H

Type	SL					SR					SH					kg
	A	B	H	ØD	E	A	B	H	ØD	E	A	B	H	ØDH7	E1	
Ot 3833 S	350	270	375	110m6	210	350	270	375	110m6	210	350	270	375	100	350	378
Ot 3733 S	420	270	250	90m6	170	420	270	250	90m6	170	420	270	250	90	340	306
Ot 3633 S	355	240	225	70m6	140	355	240	225	70m6	140	355	240	225	70	304	198
Ot 3533 S	230	180	212	60m6	120	230	180	212	60m6	120	230	180	212	60	244	83
Ot 3433 S	190	165	180	50k6	100	190	165	180	50k6	100	190	165	180	50	226	60
Ot 3333 S	150	140	140	40k6	80	150	140	140	40k6	80	150	140	140	40	173	38
Ot 3233 S	150	120	112	30j6	60	150	120	112	30j6	60	150	120	112	35	151	21
Ot 3232 S	150	120	112	30j6	60	150	120	112	30j6	60	150	120	112	35	151	22
Ot 3132 S	100	100	80	25j6	50	100	100	80	25j6	50	100	100	80	30	130	14,5

- Faceplate on left form, solid shaft on left L, solid shaft on right R, hollow shaft H

Type	Side L															H				 kg
	A	B	H	a1	a2	a3	a4	a5	a6	a7	a8	a9	a10	a11	n	ph/ø	øM	øDH7	E1	
Ot 3833 SBT	350	270	375	30°	30°	30°	30°	30°	30°	30°	30°	30°	30°	30°	11	75°-255°/300	300	100	350	347
Ot 3733 SBT	420	270	250	36°	36°	36°	36°	36°	36°	36°	36°	36°	-	-	9	0°/230	230	90	340	289
Ot 3633 SBT	355	240	225	70°	35°	40°	70°	40°	35°	-	-	-	-	-	6	0°/220	230	70	310	186
Ot 3533 SBT	230	180	212	59°	52°	44°	50°	44°	81°	-	-	-	-	-	6	300°/190	190	60	244	80
Ot 3433 SBT	190	165	180	65°	46°	44°	50°	44°	81°	-	-	-	-	-	6	300°/152	152	50	226	58
Ot 3333 SBT	150	140	140	65°	48°	44°	46°	45°	67°	-	-	-	-	-	6	65°/123	123	40	173	36
Ot 3233 SBT	150	120	112	0°	65°	48°	44°	46°	50°	-	-	-	-	-	6	295°/102	100	35	151	20
Ot 3232 SBT	150	120	112	0°	65°	48°	44°	46°	50°	-	-	-	-	-	6	295°/102	100	35	151	21,8
Ot 3132 SBT	100	100	80	0°	90°	90°	90°	-	-	-	-	-	-	-	4	340°/95	95	30	130	14

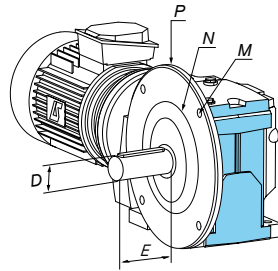
- Faceplate on right form, solid shaft on left L, solid shaft on right R, hollow shaft H

Type	Side R															H				 kg
	A	B	H	a1	a2	a3	a4	a5	a6	a7	a8	a9	a10	a11	n	ph/ø	øM	øDH7	E1	
Ot 3833 SBT	350	270	375	30°	30°	30°	30°	30°	30°	30°	30°	30°	30°	30°	11	75°-255°/300	300	100	350	347
Ot 3733 SBT	420	270	250	36°	36°	36°	36°	36°	36°	36°	36°	36°	-	-	9	0°/230	230	90	340	289
Ot 3633 SBT	355	240	225	70°	35°	40°	70°	40°	35°	-	-	-	-	-	6	0°/220	230	70	310	186
Ot 3533 SBT	230	180	212	0°	59°	52°	44°	50°	44°	-	-	-	-	-	6	300°/190	190	60	244	80
Ot 3433 SBT	190	165	180	10°	55°	46°	44°	50°	44°	-	-	-	-	-	6	300°/152	152	50	226	58
Ot 3333 SBT	150	140	140	0°	45°	68°	44°	46°	44°	-	-	-	-	-	6	65°/123	123	40	173	36
Ot 3233 SBT	150	120	112	0°	65°	48°	44°	46°	50°	-	-	-	-	-	6	295°/102	100	35	151	20
Ot 3232 SBT	150	120	112	0°	65°	48°	44°	46°	50°	-	-	-	-	-	6	295°/102	100	35	151	21,8
Ot 3132 SBT	100	100	80	0°	90°	90°	90°	-	-	-	-	-	-	-	4	340°/95	95	30	130	14

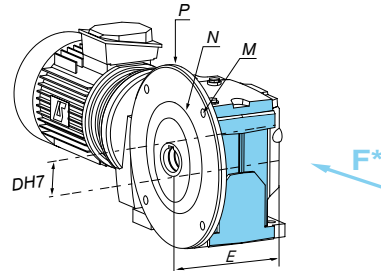
Electromechanical products

Orthobloc 3000

BSL, BDL mounting



* Reference position is the view from side F, with motor behind, side D down.



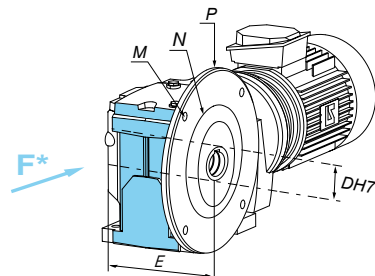
- Solid shaft on left L

Type	BSL L						BDL L					
	ØM	ØNj6	ØP	ØD	E	kg	ØM	ØNj6	ØP	ØD	E	kg
Ot 3833	-	-	-	-	-	-	500	450	550	110m6	210	402
Ot 3733	500	450	550	90m6	170	342	400	350	450	90m6	170	336
Ot 3633	500	450	550	70m6	140	232	400	350	450	70m6	140	226
Ot 3533	350	300	400	60m6	120	94	300	250	350	60m6	120	93
Ot 3433	300	250	350	50k6	100	68	265	230	300	50k6	100	67
Ot 3333	265	230	300	40k6	80	42	215	180	250	40k6	80	42
Ot 3233	215	180	250	30j6	60	22	165	130	200	30j6	60	21,7
Ot 3232	215	180	250	30j6	60	23,3	165	130	200	30j6	60	23
Ot 3132	130	110	165	25j6	50	14,8	-	-	-	-	-	-

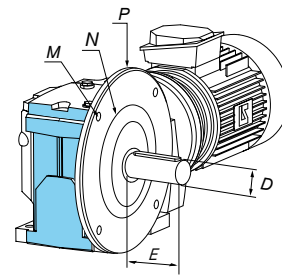
- Hollow shaft H

Type	BSL H						BDL H					
	ØM	ØNj6	ØP	ØDH7	E	kg	ØM	ØNj6	ØP	ØDH7	E	kg
Ot 3833	-	-	-	-	-	-	500	450	550	100	350	371
Ot 3733	500	450	550	90	340	328	400	350	450	90	340	322
Ot 3633	500	450	550	70	310	222	400	350	450	70	310	216
Ot 3533	350	300	400	60	244	91	300	250	350	60	244	89
Ot 3433	300	250	350	50	226	66	265	230	300	50	226	65
Ot 3333	265	230	300	40	173	40	215	180	250	40	173	40
Ot 3233	215	180	250	35	151	21	165	130	200	35	151	21,7
Ot 3232	215	180	250	35	151	23,3	165	130	200	30	151	23
Ot 3132	130	110	165	30	130	14,8	-	-	-	-	-	-

BSR, BDR, BRR mounting



* Reference position is the view from side F, with motor behind, side D down.



- Solid shaft on right R

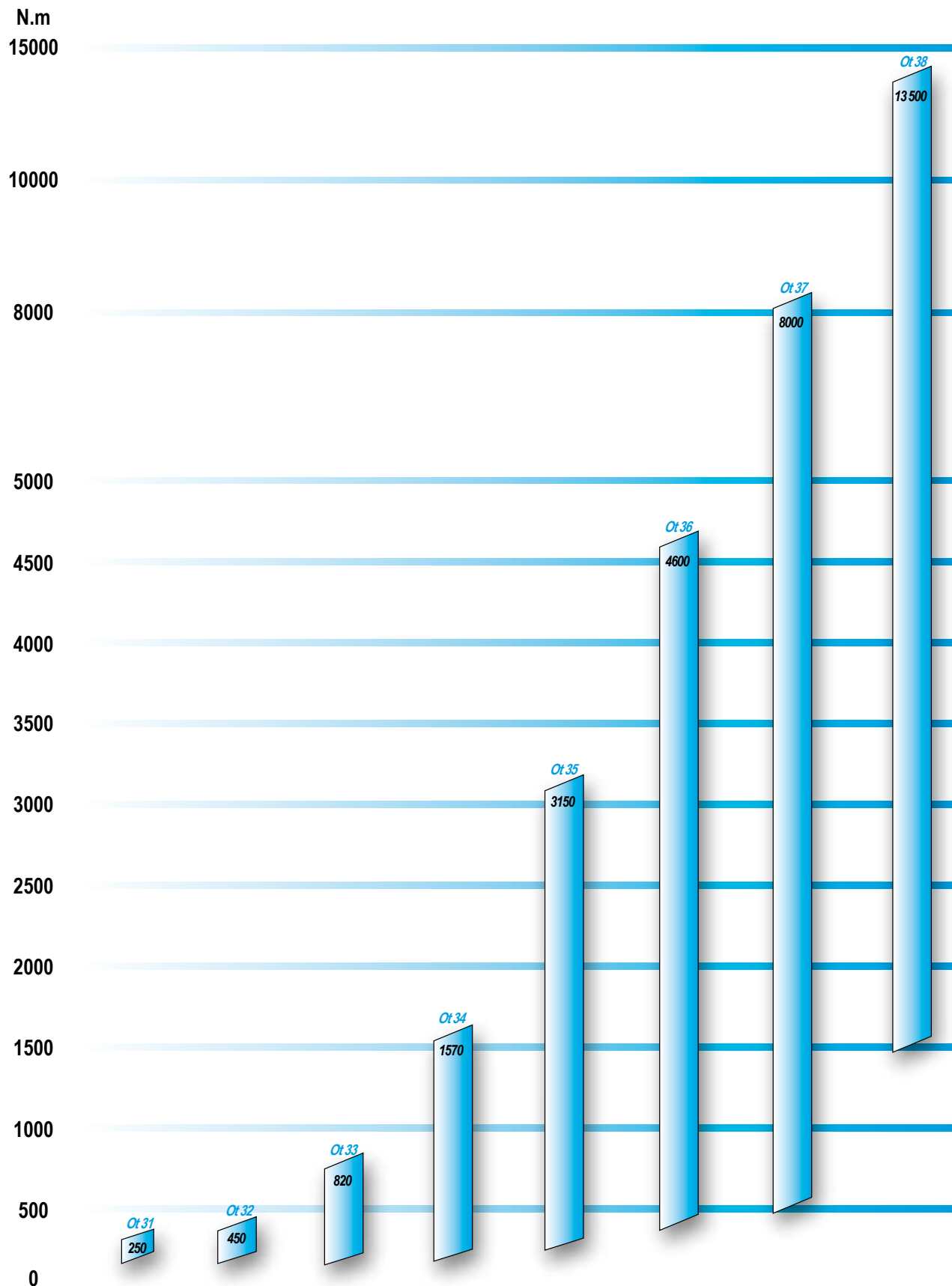
Type	BSR R						BDR R						BRR R exclusively					
	ØM	ØNj6	ØP	ØD	E	kg	ØM	ØNj6	ØP	ØD	E	kg	ØM	ØNj6	ØP	ØD	E	kg
Ot 3833	-	-	-	-	-	-	500	450	550	110m6	210	402	-	-	-	-	-	-
Ot 3733	500	450	550	90m6	170	342	400	350	450	90m6	170	336	-	-	-	-	-	-
Ot 3633	500	450	550	70m6	140	232	400	350	450	70m6	140	226	-	-	-	-	-	-
Ot 3533	350	300	400	60m6	120	94	300	250	350	60m6	120	93	300	250	350	65m6	130	120
Ot 3433	300	250	350	50k6	100	68	265	230	300	50k6	100	67	265	230	300	55k6	110	72
Ot 3333	265	230	300	40k6	80	42	215	180	250	40k6	80	42	215	180	250	45k6	90	51
Ot 3233	215	180	250	30j6	60	22	165	130	200	30j6	60	21,7	-	-	-	-	-	-
Ot 3232	215	180	250	30j6	60	23,3	165	130	200	30j6	60	23	-	-	-	-	-	-
Ot 3132	130	110	165	25j6	50	14,8	-	-	-	-	-	-	-	-	-	-	-	-

- Hollow shaft H

Type	BSR H						BDR H					
	ØM	ØNj6	ØP	ØDH7	E	kg	ØM	ØNj6	ØP	ØDH7	E	kg
Ot 3833	-	-	-	-	-	-	500	450	550	100	350	371
Ot 3733	500	450	550	90	340	328	400	350	450	90	340	322
Ot 3633	500	450	550	70	310	222	400	350	450	70	310	216
Ot 3533	350	300	400	60	244	91	300	250	350	60	244	89
Ot 3433	300	250	350	50	226	66	265	230	300	50	226	65
Ot 3333	265	230	300	40	173	40	215	180	250	40	173	40
Ot 3233	215	180	250	35	151	21	165	130	200	35	151	21,7
Ot 3232	215	180	250	35	151	23,3	165	130	200	30	151	23
Ot 3132	130	110	165	30	130	14,8	-	-	-	-	-	-

Electromechanical products Orthobloc 3000

General information - Ranges



Electromechanical products

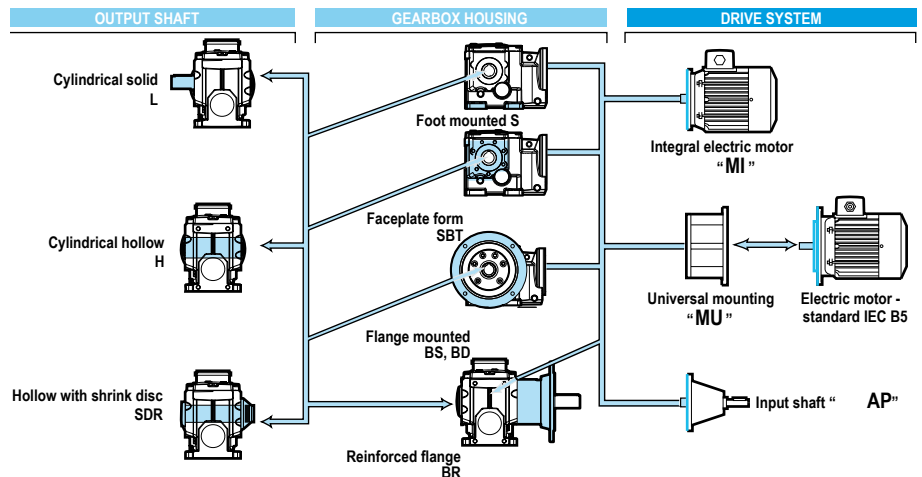
Orthobloc 3000

Adaptation possibilities

Leroy-Somer offers different types of drive for its gearboxes which meet very wide-ranging needs. They are described below and offered in this catalogue.
For other drives, consult the Leroy-Somer technical specialists who will be glad to assist.

Orthobloc Ot 3000 gearboxes can be used in conjunction with the following drives:

- 3-phase induction motors:
 - LS motor from 0.25 to 0.55 kW
 - LSES motor from 0.75 to 90 kW
 - FCR brake motor from 0.25 to 15 kW (LS), from 0.55 to 11 kW (LSES)
 - LS, LSES FCPL brake motor from 11 to 90 kW



Designation / Coding

Ot	3433	57	BS	L	L	B5	MI	4P	LSES 100 LR	3 kW LS2/IE2	230/400 V 50 Hz	UG
Gearbox type	Size	Exact reduction	Mounting form	Mounting position	Definition of output shaft	Operating position	Type of input	Number of poles	Series and frame size	Motor output power Generation code Class η	Mains voltage and frequency	Use

Example of coding:

Orthobloc 3433 3 kW, 25 min⁻¹, class II

Designation: Ot 3433 - i : 57 - BSL - L - B5 - MI
Code: 473 2455
 4P LSES 100 LR 3 kW LS2/IE2 230/400V 50 Hz UG

Electromechanical products

Orthobloc 3000

Selection

The selection of a gearbox or a geared motor should take account of the application. Some of these applications are listed in the "AGMA" indicative load classification on the next page.

The table opposite summarises the relationship between the "AGMA" class and the duty factor K_p of the gearbox.

"AGMA" class	Gearbox duty factor K_p
I	1
II	1.4
III	2

1st case. - Your application is listed

Follow the indicative load classification table according to "AGMA" on the next page.

Indicative classification of loads according to "AGMA"			
Applications			
Operation in hours/day			
	3 h/day	10 h/day	24 h/day
CONVEYORS (loaded or fed uniformly)			
belt	I	I	II
chain	I	I	II

Application example: belt CONVEYOR

Operating time: 10 hours/day

"AGMA" class: I

Gearbox duty factor $K_p = 1$

2nd case. - Your application is not listed

The "AGMA" selection class is defined by the daily operating time and the type of operation of the application, according to the table below. ▼

Type of application	Daily operating time	"AGMA" class
Shock-free, not many starts	10 hours/day	I
Damped shocks	10 hours/day	II
Shock-free, not many starts	24 hours/day	II
Violent shocks, many starts	10 hours/day	III
Damped shocks	24 hours/day	III

Electromechanical products

Orthobloc 3000

List of applications

OPERATION in hours/day				OPERATION in hours/day				OPERATION in hours/day			
	3 h/day	10 h/day	24 h/day		3 h/day	10 h/day	24 h/day		3 h/day	10 h/day	24 h/day
COOLING TOWERS	-	-	-	grinders (2 or more)	II	II	II*	bending rollers	II	II	II*
AGITATORS				calenders	II	II	II*	nut tappers	III	III	III*
liquids with variable density	II	II	II	extruding machines	II	II	III	shears	III	III	III
liquids and solids	II	II	II	sheet forming machines	I	II	II*	MIXERS			
pure liquids	I	I	II	mixers	III	III	III*	constant density	I	I	II
semi-liquids, variable density	II	II	II*	CLARIFIERS	I	I	II	variable density	I	II	II
FOOD AND BEVERAGE INDUSTRY				SORTERS, GRADERS	I	II	II	cement, continuous duty	I	II	II
cereal cookers	I	I	II	COMPRESSORS				cement, intermittent duty	I	I	-
beet choppers	II	II	II	lobe	I	II	II	METALLURGY (industry)			
meat choppers	II	II	II	centrifugal	I	II	II	drawing frames, carriage	III	III	III*
dough mixers	I	II	II	CONVEYORS (loaded or fed uniformly)				drawing frames, main control	III	III	III*
extruding machines	I	II	III	belt		I	II	table conveyor:			
FEEDING (attachment)				chain	I	I	II	single direction of operation	I	II	III
reciprocating	III	III	III*	apron	I	I	II	reverse operation	III	III	III
disks	I	I	II	bucket	I	I	II	wire winders	I	II	II
lattice	I	II	II	scraper	I	I	II	sheet metal winders	I	II	II
belt	I	II	II	screw	I	I	II	spreading	III	III	III*
screw	I	II	II	assembly	I	I	II	roller drive			
TRANSMISSION SHAFT				furnace	I	I	II	splitting lines	II	II	III
loads with moderate shocks	I	II	II	CONVEYORS (loaded or fed non-uniformly)				wire drawing mills, flatteners	II	II	III*
loads with severe shocks	III	III	III*	heavy duty:				shape-cutting machines	III	III	III*
constant loads	I	I	II	belt	II	II	II	separating rollers	-	-	-
CLAY (industry)				chain	II	II	II	drying rollers	-	-	-
brick machines	III	III	III*	apron	II	II	II	PAPER (industry)			
processing machines	II	II	II	bucket	II	II	II	aerators	-	-	-
mixers	II	II	II	scraper	II	II	II	agitators, mixers	I	I	II
brick presses	III	III	III*	roller	I	I	II	wind up turrets	I	II	II
TIPPERS	III	III		screw	II	II	II	calenders	I	II	II*
TIMBER (industry)				reciprocating	III	III	III*	conveyors	I	II	II
supplying:				assembly	II	II	II	ball conveyors	III*	III*	III*
saws in series	III	III	III*	furnace	II	II	II	cutters, plating machines	I	II	II
shape-cutting machines	II	II	III	vibratory	III	III	III*	bleaching vats	I	II	II
planers	II	II	III	removal	I	I	-	cylinders			
cutting	II	II	III	CANE KNIVES	II	II	III	felt stitching machines	III*	III*	III*
chains	I	II	III	SIEVES				washers, thickeners	I	II	II*
turntable control	I	II	III	rotary	I	II	III	barking machines (mechanical)	III	III	III
main conveyors	I	II	III	stone washer with water circulation	I	I	II	pulp machines, uncoilers	I	II	II
ball conveyors	I	II	III*	DREDGERS				pulp hammers	II	II	II*
circular feed conveyors	II	II	III	shaker control	III	III	III*	presses	I	II*	II*
burner conveyors	I	II	III	cutting head control	III	III	III*	suction rollers	I	II	II*
waste conveyors	I	II	III	sieve control	III	III	III*	dryers	I	II	II*
plank conveyors	III	III	III*	conveyors	I	II	II	wood pulp storing machines	I	II	II
transfer conveyors	I	II	III	pumps	I	II	II	barking drums	III	III	III*
devices:				cable winding drums	I	II	-	felt tension devices	I	II	II
for planer inclination	I	II	III	handling winches	II	II	-	PUMPS			
for ball turning	III	III	III*	service winches	II	II	-	reciprocating:			
barking machine, feeder	II	II	III	CONTROL (vehicle)	II	II	II	multi-cylinder single-acting	I	II	II
main drive system barking machine	III	III	III*	ELEVATORS				centrifugal	I	I	II
roller drive system	III	III	III*	centrifugal unloading	I	I	II	dosing	I	II	II*
haulage of balls:				gravity unloading	I	I	II	rotary:			
inclined	III	III	III*	escalators	I	II	III	geared	I	I	II
well	III	III	III*	buckets:				lobed, vaned	I	I	II
cross-cut saws:				continuous load	I	I	II	SEWAGE PLANTS			
chain	II	II	III	heavy load	II	II	II	surface aerators	III	III	III
reciprocating	II	II	III	uniform load	I	I	II	duck type aerators	III	III	III
sorting tables	I	II	III	hoist for building materials	III	III	-	bar screens	I	I	II
ball support plates	III	III	III*	WINDING MACHINES	-	-	-	screw pumps	I	II	III
barking drums	III	III	III*	FILTERS	I	II	III	TEXTILES			
peeling tower	-	-	-	FURNACES				reelers (except drum)	I	II	II
transfer:				dryers, coolers	I	II	II	calenders	I	II	II
on bogies	I	II	III	tumbling barrels	III	III	III*	padding calenders	I	II	II
chain	I	II	III	CRANES AND LIFTING				carding machines, spinners	I	II	II*
BREWERIES, DISTILLERIES				moving truck	-	-	-	alignment controls	-	-	-
boilers, continuous duty			II	moving bridge	-	-	-	glueing machines	I	II	II
cookers, continuous duty			II	bucket winches	-	-	-	drying machines, mangles	II	II	II
brewing vats, continuous duty			II	hoisting gear	-	-	-	napping mills	I	II	II
bottling machines	I	I	II	WINDLASSES, CAPSTANS	II	II	II*	washing machines	I	II	II
scaling hoppers:				PRINTING (presses)	I	I	II	soap milling machines	I	II	II
frequent starts	II	II	III	PACKAGING MACHINES				dyeing machines	I	II	II
GRINDERS				stackers	II	III	III	knitting machines	-	-	-
minerals	III	III	III*	wrapping machines	I	I	II	cloth finishing machines:			
stones	III	III	III*	WASHING MACHINES				washers, spreading machines	I	II	II
HAMMER MILLS	III	III	III*	drum	II	II	II	dryers, calenders	I	II	II
ROTARY GRINDERS				reversible	II	II	II	thread preparation machines:			
rod mills	III	III	III*	MACHINE TOOLS				weaving looms	II	III	III
ball mills	III	III	III*	main drive system	I	II	II	spinning machines	I	I	II
pebble mills	III	III	III*	auxiliary drive system	I	I	II	dryers	I	II	II
RUBBER (industry)				punching machines (geared)	III	III	III*	loading hoppers	II	II	II
air chamber extruder	II	II	II	flat planers	III	III	III*	VENTILATION	-	-	-

* : These classes assume minimum and normal conditions. To take account of variations which may affect the load conditions, it is recommended that applications are carefully researched before making a selection.

- : Consult Leroy-Somer

Electromechanical products

Orthobloc 3000

Conditions

Ot : S, SBT, BS, BD..., BR

LS : IP55 - 50 Hz - Cl. F - 400 VY - from 0.25 to 0.55 kW - LSES : IP55 - 50 Hz - Cl. F - 400 VY, 400VA from 0.75 to 90 kW LS2/IE2 - U.G.

LS, LSES FCR brake : IP55 - 50 Hz - Cl. F - 400 V - LS from 0.25 to 15 kW - LSES from 0.75 to 11 kW - U.G.

LS, LSES FCPL brake : IP44 - 50 Hz - Cl. F - 400 V - from 11 to 90 kW - U.G.

MI

MU

AP

Maximum quantity per order

Input	Ot 3132	Ot 3232-3233	Ot 3333	Ot 3433	Ot 3533	Ot 3633	Ot 3733	Ot 3833
AP	-	3	3	3	3	2	2	2
MI LS	0,25 --> 0,55 kW	3	3	3	-	-	-	-
MI LSES	0,75 --> 9 kW	3	3	3	3	2	2	2
	11 --> 45 kW	-	-	-	2	2	2	2
MI LS FCR	0,25 --> 9 kW	3	3	3	3	2	2	2
	11 - 15 kW	-	-	-	2	2	2	2
MI LSES FCR	0,75 --> 11 kW	-	-	-	-	-	-	-
MI LS, LSES FCPL	11 --> 45 kW	-	-	-	-	-	-	-
MU LS	0,25 --> 0,55 kW	3	3	3	-	-	-	-
	0,75 --> 9 kW	3	3	3	3	2	2	2
	11 --> 30 kW	-	-	-	2	2	2	2
MU LSES	37 - 45 kW	-	-	-	-	1	1	1
	55 - 75 kW ¹	-	-	-	-	-	1	1
	90 kW ¹	-	-	-	-	-	-	-
MU LS FCR	0,25 --> 9 kW	3	3	3	3	2	2	2
	11 - 15 kW	-	-	-	1	1	1	1
MU LSES FCR	0,75 --> 11 kW	-	-	-	-	-	-	-
MU LS,	11 --> 45 kW	-	-	-	-	-	-	-
LSES FCPL	55 --> 90 kW ¹	-	-	-	-	-	-	-

1. LSES B35 obligatory

Mechanical options and pages of dimensions corresponding to the mounting form and L (left) R (right) output shaft

Type	Foot mounted					Flange mounted					Mounting		
	S L/R	SBTLR L/R	NS	BSL / BSR	BDL / BDR	BRR	Backstop	Ot	MU	AP			
Ot 3132	25	24		25				60	23				
Ot 3232	27	26		27	26			60	23				
Ot 3233	29	28		29	28			60	23				
Ot 3333	31	30	64	31	30	30		60	23				
Ot 3433	33	32	64	33	32	32		60	23				
Ot 3533	35	34	64	35	34	34		60	23				
Ot 3633	37	36		37	36		23-60	60	23				
Ot 3733	39	38		39	38		23-60	60	23				
Ot 3833	41	40		41			23-60	60	23				

Mechanical options and pages of dimensions corresponding to the mounting form and H hollow shaft

Type	Foot mounted					Flange mounted					Mounting		
	S	SBT	BSL/BSR	BDL / BDR	Shrink disc SDR / SDL	Torque arm RK	Backstop	Ot	MU	AP			
Ot 3132	43	42	43		42-63	62		60	23				
Ot 3232	45	44	45	44	44-63	62		60	23				
Ot 3233	47	46	47	46	46-63	62		60	23				
Ot 3333	49	48	49	48	48-63	62		60	23				
Ot 3433	51	50	51	50	50-63	62		60	23				
Ot 3533	53	52	53	52	52-63	62		60	23				
Ot 3633	55	54	55	54	54-63	62	23-60	60	23				
Ot 3733	57	56	57	56	56-63	62	23-60	60	23				
Ot 3833	59	58	59		58-63	62	23-60	60	23				

Options

	Input 4p / MI-MU	Electrical options				Brake options			
		230/400V	400V Δ	PTO/CTP	DLRA	Drip cover	TRR	Different Mf	J01
LS	0,25--> 0,55 kW		-		-	-	-	-	-
	0,75 - 0,9 kW		-		-	-	-	-	-
	1,1--> 3 kW				-	-	-	-	-
	4--> 9 kW MI				-	-	-	-	-
LSES	11 - 15 kW MI				-	-	-	-	-
	18,5 - 45 kW MI				-	-	-	-	-
	4--> 9 kW MU				-	-	-	-	-
	11--> 45 kW MU				-	-	-	-	-
	55--> 90 kW MU ¹				-	-	-	-	-
LS FCR	0,25 - 3 kW								
	4 - 5,5 kW								
	7,5 - 9 kW								
	11 - 15 kW								
LSES FCR	0,75--> 11 kW								
LS, LSES	11 - 45 kW								
FCPL	55 - 90 kW ¹								

1. LSES B35 obligatory

DG < 2 WD < 5 WD < 10 WD < 15 WD < To be agreed

DG : Availability ; n WD : Working Days

Electromechanical products

Orthobloc 3000

Selection

Classes
I, II, III
(kp = 1, 1.4, 2)

Ot 3132
LS, LSES, brake LS, brake LSES - IP 55 - Cl. F
230V/400VY 400VΔ - 50 Hz - U.G

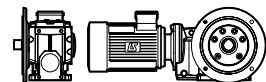
Integral mounting	MI
Universal mounting	MU
Input shaft mounting	AP

Ot 3132															
LS, LSES (kW)															
		0.25	0.37	0.55	0.75	0.9	1.1	1.5	1.8	2.2	3	4			
3-phase 4-pole LS, LSES															
min-1	i exact	71		80		90		100		112					
29.2	49.4	3.08	2.03												
32.2	44.8	3.39	2.24												
36.9	39.1	3.88	2.56									1.68	1.26	1.03	0.85 ●
40.5	35.6	4.25	2.81									1.84	1.38	1.13	0.94 ●
47.0	30.7	4.74	3.13	2.05	1.54	1.26	1.04								
52.7	27.4	5.17	3.42	2.25	1.67	1.38	1.13					0.83			
58.7	24.6	5.56	3.68	2.42	1.80	1.48	1.22					0.89			
67.1	21.5	6.13	4.05	2.66	1.98	1.63	1.34					0.98	0.81		
71.1	20.3	6.30	4.16	2.74	2.04	1.68	1.38	1.01	0.84						
84.4	17.1	7.12	4.71	3.10	2.30	1.90	1.56	1.14	0.95						
89.6	16.1	7.33	4.85	3.19	2.37	1.95	1.61	1.17	0.97			0.80			
101	14.3		5.26	3.46	2.58	2.12	1.75	1.28	1.06			0.86			
115	12.5		5.74	3.77	2.81	2.31	1.90	1.39	1.15	0.94					
131	11		6.22	4.09	3.05	2.51	2.06	1.51	1.25	1.02					
148	9.72			4.43 ●	3.29 ●	2.92 ●	2.23	1.63	1.35	1.11	0.81				
167	8.62	4.77 ●		3.55 ●	3.18 ●	2.41	1.76	1.46	1.19	0.87					
189	7.62	5.19		3.86	3.18	2.62	1.91	1.59	1.30	0.95					
200	7.23	5.35		3.98	3.27	2.70	1.97	1.63	1.34	0.98					
224	6.43	5.73 ●		4.27 ●	3.51 ●	2.89	2.11	1.75	1.43	1.05					
283	5.1			4.89 ●	4.02 ●	3.31	2.42	2.01	1.64	1.20					
4-pole and brake LS, LSES															
3-phase 4-pole LS, LSES															
LS FCR		71 L			80 L		90 L		100 L						
LSES FCR					80		90		100						

● MU obligatory

Selection example

Required power: 1.5 kW
 Required speed: 90 min-1
 Duty factor required by the application: Kp = 1
 Operating position; Mounting form: Horizontal B5, shaft on left, BS flange
Designation : Ot 3132 i : 16.1 BSL L B5 - MI 4p LSES90L 1.5 kW LS2/IE2- 400VY - U.G.



Electromechanical products

Orthobloc 3000

Selection

Classes
I, II, III
(kp = 1, 1.4, 2)

Ot 3232, Ot 3233
LS, LSES, brake LS, brake LSES - IP 55 - Cl. F
230V/400VY 400VΔ - 50 Hz - U.G

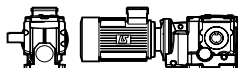
Integral mounting	MI
Universal mounting	MU
Input shaft mounting	AP

Ot 3232, Ot 3233													
LS, LSES (kW)													
3-phase 4-pole LS, LSES													
min-1	i exact	71		80		90		100		112	132		
9.27	156	1.93	1.27										
10.2	142	2.13	1.40										
11.7	124	2.44	1.60	1.05									
12.9	113	2.67	1.76	1.15	0.86								
14.9	97.2	3.09	2.03	1.33	1.00	0.82							
16.7	86.7	3.46	2.28	1.49	1.12	0.91							
18.7	77.7	3.85	2.54	1.66	1.24	1.02	0.84						
21.3	68	4.40	2.89	1.89	1.42	1.16	0.96						
22.6	64.3	4.64	3.06	2.00	1.50	1.23	1.02						
26.8	54.1	5.50	3.62	2.36	1.78	1.45	1.20	0.88					
28.4	51	5.83	3.84	2.51	1.88	1.54	1.27	0.93					
32.1	45.2	6.56	4.32	2.82	2.12	1.73	1.43	1.05	0.87				
36.7	39.5	7.48	4.92	3.22	2.41	1.98	1.63	1.19	0.99	0.81			
41.7	34.8			3.64●	2.74●	2.24●	1.85	1.35	1.12	0.92			
47.1	30.8			4.11●	3.09●	2.53●	2.09	1.53	1.26	1.03			
53.2	27.3			4.62●	3.47●	2.84●	2.35	1.72	1.42	1.16	0.85		
60.2	24.1			5.22	3.92	3.21	2.65	1.94	1.60	1.31	0.96		
63.4	22.9			5.47	4.10	3.36	2.78	2.03	1.68	1.37	1.00		
71.2	20.4			5.98●	4.47●	3.67●	3.03	2.21	1.83	1.50	1.09		
89.9	16.1			7.13●	5.30●	4.6●	3.59	2.62	2.17	1.77	1.30		
39.4	36.8	6.46	4.25	2.78	2.09	1.71	1.41●						
46.0	31.5	7.54	4.96	3.24	2.44	1.99	1.65	1.20	1.00	0.82			
50.5	28.7	8.27	5.44	3.55	2.67	2.19	1.81	1.32	1.09	0.89			
55.7	26	9.13	6.01	3.92	2.95	2.41	2.00	1.46	1.21	0.99			
73.5	19.7		7.92	5.17	3.89	3.18	2.63	1.92	1.59	1.30	0.95		
81.7	17.7		8.82	5.76	4.33	3.54	2.93	2.14	1.77	1.45	1.06	0.80	
92.8	15.6		10.01	6.54	4.91	4.02	3.33	2.43	2.01	1.64	1.20	0.91	
103	14.1			7.26	5.46	4.47	3.69	2.70	2.23	1.83	1.34	1.01	
117	12.4			8.24	6.19	5.07	4.19	3.06	2.53	2.07	1.52	1.15	0.83
125	11.6			8.81	6.62	5.42	4.48	3.27	2.71	2.22	1.62	1.23	0.89
144	10.1			10.15	7.63	6.24	5.16	3.77	3.12	2.55	1.87	1.41	1.02
164	8.83				8.70	7.12	5.89	4.30	3.56	2.91	2.13	1.61	1.17
182	7.97				9.63●	7.88●	6.52●	4.76●	3.94●	3.22●	2.35	1.78	1.29
206	7.05					8.91●	7.37●	5.38●	4.45●	3.64●	2.66	2.02	1.46
219	6.61					9.5●	7.86●	5.74●	4.75●	3.88●	2.84	2.15	1.56
259	5.6						9.28	6.78	5.61	4.59	3.35	2.54	1.84
310	4.68							8.05	6.67	5.45	3.99	3.02	2.19
391	3.71							9.31	7.72	6.31	4.61	3.48	2.52
4-pole and brake LS, LSES													
3-phase 4-pole LS, LSES													
LS FCR		71 L		80 L		90 L		100 L		112	132		
LSES FCR				80		90		100		112	132		

● MU obligatory

Selection example

Required power: 0.55 kW
 Required speed: 16 min-1
 Duty factor required by the application: Kp = 1.4
 Operating position; Mounting form: Horizontal B3; shaft on left; foot mounted
 Designation : Ot 3233 i : 86.7 S L B3 - MI 4p LS71L 0.55 kW - 400VY - U.G.



Electromechanical products

Orthobloc 3000

Selection

Classes
I, II, III
(kp = 1, 1.4, 2)

Ot 3333
LS, LSES, brake LS, brake LSES - IP 55 - CI. F
230V/400VY 400VΔ - 50 Hz - U.G

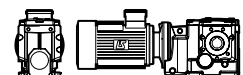
Integral mounting	MI
Universal mounting	MU
Input shaft mounting	AP

Ot 3333													
LS, LSES (kW)													
		0.25	0.37	0.55	0.75	0.9	1.1	1.5	1.8	2.2	3	4	5.5
3-phase 4-pole LS, LSES													
min-1	i exact	71		80		90		100		112		132	
9.08	160	3.41	2.24	1.46	1.10	0.90							
10.6	137	3.97	2.61	1.70	1.28	1.05	0.86						
11.6	125	4.35	2.86	1.86	1.40	1.15	0.95						
12.8	113	4.80	3.15	2.06	1.54	1.26	1.04						
15.0	96.4	5.61	3.68	2.40	1.80	1.48	1.22	0.89					
16.9	85.7	6.30	4.14	2.70	2.03	1.66	1.37	1.00	0.83				
18.8	77	7.00	4.60	3.00	2.25	1.84	1.52	1.11	0.92				
21.4	67.8	7.93	5.21	3.40	2.55	2.09	1.73	1.26	1.04	0.85			
23.8	61	8.79	5.78	3.77	2.83	2.31	1.91	1.40	1.16	0.94			
27.0	53.8	9.95	6.54	4.27	3.20	2.62	2.16	1.58	1.31	1.07			
28.8	50.3		6.98	4.55	3.42	2.80	2.31	1.69	1.40	1.14	0.83		
33.2	43.7		8.02	5.23	3.92	3.21	2.66	1.94	1.60	1.31	0.96		
37.9	38.3			5.94	4.46	3.65	3.02	2.20	1.82	1.49	1.09	0.83	
39.1	37.1		8.38	5.47	4.10	3.36	2.77	2.03	1.68	1.37			
41.9	34.6			6.57●	4.93●	4.03●	3.33●	2.43●	2.01●	1.65●	1.20	0.91	
44.3	32.7		9.48	6.19	4.64	3.80	3.14	2.29	1.90	1.55			
47.4	30.6			7.4●	5.55●	4.54●	3.75●	2.74●	2.27●	1.86●	1.36	1.03	
47.4	30.58			6.60	4.95	4.05	3.35	2.45	2.02	1.65			
50.5	28.7			7.88●	5.91●	4.84●	4.00●	2.92●	2.42●	1.98●	1.44	1.09	
54.7	26.5			7.58	5.69	4.65							
59.7	24.3			9.27●	6.95●	5.69●	4.70	3.43	2.84	2.32	1.70	1.29	0.93
62.3	23.3			8.61	6.46	5.28	4.37	3.19	2.64	2.16	1.58	1.19	0.86
69.0	21			9.50●	7.13●	5.83●	4.82●	3.52●	2.91●	2.38●	1.74	1.32	0.95
71.5	20.3				7.99●	6.55●	5.41	3.95	3.27	2.67	1.95	1.48	1.07
78.0	18.6				8.02●	6.57●	5.43●	3.96●	3.28●	2.68●	1.96	1.48	1.07
83.1	17.4				8.54●	6.99●	5.78●	4.22●	3.49●	2.85●	2.09	1.58	1.14
90.1	16.1					7.77●	6.40	4.67	3.87	3.16	2.31	1.75	1.27
98.2	14.8					8.21●	6.79	4.96	4.10	3.35	2.45	1.86	1.34
118	12.3					9.52●	7.85	5.73	4.75	3.88	2.84	2.15	1.55
148	9.78						9.30	6.79	5.63	4.60	3.36	2.54	1.84
4-pole and brake LS, LSES													
3-phase 4-pole LS, LSES													
LS FCR		71 L		80 L		90 L		100 L		112		132	
LSES FCR				80		90		100		112		132	

● MU obligatory

Selection example

Required power: 1.5 kW
 Required speed: 21 min-1
 Duty factor required by the application: Kp = 1
 Operating position; Mounting form: Horizontal B3; hollow shaft; BT faceplate mounted
Designation : Ot 3333 i : 67.8 SBTLR H B3 - MI 4p LSES90L 1.5 kW LS2/IE2- 400VY - U.G.



Electromechanical products

Orthobloc 3000

Selection

Classes
I, II, III
(kp = 1, 1.4, 2)

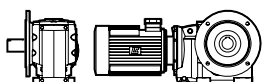
Ot 3433
LS, LSES, brake LS, brake LSES - IP 55 - Cl. F
230V/400VY 400VΔ - 50 Hz - U.G

Integral mounting	MI
Universal mounting	MU
Input shaft mounting	AP

Ot 3433

		LS, LSES (kW)													
		0.25	0.37	0.55	0.75	0.9	1.1	1.5	1.8	2.2	3	4	5.5	7.5	9
		3-phase 4-pole LS, LSES													
min-1	i exact	71			80		90			100		112	132		
9.44	154	7.08	4.65	3.03	2.28	1.86	1.54	1.12	0.93						
10.5	139	7.82	5.14	3.35	2.52	2.06	1.70	1.24	1.03	0.84					
11.7	124	8.73	5.74	3.74	2.81	2.30	1.90	1.39	1.15	0.94					
13.5	108		6.59	4.30	3.23	2.64	2.18	1.59	1.32	1.08					
15.2	95.4		7.43	4.85	3.64	2.98	2.46	1.80	1.49	1.22	0.89				
16.5	87.7		8.07	5.26	3.95	3.23	2.67	1.95	1.61	1.32	0.96				
18.7	77.5		9.12	5.95	4.46	3.65	3.02	2.20	1.82	1.49	1.09	0.83			
21.0	69			6.66	5.00	4.09	3.38	2.47	2.04	1.67	1.22	0.92			
23.4	61.9			7.40	5.56	4.55	3.76	2.74	2.27	1.86	1.36	1.03			
25.4	57			8.03	6.03	4.93	4.08	2.98	2.46	2.01	1.47	1.12	0.81		
28.6	50.6			9.02	6.77	5.54	4.58	3.34	2.77	2.26	1.65	1.25	0.91		
32.9	44.1				7.52	6.17	5.09	3.71	3.08	2.52	1.84	1.39	1.01		
36.3	39.9				8.10●	6.65●	5.48●	4.00●	3.31●	2.71●	1.98	1.50	1.08	0.80	
38.2	38	7.93			6.49	5.36	3.92	3.24	2.65						
41.5	35	8.54			6.99	5.77	4.22	3.49	2.85						
41.7	34.8	8.94●			7.35●	6.05●	4.42●	3.66●	2.99●	2.19	1.65	1.20	0.88		
46.1	31.5	9.59●			7.88●	6.49●	4.74●	3.93●	3.21●	2.35●	1.77●	1.28	0.94		
46.7	31	9.32			7.64	6.30	4.60	3.81	3.12	2.28	1.72				
50.8	28.6					8.44●	6.95	5.07	4.21	3.44	2.51	1.90	1.37	1.01	
53.6	27					8.48									
58.6	24.8					9.33●	7.68	5.60	4.65	3.80	2.78	2.10	1.52	1.12	
68.0	21.3					8.25●	6.02●	4.99●	4.08●	2.98	2.25	1.63	1.20		
72.3	20.1	8.90			6.50	5.39	4.40	3.22	2.43						
75.2	19.3	8.85●			6.46●	5.35●	4.38●	3.20	2.41	1.75	1.29				
82.8	17.5	9.47			6.92	5.73	4.69	3.43	2.59	1.87	1.38				
93.5	15.5						7.77	6.44	5.27	3.85	2.91	2.11	1.55		
95.6	15.2						7.64	6.34	5.18	3.79	2.86	2.07	1.52		
118	12.3						8.86	7.34	6.00	4.39	3.31	2.40	1.77		
152	9.51							8.79	7.18	5.25	3.96	2.87	2.11		
4-pole and brake LS, LSES		3-phase 4-pole LS, LSES													
LS FCR		71 L			80 L		90 L			100 L		112	132		
LSES FCR					80		90			100		112	132		

● MU obligatory



Selection example

Required power:	3 kW
Required speed:	25 min-1
Duty factor required by the application:	Kp 1.4
Operating position; Mounting form:	Horizontal B5; shaft on left; BS flange
Designation : Ot 3433 i : 57 BSL L B5 - MI 4p LSES100LR 3 kW LS2/IE2- 400VY - U.G.	

Electromechanical products

Orthobloc 3000

Selection

Classes
I, II, III
(kp = 1, 1.4, 2)

Ot 3533
LS, LSES, brake LS, brake LSES - IP 55 - Cl. F
230V/400VY 400VΔ - 50 Hz - U.G

Integral mounting	MI
Universal mounting	MU
Input shaft mounting	AP

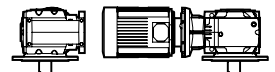
Ot 3533

		LSES (kW)																	
		0.75	0.9	1.1	1.5	1.8	2.2	3	4	5.5	7.5	9	11	15	18.5	22	30		
		3-phase 4-pole LSES																	
min-1	i exact	80		90			100			112	132			160		180		200	
9.13	159	3.64	2.97	2.46	1.79	1.48	1.21	0.89											
10.8	134	4.29	3.51	2.90	2.12	1.75	1.43	1.05											
12.0	121	4.75	3.89	3.21	2.34	1.94	1.58	1.16	0.88										
13.3	109	5.24	4.28	3.54	2.58	2.13	1.75	1.27	0.97										
14.4	101	5.67	4.64	3.83	2.79	2.31	1.89	1.38	1.05										
16.8	86.5	6.56	5.37	4.43	3.24	2.68	2.19	1.60	1.21	0.88									
18.0	80.6	7.03●	5.75●	4.75	3.46	2.87	2.34	1.71	1.30	0.94									
20.6	70.6	7.99●	6.54●	5.40	3.94	3.26	2.66	1.95	1.47	1.07									
23.3	62.4	9.00●	7.36●	6.08	4.44	3.67	3.00	2.19	1.66	1.20	0.89								
26.1	55.5		8.23●	6.80	4.96	4.10	3.35	2.45	1.86	1.34	0.99	0.83							
29.2	49.8		9.15●	7.55	5.51	4.56	3.73	2.72	2.06	1.49	1.10	0.92							
34.1	42.6			8.77	6.40	5.29	4.33	3.16	2.39	1.73	1.28	1.06	0.87						
37.6	38.6			9.64●	7.03●	5.82●	4.76●	3.47●	2.63●	1.90	1.40	1.17	0.96						
37.9	38.2			9.49	6.92	5.73	4.68	3.42	2.59										
42.6	34.04				7.73	6.40	5.23	3.82	2.89										
42.6	34				7.93●	6.56●	5.36●	3.92●	2.97●	2.15	1.58	1.32	1.08						
47.5	30.5				8.59	7.11	5.81	4.24	3.21										
47.6	30.49				8.80●	7.28●	5.95●	4.35●	3.29●	2.38	1.76	1.46	1.20	0.88					
53.4	27.1				9.82●	8.13●	6.65●	4.86●	3.68●	2.66	1.96	1.64	1.34	0.98					
55.6	26.1				9.96	8.24	6.74	4.92	3.73										
59.8	24.3					9.04●	7.39●	5.40●	4.08●	2.96	2.18	1.82	1.49	1.09	0.88				
61	23.6					9.05●	7.40●	5.40●	4.09●	2.96	2.18	1.82	1.49	1.09	0.88				
69.6	20.8						8.33●	6.09●	4.61●	3.33	2.46	2.05	1.67	1.23	0.99	0.83			
77.6	18.7						9.24●	6.75●	5.11●	3.70	2.72	2.27	1.86	1.36	1.10	0.93			
87.2	16.6							7.53●	5.70●	4.12	3.04	2.53	2.07	1.52	1.23	1.03			
97.5	14.9							8.36●	6.33●	4.58	3.37	2.81	2.30	1.68	1.36	1.15	0.84		
118	12.3							9.75●	7.37●	5.34	3.93	3.28	2.68	1.96	1.59	1.34	0.98		
153	9.47								8.88●	6.44	4.74	3.95	3.23	2.36	1.92	1.61	1.18		
4-pole and brake LS, LSES		3-phase 4-pole LSES																	
LS FCR		80 L		90 L			100 L			112	132			160					
LSES FCR		80		90			100			112	132			160					
LS, LSES FCPL															160		180		200

● MU obligatory

Selection example

Required power: 4 kW
 Required speed: 17 min-1
 Duty factor required by the application: Kp = 1
 Operating position; Mounting form: V1; shaft on left facing down; BS flange
Designation : Ot 3533 i : 86.5 BSL L V1 - MI 4p LSES112MU 4 kW LS2/IE2 - 400VY - U.G.



Electromechanical products

Orthobloc 3000

Selection

Classes
I, II, III
(kp = 1, 1.4, 2)

Ot 3633
LS, LSES, brake LS, brake LSES - IP 55 - Cl. F
230V/400VY 400VΔ - 50 Hz - U.G

Integral mounting	MI
Universal mounting	MU
Input shaft mounting	AP

Ot 3633

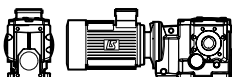
		LSES (kW)															
		1.1	1.5	1.8	2.2	3	4	5.5	7.5	9	11	15	18.5	22	30	37	45
		3-phase 4-pole LSES															
min-1	i exact	90		100		112	132			160		180		200	225		
9.25	157	4.01	2.92	2.42	1.98	1.44	1.09										
10.8	135	4.67	3.41	2.82	2.30	1.68	1.27	0.92									
11.7	124	5.08	3.70	3.06	2.51	1.83	1.39	1.00									
13.5	108	5.83	4.25	3.52	2.88	2.10	1.59	1.15	0.85								
15.3	95.1	6.61	4.82	3.99	3.26	2.38	1.80	1.31	0.96	0.80							
17	85.3	7.36	5.37	4.44	3.63	2.65	2.01	1.46	1.07	0.89							
19.1	75.9	8.27	6.04	4.99	4.08	2.98	2.26	1.63	1.20	1.00	0.82						
20.8	69.6				4.46	3.25	2.47	1.78	1.32	1.10	0.90						
24.1	60.1				5.15	3.76	2.85	2.06	1.52	1.27	1.04						
26.7	54.4				5.70	4.16	3.15	2.28	1.68	1.40	1.15	0.84					
30.3	47.8				6.48	4.73	3.59	2.59	1.91	1.60	1.30	0.95					
32.9	44.1				7.03	5.13	3.89	2.82	2.08	1.73	1.41	1.03	0.84				
37.0	39.2				7.91	5.78	4.38	3.17	2.33	1.95	1.59	1.16	0.94				
41.4	35				8.86	6.47	4.90	3.55	2.61	2.18	1.78	1.30	1.06	0.89			
46.2	31.4				9.89	7.22	5.47	3.96	2.92	2.43	1.99	1.45	1.18	0.99			
50.7	28.6					7.92	6.00	4.34	3.20	2.67	2.18	1.60	1.29	1.09	0.80		
58.0	25					9.06	6.86	4.97	3.66	3.05	2.50	1.83	1.48	1.24	0.92		
67.7	21.4									3.44	2.82	2.06	1.67	1.40	1.03	0.84	
75.4	19.2									3.46	2.83	2.07	1.68	1.41	1.04	0.84	
81.2	17.9						7.61	5.52	4.06	3.38	2.77	2.02	1.64	1.38	1.01	0.82	
90.7	16						7.90	5.72	4.21	3.51	2.87	2.10	1.70	1.43	1.05	0.85	
99.4	14.6						8.36	6.05	4.45	3.71	3.03	2.22	1.80	1.51	1.11	0.90	
114	12.7						9.06	6.57	4.83	4.03	3.29	2.41	1.95	1.64	1.21	0.98	
133	10.9									4.41	3.61	2.64	2.14	1.80	1.32	1.07	
148	9.81															1.14	
159	9.1						7.63	5.53	4.07	3.39	2.77	2.03	1.65	1.38	1.02	0.83	
178	8.15						7.91	5.73	4.22	3.52	2.87	2.10	1.71	1.43	1.05	0.86	
195	7.43						9.32	6.75	4.97	4.14	3.38	2.48	2.01	1.69	1.24	1.01	
223	6.5						9.08	6.58	4.84	4.04	3.30	2.42	1.96	1.65	1.21	0.98	
260	5.57									4.42	3.61	2.65	2.15	1.80	1.32	1.08	
290	5									4.70	3.85	2.81	2.28	1.92	1.41	1.15	

4-pole and brake LS, LSES				3-phase 4-pole LSES				
LS FCR	90 L	100 L	112	132	160			
LSES FCR	90	100	112	132	160			
LS, LSES FCPL					160	180	200	225

• MU obligatory

Selection example

Required power:	22 kW
Required speed:	50 min-1
Duty factor required by the application:	Kp = 1
Operating position; Mounting form:	Horizontal B3; hollow shaft; BT faceplate mounted
Designation : Ot 3633 i : 28.6 SBTLR H B3 - MI 4p LSES180LR 22 kW LS2/IE2 - 400VΔ - U.G.	



Electromechanical products

Orthobloc 3000

Selection

Classes
I, II, III
(kp = 1, 1.4, 2)

Ot 3733
LS, LSES, brake LS, brake LSES - IP 55 - Cl. F
230V/400VY 400VΔ - 50 Hz - U.G

Integral mounting	MI
Universal mounting	MU
Input shaft mounting	AP

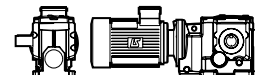
Ot 3733																				
LSES (kW)																				
		1.1	1.5	1.8	2.2	3	4	5.5	7.5	9	11	15	18.5	22	30	37	45	55 ¹		
		3-phase 4-pole LSES																		
min-1	i exact	90			100		112	132			160		180		200	225		250		
9.57	152	8.05	5.93	4.91	4.01	2.93	2.22	1.60	1.18											
10.8	135	9.03	6.65	5.50	4.50	3.28	2.49	1.80	1.33	1.11	0.90									
11.8	123	9.88	7.28	6.02	4.92	3.59	2.72	1.97	1.45	1.21	0.99									
13.3	109		8.21	6.79	5.55	4.05	3.07	2.22	1.64	1.37	1.12	0.82								
14.8	98				6.15●	4.49	3.40	2.46	1.81	1.51	1.24	0.90								
16.6	87.4				6.88●	5.02	3.80	2.75	2.03	1.69	1.38	1.01	0.82							
18.0	80.4				7.47●	5.45	4.13	2.99	2.20	1.84	1.50	1.10	0.89							
21.0	68.9				8.67●	6.33●	4.79●	3.47	2.56	2.13	1.74	1.27	1.03	0.87						
22.9	63.2				9.43●	6.89●	5.21●	3.77	2.78	2.32	1.90	1.39	1.12	0.94						
25.9	55.9					7.76●	5.88●	4.25	3.13	2.61	2.14	1.56	1.27	1.06						
30.4	47.7					8.69●	6.57●	4.75	3.50	2.92	2.38	1.75	1.42	1.19	0.87					
34.2	42.5					9.44●	7.12●	5.16	3.79	3.16	2.58	1.89	1.53	1.29	0.95					
38.1	38.1									3.39	2.77	2.03	1.65	1.38	1.02	0.83				
42.1	34.4									3.62	2.96	2.16	1.75	1.47	1.08	0.88				
47.7	30.4									3.92	3.20	2.34	1.90	1.60	1.17	0.95				
53.9	26.9									4.22	3.45	2.53	2.05	1.72	1.27	1.03	0.85			
60.3	24									5.04	4.12	3.01	2.44	2.05	1.51	1.23	1.01	0.83●		
64.3	22.6										4.11●	3.01●	2.44●	2.05●	1.51	1.23	1.01	0.83●		
72.9	19.9										4.15●	3.04●	2.46●	2.07●	1.52	1.24	1.02	0.84●		
82.6	17.6										4.99	4.08	2.99	2.42	2.03	1.49	1.22	1.00		
93.6	15.5										5.18	4.24	3.10	2.51	2.11	1.55	1.26	1.04		
106	13.7										5.22	4.27	3.12	2.53	2.13	1.56	1.27	1.05		
118	12.3										5.97	4.88	3.57	2.90	2.43	1.79	1.45	1.20		
126	11.5											5.07●	3.71●	3.01●	2.53●	1.86	1.51	1.24		
143	10.1											5.45●	3.99●	3.23●	2.72●	2.00	1.62	1.34		
162	8.95											4.99	4.08	2.99	2.42	2.03	1.49	1.22		
184	7.9											5.18	4.23	3.10	2.51	2.11	1.55	1.26		
207	6.99											5.22	4.27	3.12	2.53	2.13	1.56	1.27		
232	6.25											5.58	4.56	3.34	2.71	2.28	1.67	1.36		
247	5.86												4.74●	3.47●	2.81●	2.36●	1.74	1.41		
280	5.17												5.10●	3.73●	3.03●	2.54●	1.87	1.52		
		4-pole and brake LS, LSES																		
		3-phase 4-pole LS, LSES																		
LS FCR		90 L			100 L		112	132			160									
LSES FCR		90			100		112	132			160									
LS, LSES FCPL											160		180		200		225		250	

1. LS B35 obligatory

• MU obligatory

Selection example

Required power: 45 kW
 Required speed: 93 min-1
 Duty factor required by the application: Kp = 1
 Operating position; Mounting form: Horizontal B3; shaft on left; foot mounted
 Designation : Ot 3733 i : 15.5 S L B3 - MI 4p LSES225MR 45 kW LS2/IE2 - 400VΔ - U.G.



Electromechanical products

Orthobloc 3000

Selection

Classes
I, II, III
(kp = 1, 1.4, 2)

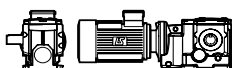
Ot 3833
LS, LSES, brake LS, brake LSES - IP 55 - CI. F
230V/400VY 400VΔ - 50 Hz - U.G

Integral mounting	MI
Universal mounting	MU
Input shaft mounting	AP

Ot 3833													
LSES (kW)													
		5.5	7.5	9	11	15	18.5	22	30	37	45	55 ¹	75 ¹
3-phase 4-pole LSES													
min-1	i exact	132		160		180		200	225		250	280	
9.42	154	2.54	1.87	1.56	1.28	0.93							
10.6	137	2.84	2.09	1.74	1.43	1.04	0.85						
11.3	128	3.04	2.24	1.87	1.53	1.12	0.91						
12.6	115	3.39	2.50	2.09	1.70	1.25	1.01	0.85					
14.2	102	3.83	2.82	2.35	1.92	1.41	1.14	0.96					
16.0	90.8	4.30	3.17	2.64	2.16	1.58	1.28	1.07					
18.0	80.5	4.85	3.57	2.98	2.43	1.78	1.44	1.21	0.89				
20.1	72.2	5.41	3.98	3.32	2.72	1.99	1.61	1.35	1.00	0.81			
22.6	64.3	6.06	4.47	3.73	3.05	2.23	1.81	1.52	1.12	0.91			
25.4	57	6.84	5.04	4.21	3.44	2.51	2.04	1.71	1.26	1.03	0.84		
28.9	50.1	7.78	5.73	4.78	3.91	2.86	2.32	1.95	1.43	1.17	0.96		
32.8	44.2	8.84	6.51	5.43	4.44	3.25	2.63	2.21	1.63	1.33	1.09	0.90●	
37.3	38.9		7.38	6.16	5.03	3.68	2.98	2.51	1.84	1.50	1.24	1.02●	
41.1	35.3		8.14	6.79	5.55	4.06	3.29	2.76	2.03	1.66	1.36	1.12●	0.82●
47.1	30.8		9.33	7.78	6.36	4.65	3.77	3.16	2.33	1.90	1.56	1.29●	0.94●
52.5	27.6			8.43	6.89	5.04	4.09	3.43	2.53	2.06	1.69	1.39●	1.02●
59.2	24.5			9.17	7.50	5.49	4.45	3.74	2.75	2.24	1.84	1.51●	1.11●
65.3	22.2								2.84				
65.6	22.1		9.68	7.91	5.79	4.70	3.95			2.36	1.94	1.60●	1.17●
74.0	19.6							3.21					
75.1	19.3			8.86	6.48	5.26	4.41		2.64	2.17	1.78●	1.31●	
81.5	17.8			9.11	6.67	5.40	4.54	3.34	2.71	2.23	1.84●	1.35●	
93.5	15.5				7.56	6.13	5.15	3.79	3.08	2.53	2.08●	1.53●	
104	13.9				8.18	6.63	5.57	4.09	3.33	2.74	2.25●	1.65●	
117	12.4				8.87	7.19	6.04	4.44	3.61	2.97	2.44●	1.79●	
129	11.2							2.84					
131	11.1				9.22	7.48	6.28		3.76	3.09	2.54●	1.86●	
147	9.86							3.21					
149	9.75					8.48	7.13		4.26	3.50	2.88●	2.11●	
162	8.94					6.67	5.41	4.54	3.34	2.71	2.23	1.84●	1.35●
186	7.8					7.57	6.13	5.15	3.79	3.08	2.53	2.08●	1.53●
208	6.98					8.18	6.64	5.57	4.10	3.33	2.74	2.25●	1.65●
233	6.21					8.87	7.20	6.04	4.44	3.61	2.97	2.44●	1.79●
259	5.59					9.23	7.48	6.29		3.76	3.09	2.54●	1.86●
296	4.9						8.49	7.13		4.26	3.51	2.88●	2.11●
4-pole and brake LS, LSES													
3-phase 4-pole LS, LSES													
LS FCR		132		160									
LSES FCR		132		160									
LS, LSES FCPL				160		180	200	225	250	280			

1. LS B35 obligatory

• MU obligatory



Selection example

Required power: 45 kW
 Required speed: 33 min-1
 Duty factor required by the application: Kp = 1
 Operating position; Mounting form: Horizontal B3; shaft on left; foot mounted
Designation : Ot 3833 i : 44.2 S L B3 - MI 4p LSES225MR 45 kW LS2/IE2 - 400V Δ - U.G.

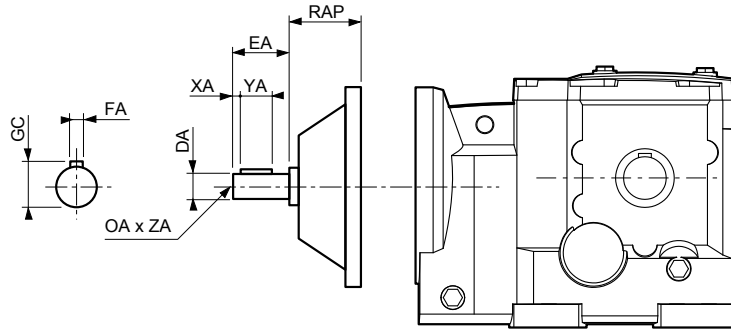
Electromechanical products

Orthobloc 3000

Dimensions

Dimensions of the AP input shaft

Dimensions in millimetres



Type	AP								 kg
	Ø DA	EA	YA	XA	FA	GC	RAP	OA x ZA	
Ot 3833	48k6	110	90	10	14	51,5	51	M16x24	27
Ot 3733	48k6	110	90	10	14	51,5	51	M16x24	27
Ot 3633	48k6	110	90	10	14	51,5	51	M16x24	27
Ot 3533	28j6	60	50	5	8	31	138,5	M10x22	5
Ot 3433	28j6	60	50	5	8	31	69	M10x22	5
Ot 3333	24j6	50	40	4,5	8	27	73	M8x19	1,2
Ot 3233	24j6	50	40	4,5	8	27	73	M8x19	1,5
Ot 3232	24j6	50	40	4,5	8	27	73	M10x22	1,2
Ot 3132	24j6	50	40	4,5	8	27	73	M8x19	1,5

Dimensions

Dimensions in millimetres

Technical drawing of the 1500W motor assembly showing dimensions and mounting points. The drawing includes the following dimensions and features:

- Overall Dimensions:**
 - LB: Total length of the motor assembly.
 - J: Distance from the motor body to the start of the mounting bracket.
 - LJ: Distance from the motor body to the center of the mounting bracket.
 - 165: Distance from the center of the mounting bracket to the center of the motor body.
 - 80: Distance from the center of the mounting bracket to the center of the motor body.
- Motor Body Dimensions:**
 - HJ: Height of the motor body.
 - 46.5: Distance from the motor body to the center of the mounting bracket.
 - 66: Distance from the motor body to the center of the mounting bracket.
 - Ø154: Diameter of the motor body.
- Mounting Bracket Dimensions:**
 - 69: Distance from the center of the mounting bracket to the center of the motor body.
 - 8: Distance from the center of the mounting bracket to the center of the motor body.
 - 28: Distance from the center of the mounting bracket to the center of the motor body.
 - 20°: Angle of the mounting bracket.
 - 39: Distance from the center of the mounting bracket to the center of the motor body.
 - 50: Distance from the center of the mounting bracket to the center of the motor body.
 - 61: Distance from the center of the mounting bracket to the center of the motor body.
- Mounting Points:**
 - 4xM8x12/Ø95: Four mounting points on the motor body.
 - 1xØ6x12/Ø95: One mounting point on the motor body.
 - 4xØ9: Four mounting points on the motor body.

* R shaft on right option

Electromechanical products

Orthobloc 3000

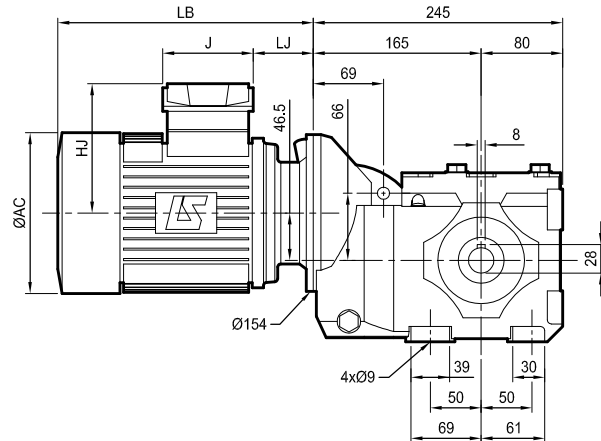
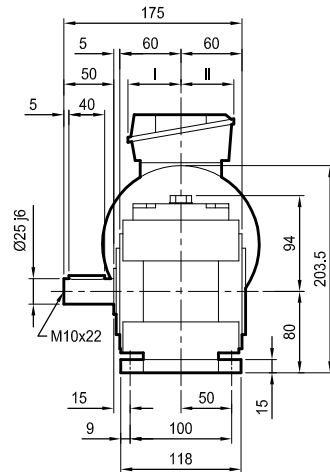
Dimensions

Dimensions of Orthobloc (Ot) gearboxes, MI integral mounting,
Ot 3132

Dimensions in millimetres

- S foot mounted form, L* output shaft on left

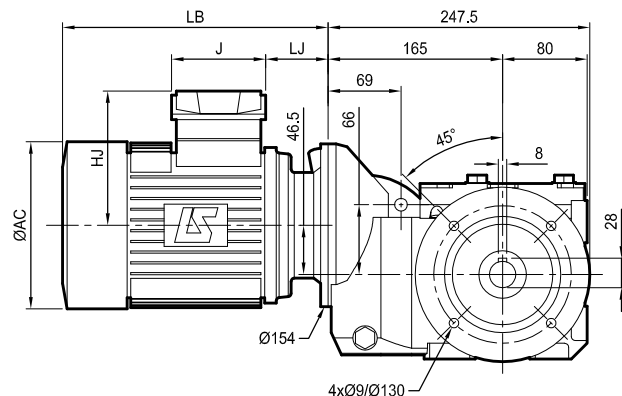
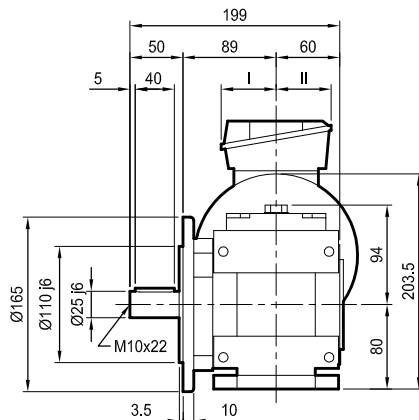

Ot: 14.5 kg
+ Motor



* R shaft on right option

- BS L* flange form, L* output shaft on left


Ot: 14.8 kg
+ Motor



* BSR R right option: identical flange and shaft

4-pole motors																
Type	LSES								LSES FCR							
	AC	HJ	J	LB	LJ	I	II	 kg	AC	HJ	J	LB	LJ	I	II	 kg
LSES 80	170	135	86	288.5	67.5	43	43	11.7	172	146	160	349.5	46	55	55	18
LSES 90	190	135	86	290	71	43	43	15.2	184	156	160	349.5	58.5	55	55	24.2
LSES 100LR	200	140	86	354.5	72	43	43	25.7	200	161	160	410	59.5	55	55	30

4-pole motors																
Type	LS								LS FCR							
	AC	HJ	J	LB	LJ	I	II		AC	HJ	J	LB	LJ	I	II	
LS 71 L	140	109	86	217	49	43	43	8.3	140	135	160	268	34	55	55	11.3
LS 80 L	-	-	-	-	-	-	-	-	172	146	160	300	46	55	55	18
LS 90L	-	-	-	-	-	-	-	-	184	156	160	349.5	58.5	55	55	24.2
LS 100L	-	-	-	-	-	-	-	-	200	161	160	397.5	59.5	55	55	30

Dimensions

Dimensions in millimetres

Technical drawing of the motor assembly showing front and side views with dimensions.

Front View Dimensions:

- Overall width: 290
- Distance from mounting flange to centerline: 197
- Distance from centerline to terminal box: 93
- Terminal box width: 87
- Terminal box height: 67
- Terminal box mounting holes: 4x Ø11
- Terminal box mounting hole spacing: 95
- Terminal box mounting hole offset: 45
- Terminal box mounting hole diameter: 4x Ø11
- Terminal box mounting hole offset: 55
- Terminal box mounting hole diameter: 4x Ø11
- Terminal box mounting hole offset: 67
- Terminal box mounting hole diameter: 4x Ø11
- Terminal box mounting hole offset: 87
- Terminal box mounting hole diameter: 4x Ø11
- Terminal box mounting hole offset: 95
- Terminal box mounting hole diameter: 4x Ø11
- Terminal box mounting hole offset: 115
- Terminal box mounting hole diameter: 4x Ø11
- Terminal box mounting hole offset: 197
- Terminal box mounting hole diameter: 4x Ø11
- Terminal box mounting hole offset: 290

Side View Dimensions:

- Overall height: 184
- Distance from mounting flange to centerline: 197
- Distance from centerline to terminal box: 93
- Terminal box width: 87
- Terminal box height: 67
- Terminal box mounting holes: 4x Ø11
- Terminal box mounting hole spacing: 95
- Terminal box mounting hole offset: 45
- Terminal box mounting hole diameter: 4x Ø11
- Terminal box mounting hole offset: 55
- Terminal box mounting hole diameter: 4x Ø11
- Terminal box mounting hole offset: 67
- Terminal box mounting hole diameter: 4x Ø11
- Terminal box mounting hole offset: 87
- Terminal box mounting hole diameter: 4x Ø11
- Terminal box mounting hole offset: 95
- Terminal box mounting hole diameter: 4x Ø11
- Terminal box mounting hole offset: 115
- Terminal box mounting hole diameter: 4x Ø11
- Terminal box mounting hole offset: 197
- Terminal box mounting hole diameter: 4x Ø11
- Terminal box mounting hole offset: 290

Technical drawing of the motor from the front view, showing dimensions in mm. The drawing includes the motor body, cooling fan, and terminal box. Key dimensions are: total length 297, terminal box length LB, terminal box width J, distance from terminal box to fan center LJ, fan diameter Ø184, fan mounting flange diameter 86, fan mounting flange thickness 77, fan mounting flange width 63, fan mounting flange height HJ, fan mounting flange width 8, fan mounting flange angle 45°, fan mounting flange thickness 33, and fan mounting flange hole pattern 4xØ12/Ø165.



Electromechanical products

Orthobloc 3000

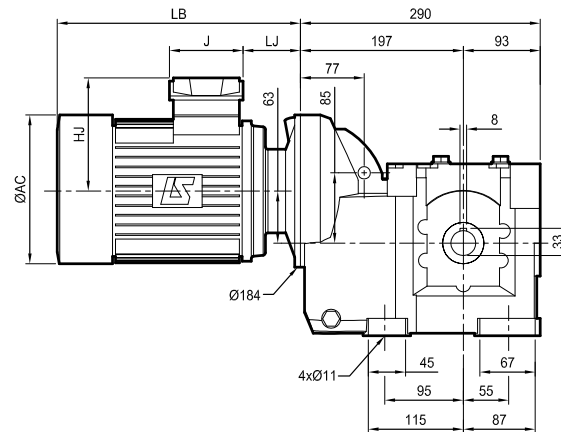
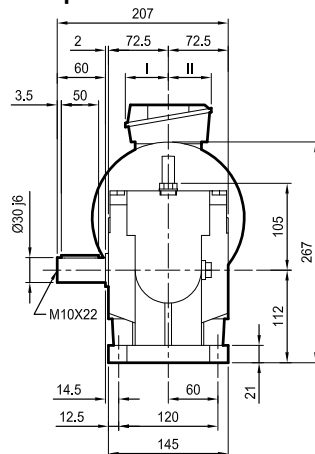
Dimensions

Dimensions of Orthobloc (Ot) gearboxes, MI integral mounting,
Ot 3232

Dimensions in millimetres

- S foot mounted form, L* output shaft on left

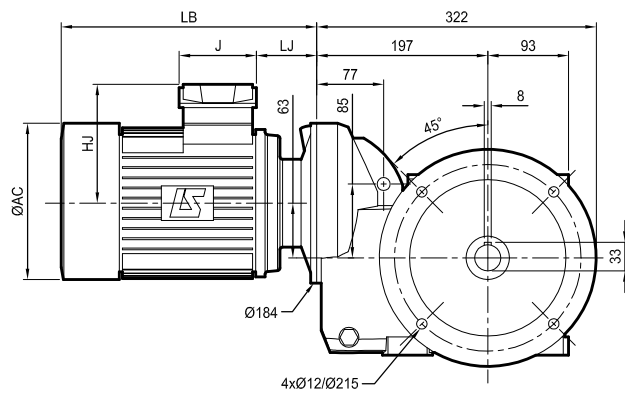
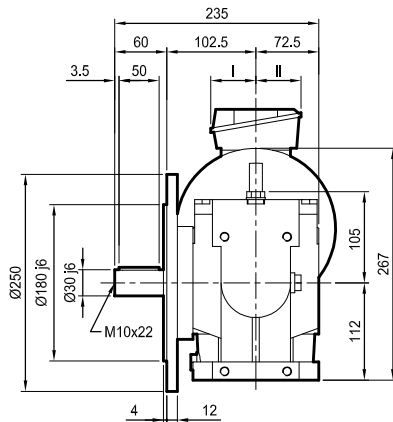

Ot: 22 kg
+ Motor



* R shaft on right option

- BS L* flange form, L* output shaft on left


Ot: 23.3 kg
+ Motor



* BSR R right option: identical flange and shaft

Type	4-pole motors															 kg
	LSES							LSES FCR								
	AC	HJ	J	LB	LJ	I	II	AC	HJ	J	LB	LJ	I	II		
LSES 80	170	135	86	288	67.5	43	43	11.7	172	146	160	349.5	46	55	55	18
LSES 90	190	135	86	290	71	43	43	15.2	184	156	160	349.5	58.5	55	55	24.2
LSES 100LR	200	140	86	354.5	72	43	43	25.7	200	161	160	410	59.5	55	55	30
LSES 112MU	235	149	86	371	73.5	43	43	35	235	169	160	434	61	55	55	44.5
LSES 132SU	260	172	126	397	52.5	63	63	42	235	169	160	477	61	55	55	48

Type	4-pole motors																 kg
	LS							LS FCR									
	AC	HJ	J	LB	LJ	I	II	AC	HJ	J	LB	LJ	I	II			
LS 71 L	140	109	86	217	49	43	43	8.3	140	135	160	268	34	55	55	11.3	
LS 80 L	-	-	-	-	-	-	-	-	172	146	160	300	46	55	55	18	
LS 90L	-	-	-	-	-	-	-	-	184	156	160	349.5	58.5	55	55	24.2	
LS 100L	-	-	-	-	-	-	-	-	200	161	160	397.5	59.5	55	55	30	
LS 112MG	-	-	-	-	-	-	-	-	235	169	160	434	61	55	55	44.5	
LS 132S	-	-	-	-	-	-	-	-	235	169	160	457	61	55	55	48	

Electromechanical products

Orthobloc 3000

Dimensions

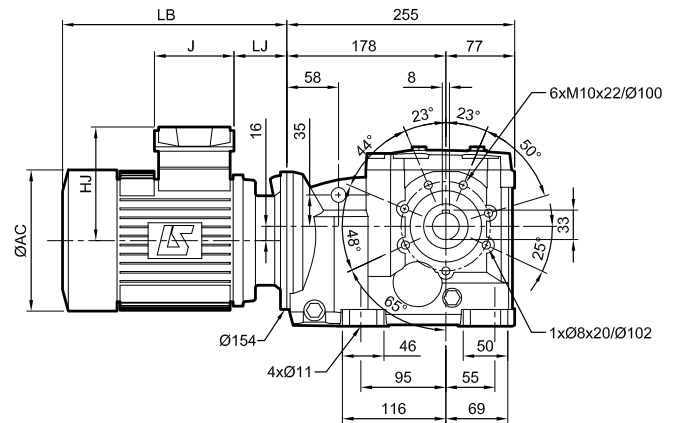
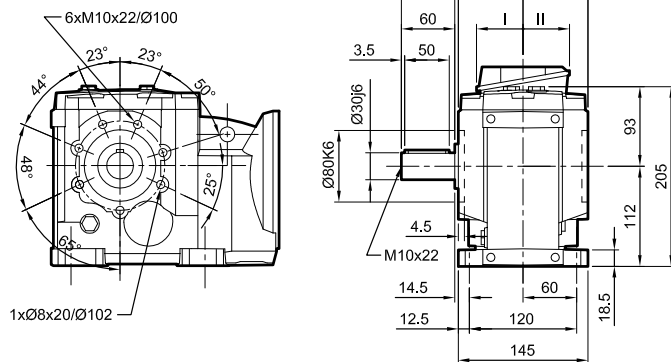
Dimensions of Orthobloc (Ot) gearboxes, MI integral mounting,
Ot 3233

Dimensions in millimetres

- SBT LR faceplate form, L* output shaft on left



Ot: 21 kg
+ Motor

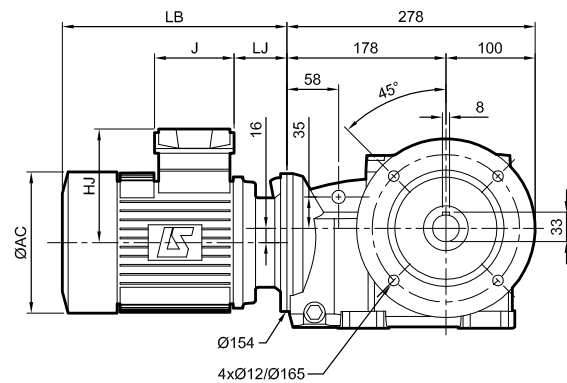
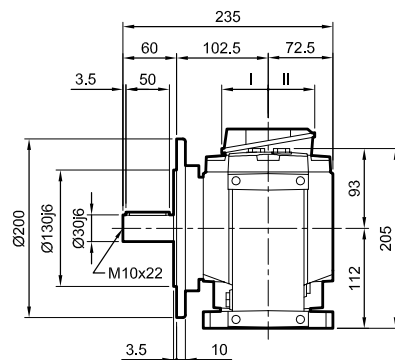


* R shaft on right option

- BD L* flange form, L* output shaft on left



Ot: 21.7 kg
+ Motor



* BDR R right option: identical flange and shaft

Electromechanical products

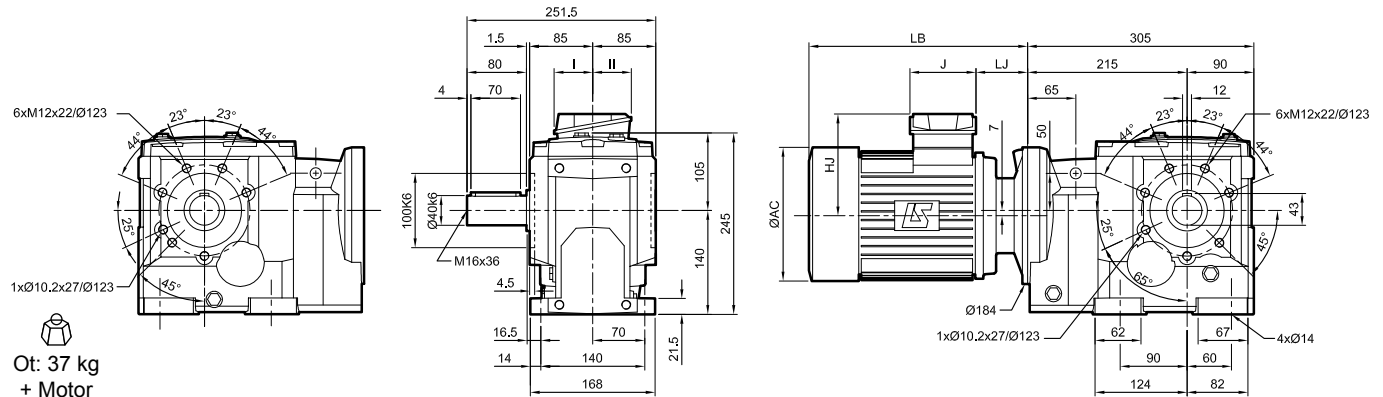
Orthobloc 3000

Dimensions

Dimensions of Orthobloc (Ot) gearboxes, MI integral mounting,
Ot 3333

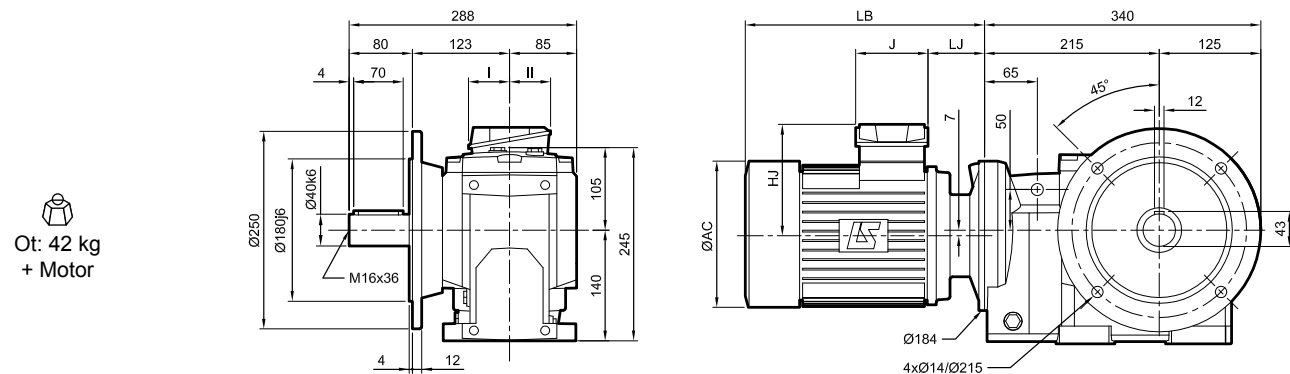
Dimensions in millimetres

- SBT LR faceplate form, L* output shaft on left



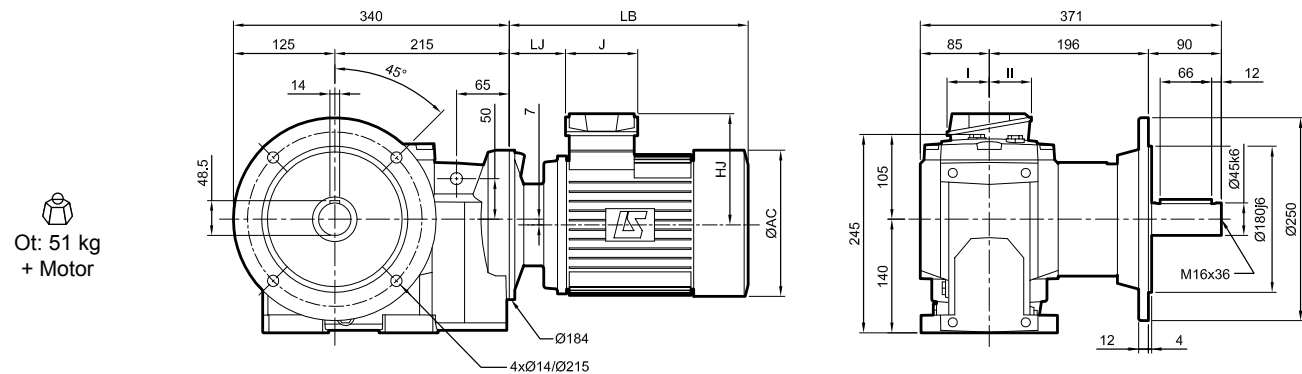
* R shaft on right option

- BD L* flange form, L* output shaft on left



* BDR R right option: identical flange and shaft

- BR R reinforced flange form, R* output shaft on right exclusively



* Left option: **not available**

Dimensions

Dimensions in millimetres

Electromechanical products

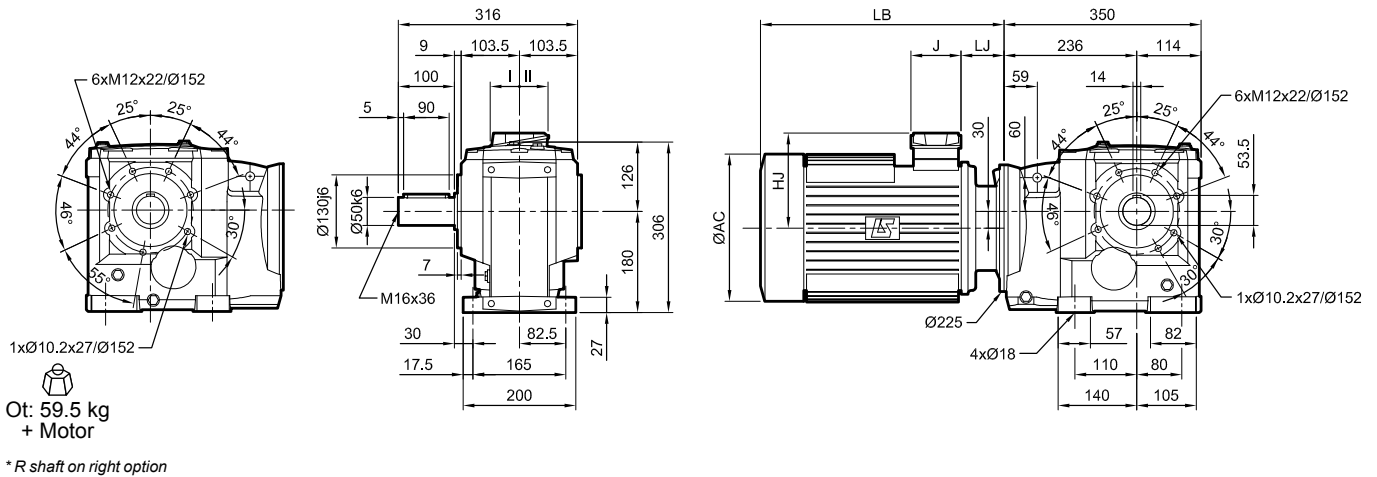
Orthobloc 3000

Dimensions

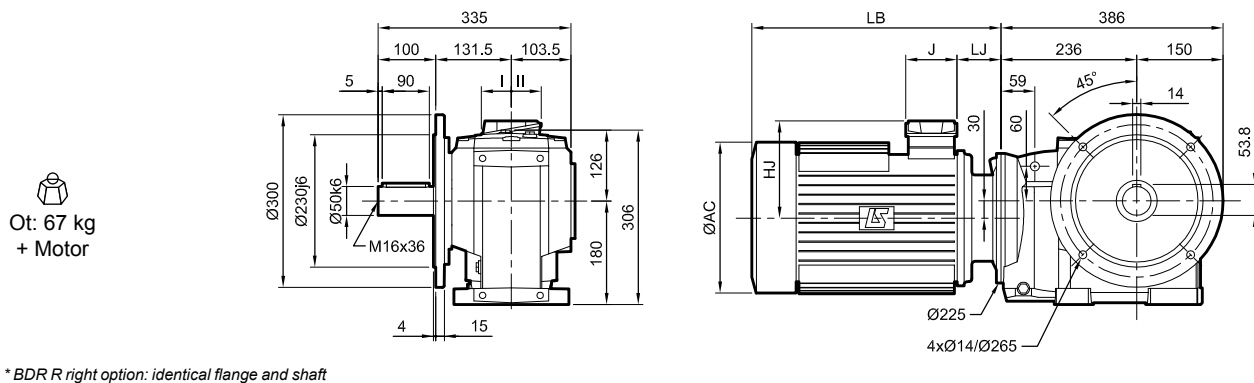
Dimensions of Orthobloc (Ot) gearboxes, MI integral mounting,
Ot 3433

Dimensions in millimetres

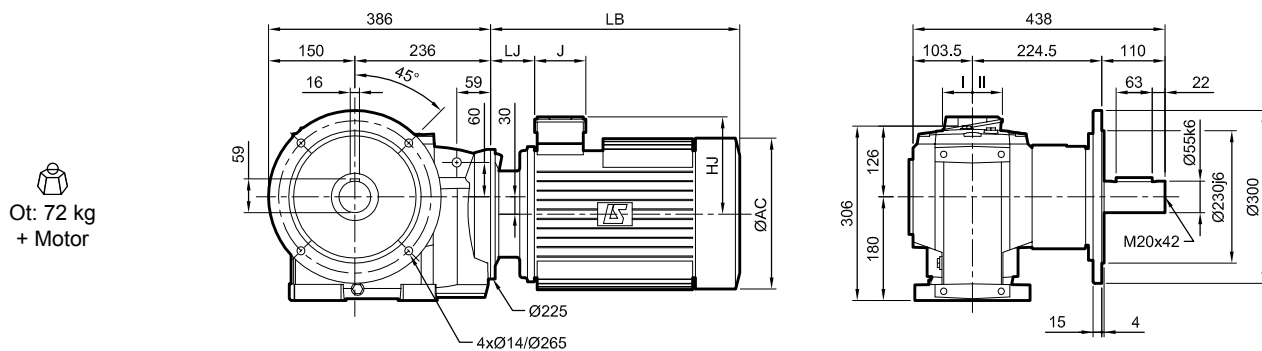
- SBT LR faceplate form, L* output shaft on left



- BD L* flange form, L* output shaft on left



- BR R reinforced flange form, R* output shaft on right exclusively



Electromechanical products

Orthobloc 3000

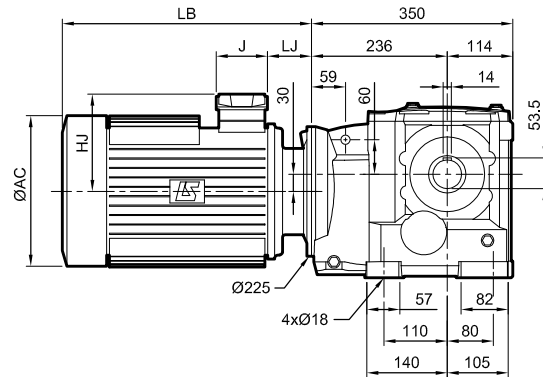
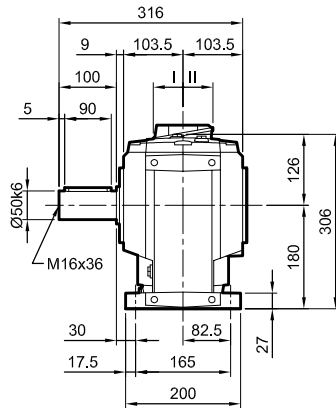
Dimensions

Dimensions of Orthobloc (Ot) gearboxes, MI integral mounting,
Ot 3433

Dimensions in millimetres

- S foot mounted form, L* output shaft on left

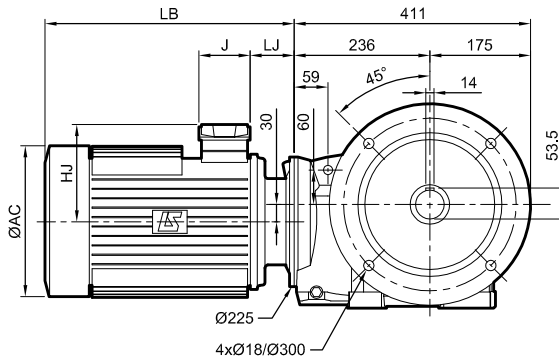
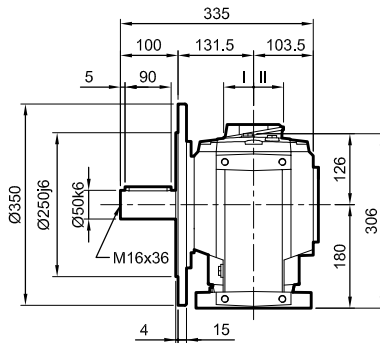

Ot: 60 kg
+ Motor



* R shaft on right option

- BS L* flange form, L* output shaft on left


Ot: 68 kg
+ Motor



* BSR R right option: identical flange and shaft

4-pole motors

Type	LSES								LSES FCR							
	AC	HJ	J	LB	LJ	I	II		AC	HJ	J	LB	LJ	I	II	
LS 80	170	135	86	284	63.5	43	43	11.7	172	146	160	345.5	42	55	55	18
LS 90	190	135	86	286	67	43	43	15.2	184	156	160	345.5	54.5	55	55	24.2
LS 100LR	200	140	86	350.5	68	43	43	25.7	200	161	160	406	55.5	55	55	30
LS 112MU	235	149	86	367	69.5	43	43	35	235	169	160	430	58	55	55	44.5
LS 132MU	265	190	126	460	65	63	63	68	280	188	160	541	73	55	55	80

4-pole motors

Type	LS								LS FCR							
	AC	HJ	J	LB	LJ	I	II		AC	HJ	J	LB	LJ	I	II	
LS 71 L	140	109	86	213	45	43	43	8.3	140	130	160	254.5	21.5	55	55	11.3
LS 80 L	-	-	-	-	-	-	-	-	172	146	160	296	42	55	55	18
LS 90L	-	-	-	-	-	-	-	-	184	156	160	345.5	54.5	55	55	24.2
LS 100L	-	-	-	-	-	-	-	-	200	161	160	393.5	55.5	55	55	30
LS 112MG	-	-	-	-	-	-	-	-	235	169	160	430	58	55	55	44.5
LS 132M	-	-	-	-	-	-	-	-	280	188	160	541	73	55	55	80

Electromechanical products

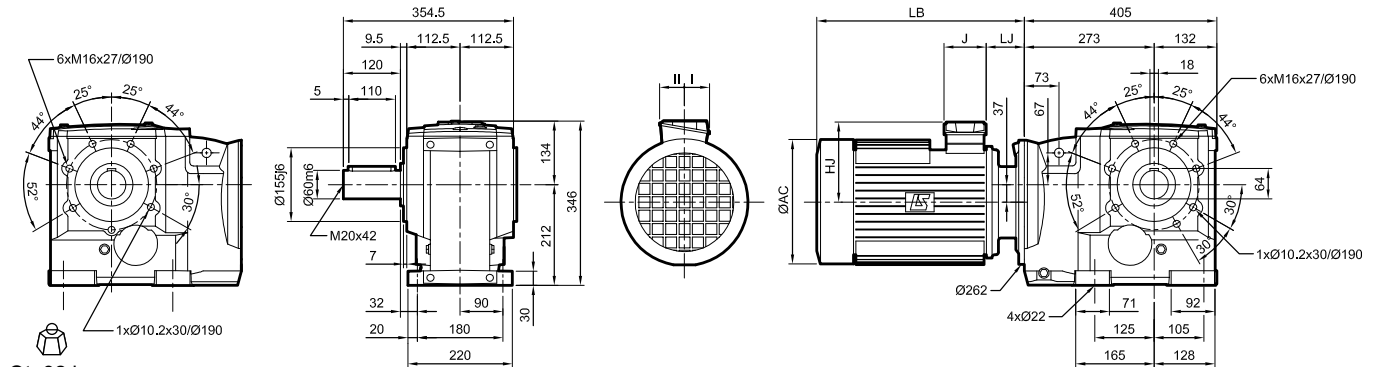
Orthobloc 3000

Dimensions

Dimensions of Orthobloc (Ot) gearboxes, MI integral mounting,
Ot 3533

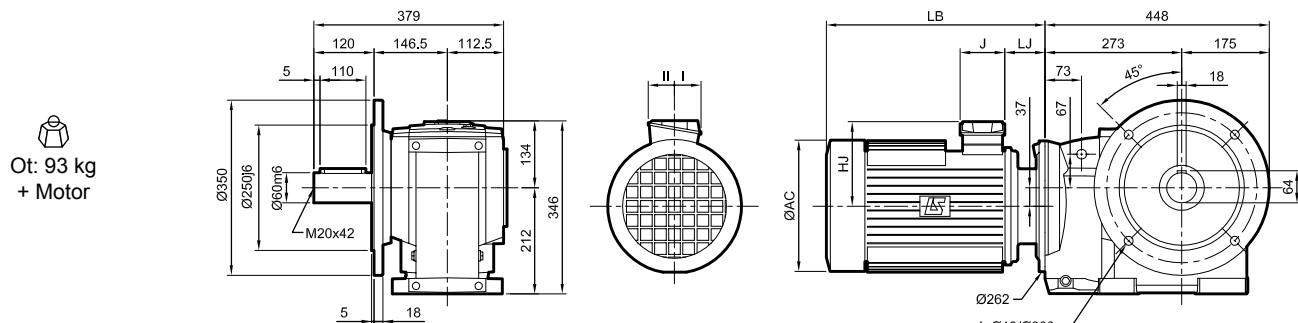
Dimensions in millimetres

- SBT LR faceplate form, L* output shaft on left



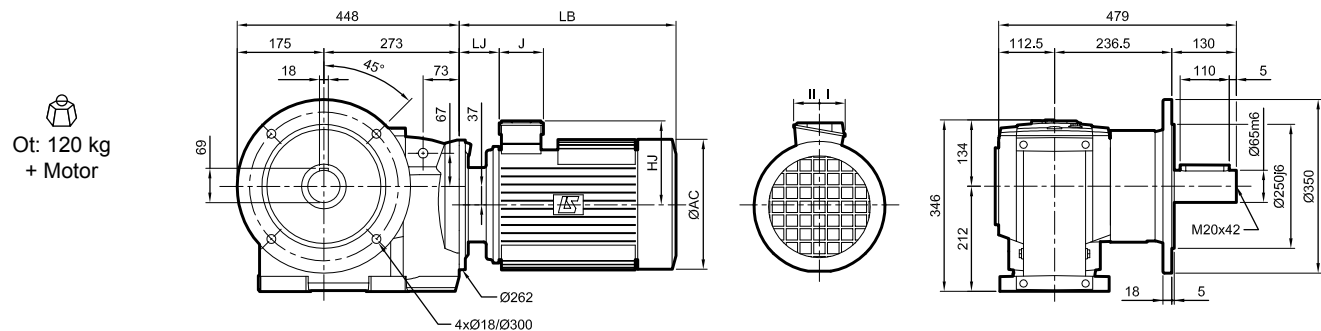
* R shaft on right option

- BD L* flange form, L* output shaft on left



* BDR R right option: identical flange and shaft

- BR R reinforced flange form, R* output shaft on right exclusively

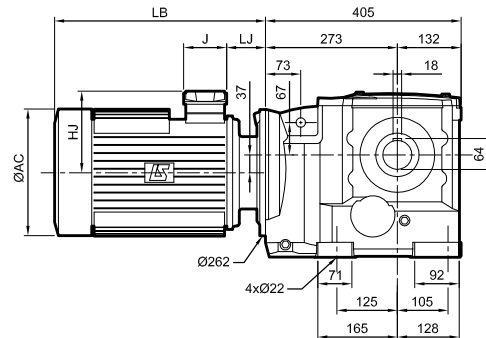
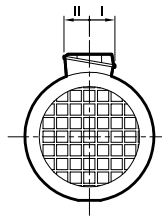
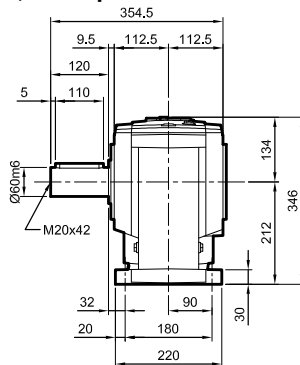


* Left option: **not available**

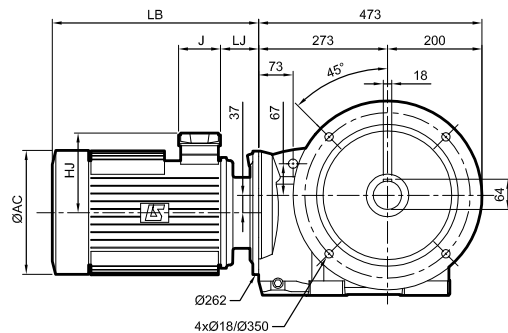
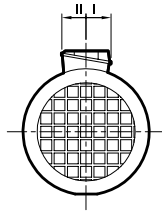
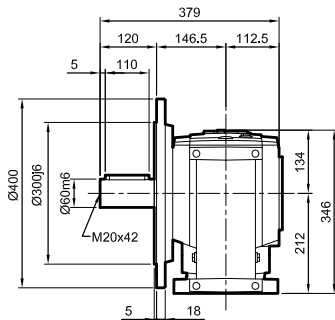
Dimensions

Dimensions in millimetres

Ot: 83 kg
+ Motor




Ot: 94 kg
+ Motor

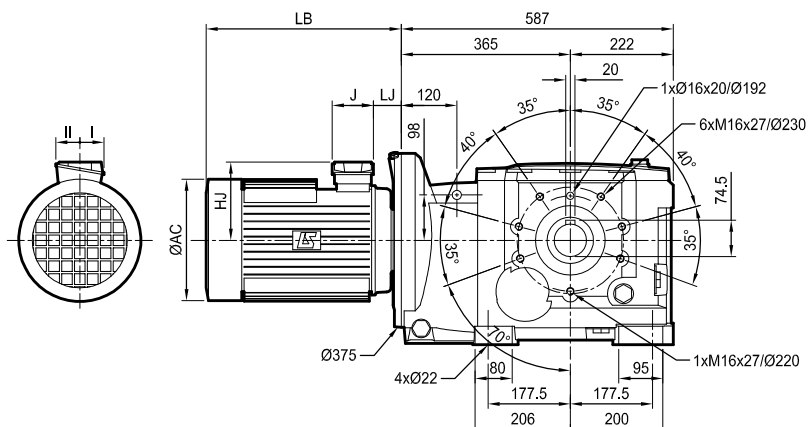
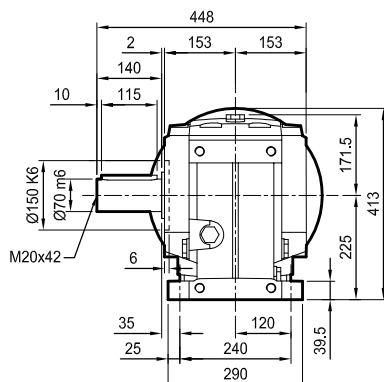


Type	4-pole motors																
	LS FCR								 kg	LS FCPL							
	AC	HJ	J	LB	LJ	I	II	AC		HJ	J	LB	LJ	I	II	 kg	
LS 80 L	172	146	160	300.5	46.5	55	55	18									
LS 90L	184	156	160	345.5	54.5	55	55	24.2	-	-	-	-	-	-	-	-	
LS 100L	200	161	160	393.5	55.5	55	55	30	-	-	-	-	-	-	-	-	
LS 112 MG	235	169	160	434	61	55	55	44.5	-	-	-	-	-	-	-	-	
LS 132 M	280	188	160	545	77	55	55	80	-	-	-	-	-	-	-	-	
LS 160L	316	231	160	620	96	55	55	110	345	235	134	681	56.8	92	63	140	
LS 180LR	-	-	-	-	-	-	-	-	345	235	134	696	57	92	63	155	

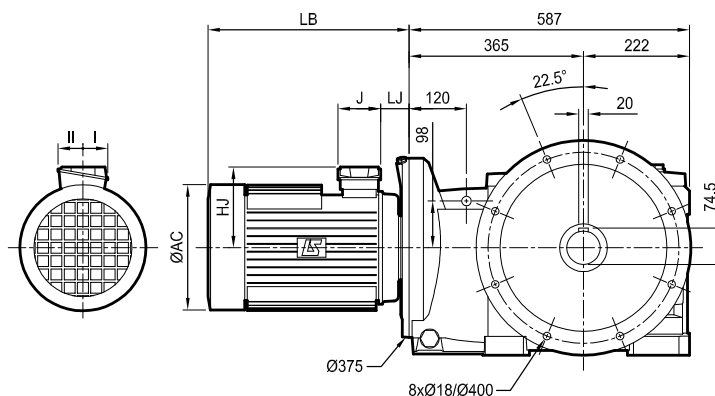
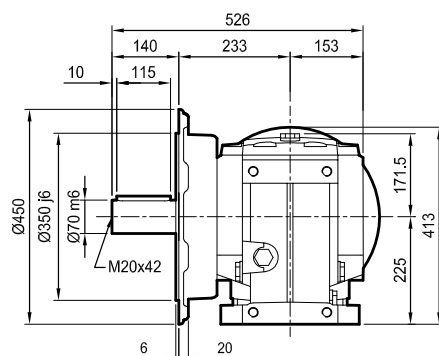
Dimensions

Dimensions in millimetres

Ot: 196 kg
+ Motor




Ot : 226 kg
+ Motor



* BDR R right option: identical flange and shaft

Electromechanical products

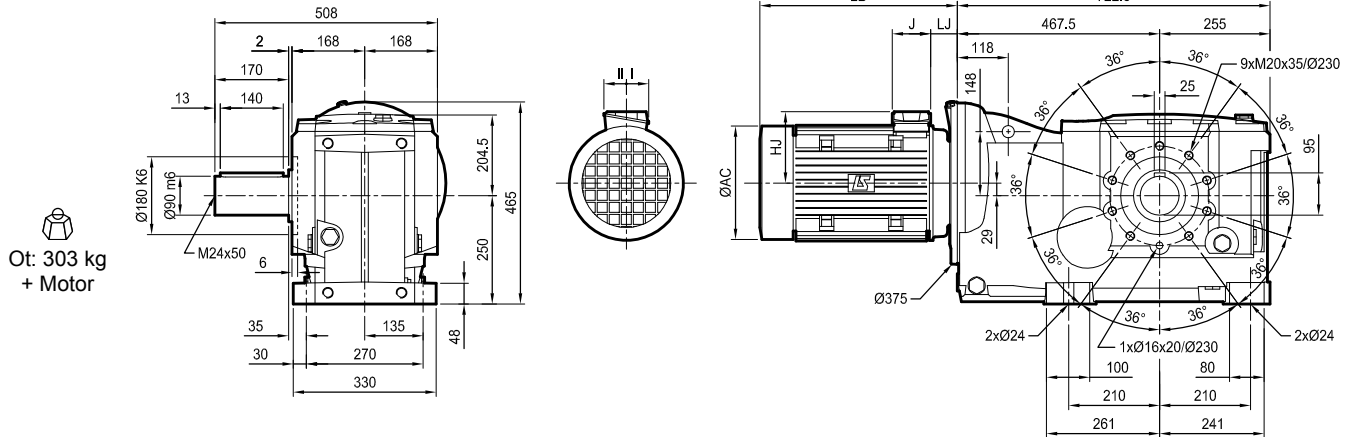
Orthobloc 3000

Dimensions

Dimensions of Orthobloc (Ot) gearboxes, MI integral mounting,
Ot 3733

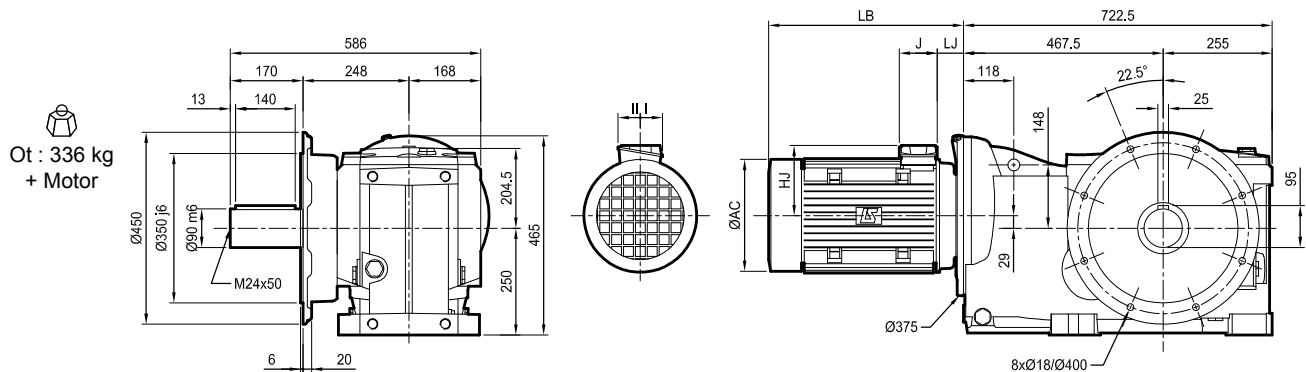
Dimensions in millimetres

- SBT LR faceplate form, L* output shaft on left



* SBT LR R right option: identical faceplate form and shaft

- BD L* flange form, L* output shaft on left



* BDR R right option: identical flange and shaft

Electromechanical products

Orthobloc 3000

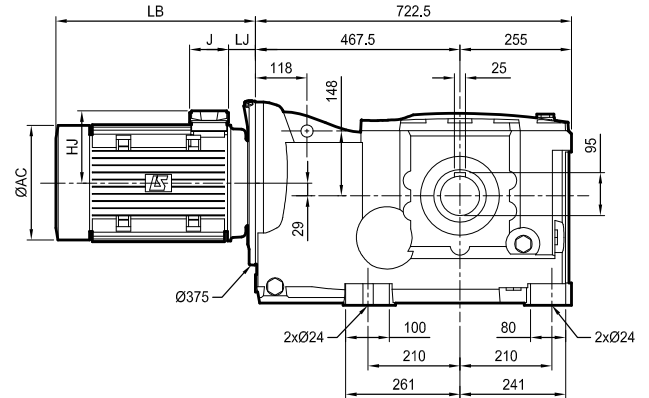
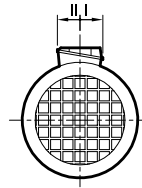
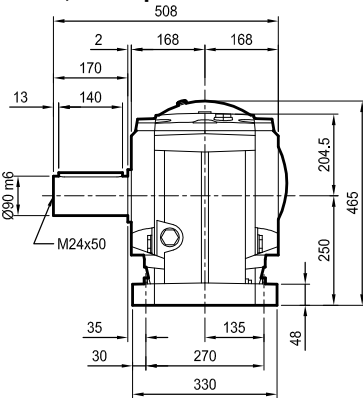
Dimensions

Dimensions of Orthobloc (Ot) gearboxes, MI integral mounting,
Ot 3733

Dimensions in millimetres

- S foot mounted form, L* output shaft on left

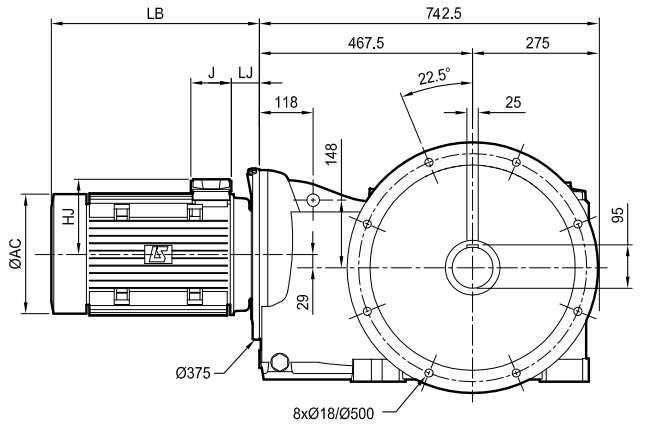
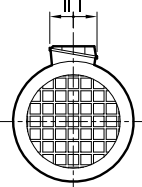
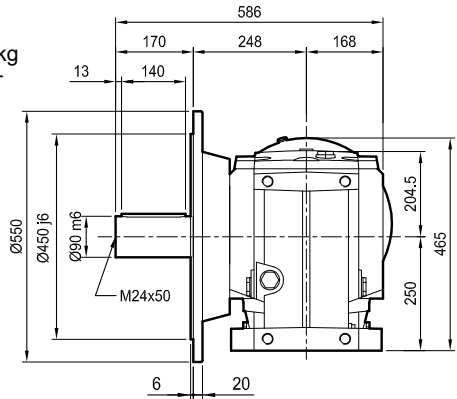
Ot: 306 kg
+ Motor



1. Through holes
* R shaft on right option

- BS L* flange form, L* output shaft on left

Ot: 342 kg
+ Motor



* BSR R right option: identical flange and shaft

Type	LSES							kg	4-pole motors LSES FCR							kg	LSES FCPL							kg
	AC	HJ	J	LB	LJ	I	II		AC	HJ	J	LB	LJ	I	II		AC	HJ	J	LB	LJ	I	II	
LSES 90L	190	135	86	272	53	43	43	15.2	184	156	160	331.5	48.5	55	55	24.2	-	-	-	-	-	-	-	-
LSES 100LR	200	140	86	336.5	54	43	43	25.7	200	161	160	394.5	52	55	55	30	-	-	-	-	-	-	-	-
LSES 112MU	235	149	86	353	55.5	43	43	35	235	169	160	421	51	55	55	44.5	-	-	-	-	-	-	-	-
LSES 132MU	265	190	126	446	51	63	63	68	280	188	160	527	66.5	55	55	80	-	-	-	-	-	-	-	-
LSES 160L	312	222	126	490	42.8	63	63	91	316	231	160	564	58	55	55	110	345	235	134	672	47.8	92	63	140
LSES 180LR	312	248	186	515	49.8	112	98	115	-	-	-	-	-	-	-	-	345	235	134	678	39	92	63	150
LSES 200LR	350	256	186	609	58.5	112	98	164	-	-	-	-	-	-	-	-	384	256	186	774	84.5	111	98	240
LSES 225MR	390	310	231	674	59.5	119	142	235	-	-	-	-	-	-	-	-	410	276	186	837	82	111	98	320

Type	4-pole motors LS FCR							kg	LS FCPL							kg
	AC	HJ	J	LB	LJ	I	II		AC	HJ	J	LB	LJ	I	II	
LS 90L	184	156	160	331.5	48.5	55	55	24.2	-	-	-	-	-	-	-	-
LS 100L	200	161	160	382	52	55	55	30	-	-	-	-	-	-	-	-
LS 112 MG	235	169	160	421	51	55	55	44.5	-	-	-	-	-	-	-	-
LS 132 M	280	188	160	527	66.5	55	55	80	-	-	-	-	-	-	-	-
LS 160L	316	231	160	564	58	55	55	110	345	235	134	672	47.8	92	63	140
LS 180LR	-	-	-	-	-	-	-	-	345	235	134	678	39	92	63	150
LS 200LT	-	-	-	-	-	-	-	-	384	256	186	774	84.5	111	98	240
LS 225MR	-	-	-	-	-	-	-	-	410	276	186	837	82	111	98	320

Electromechanical products

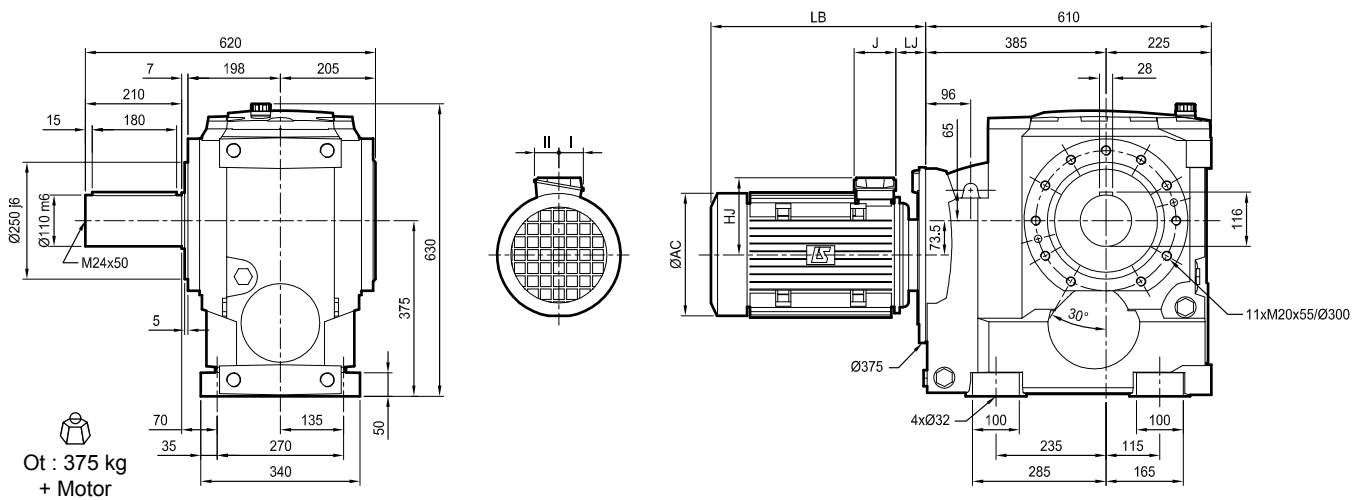
Orthobloc 3000

Dimensions

Dimensions of Orthobloc (Ot) gearboxes, MI integral mounting,
Ot 3833

Dimensions in millimetres

- SBT LR faceplate form, L* output shaft on left



* SBT LR R right option: identical faceplate form and shaft

Electromechanical products

Orthobloc 3000

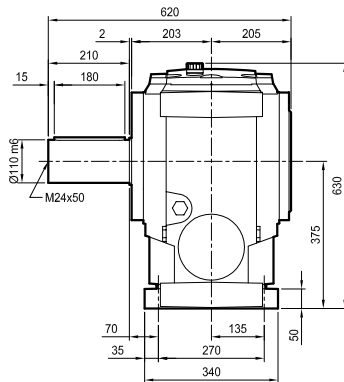
Dimensions

Dimensions of Orthobloc (Ot) gearboxes, MI integral mounting,
Ot 3833

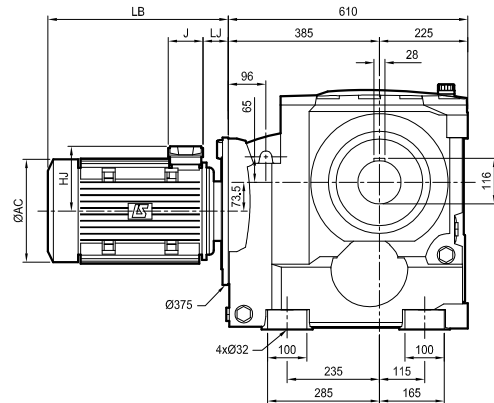
Dimensions in millimetres

- S foot mounted form, L* output shaft on left


Ot : 378 kg
+ Motor

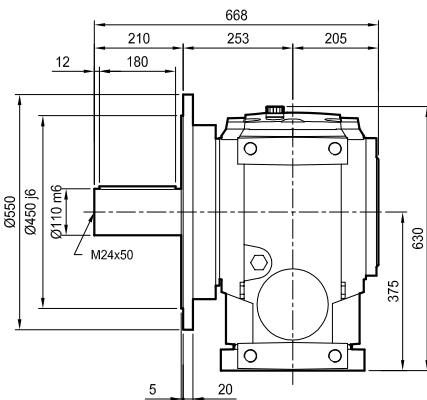


* R shaft on right option

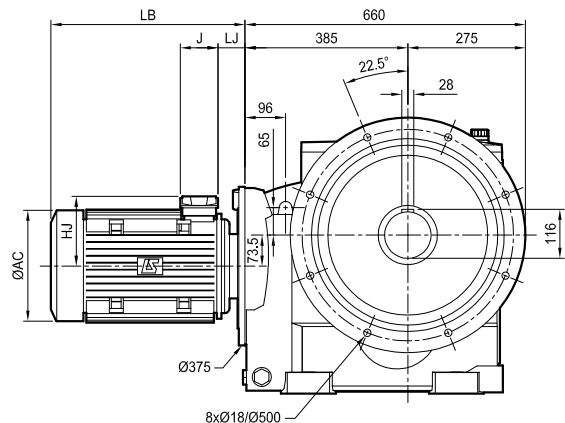


- BD L* flange form, L* output shaft on left


Ot : 402 kg
+ Motor



* BSR R right option: identical flange and shaft



Type	LSES								4-pole motors								LSES FCPL							
	AC	HJ	J	LB	LJ	I	II		AC	HJ	J	LB	LJ	I	II		AC	HJ	J	LB	LJ	I	II	
LS 132 M	265	190	126	446	51	63	63	68	280	188	160	527	66.5	55	55	80	-	-	-	-	-	-	-	-
LS 160 L	312	222	126	477	29.8	63	63	91	316	231	160	564	58	55	55	110	312	235	134	663	38.8	92	63	140
LS 180 LR	312	248	186	502	36.8	112	98	115	-	-	-	-	-	-	-	-	312	249	134	678	49.8	112	98	150
LS 200 LR	350	256	186	596	45.5	112	98	164	-	-	-	-	-	-	-	-	350	256	186	814	58.5	112	98	240
LS 225 MR	390	310	231	674	59.5	119	142	235	-	-	-	-	-	-	-	-	390	276	186	878	82	112	98	320

Type	LS FCR								LS FCPL							
	AC	HJ	J	LB	LJ	I	II		AC	HJ	J	LB	LJ	I	II	
LS 132 M	280	188	160	527	66.5	55	55	80	-	-	-	-	-	-	-	-
LS 160 L	316	231	160	564	58	55	55	110	312	235	134	663	38.8	92	63	140
LS 180 LR	-	-	-	-	-	-	-	-	312	249	134	678	49.8	112	98	150
LS 200 LT	-	-	-	-	-	-	-	-	350	256	186	814	58.5	112	98	240
LS 225 MR	-	-	-	-	-	-	-	-	390	276	186	878	82	112	98	320

Dimensions

Dimensions in millimetres

Technical drawing of the HJ 100-250 motor showing dimensions and mounting details. The drawing includes the following dimensions and features:

- Overall Dimensions:**
 - LB (Total Length): 245
 - J (Motor Body Length): 165
 - LJ (Flange to End Flange): 80
 - 69 (Distance from Motor Body to End Flange)
 - 66 (End Flange Diameter)
 - 46.5 (End Flange Thickness)
 - 8 (End Flange Flange Thickness)
 - 33.3 (End Flange Flange Width)
 - 39 (End Flange Flange Width)
 - 50 (End Flange Flange Width)
 - 61 (End Flange Flange Width)
 - 69 (End Flange Flange Width)
- Mounting Details:**
 - 4xM8x12/Ø95 (Mounting holes)
 - 1xØ6x12/Ø95 (Mounting hole)
 - 4xØ9 (Mounting holes)
 - 20° (Mounting angle)
 - Ø154 (End Flange Diameter)
- Other Features:**
 - HJ (Motor Body Label)
 - ØAC (Motor Body Diameter)

[illegible]

Technical drawing of the 1000 Series Motor showing front and side views with dimensions.

Front View Dimensions:

- Total length: 102
- Distance from mounting flange to center: 65
- Motor body diameter: $\varnothing 30.5$
- Flange diameter: $\varnothing 45$
- Flange thickness: 35
- Shaft diameter: $\varnothing 30$ H7
- Shaft length: 35

Side View Dimensions:

- Top flange diameter: 60
- Top flange thickness: 47
- Motor body diameter: $\varnothing 110$
- Shaft diameter: $\varnothing 117$
- Mounting flange diameter: 2xM6x12



Electromechanical products

Orthobloc 3000

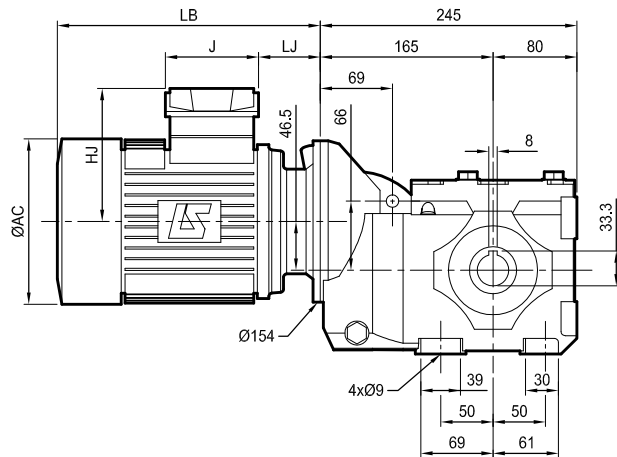
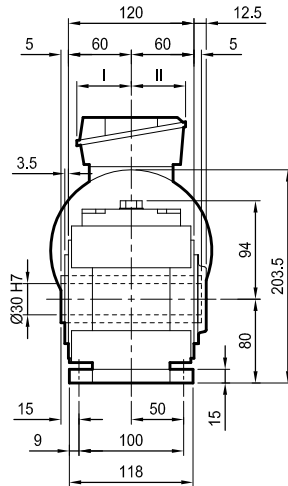
Dimensions

Dimensions of Orthobloc (Ot) gearboxes, MI integral mounting,
Ot 3132

Dimensions in millimetres

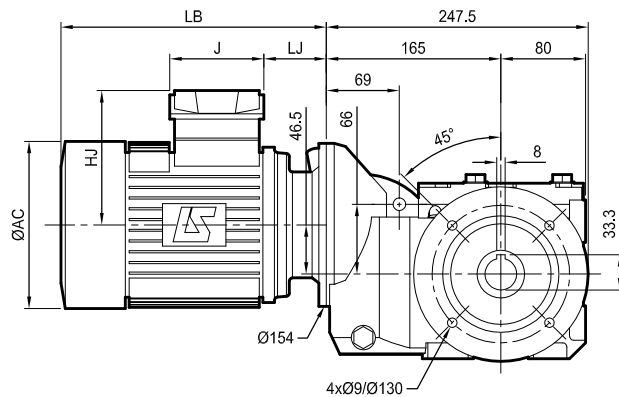
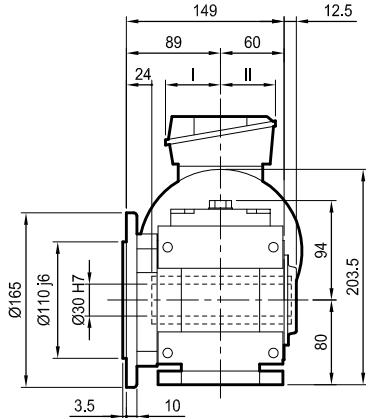
- S foot mounted form, H cylindrical hollow shaft


Ot: 14.5 kg
+ Motor



- BS L* flange form, H cylindrical hollow shaft


Ot: 14.8 kg
+ Motor



* BSR H right option: identical flange and shaft

4-pole motors

Type	LSES								LSES FCR							
	AC	HJ	J	LB	LJ	I	II	kg	AC	HJ	J	LB	LJ	I	II	kg
LSSES 80	170	135	86	288.5	67.5	43	43	11.7	172	146	160	349.5	46	55	55	18
LSSES 90	190	135	86	290	71	43	43	15.2	184	156	160	349.5	58.5	55	55	24.2
LSSES 100LR	200	140	86	354.5	72	43	43	25.7	200	161	160	410	59.5	55	55	30

4-pole motors

Type	LS								LS FCR							
	AC	HJ	J	LB	LJ	I	II	kg	AC	HJ	J	LB	LJ	I	II	kg
LS 71 L	140	109	86	217	49	43	43	8.3	140	135	160	268	34	55	55	11.3
LS 80 L	-	-	-	-	-	-	-	-	172	146	160	300	46	55	55	18
LS 90L	-	-	-	-	-	-	-	-	184	156	160	349.5	58.5	55	55	24.2
LS 100L	-	-	-	-	-	-	-	-	200	161	160	397.5	59.5	55	55	30

Dimensions

Dimensions in millimetres

[illegible]

Type	4-pole motors															
	LS								LS FCR							
	AC	HJ	J	LB	LJ	I	II	 kg	AC	HJ	J	LB	LJ	I	II	 kg
LS 71 L	140	109	86	217	49	43	43	8.3	140	135	160	268	34	55	55	11.3
LS 80 L	-	-	-	-	-	-	-	-	172	146	160	300	46	55	55	18
LS 90L	-	-	-	-	-	-	-	-	184	156	160	349.5	58.5	55	55	24.2
LS 100L	-	-	-	-	-	-	-	-	200	161	160	397.5	59.5	55	55	30
LS 112MG	-	-	-	-	-	-	-	-	235	169	160	434	61	55	55	44.5
LS 132S	-	-	-	-	-	-	-	-	235	169	160	457	61	55	55	48

Electromechanical products

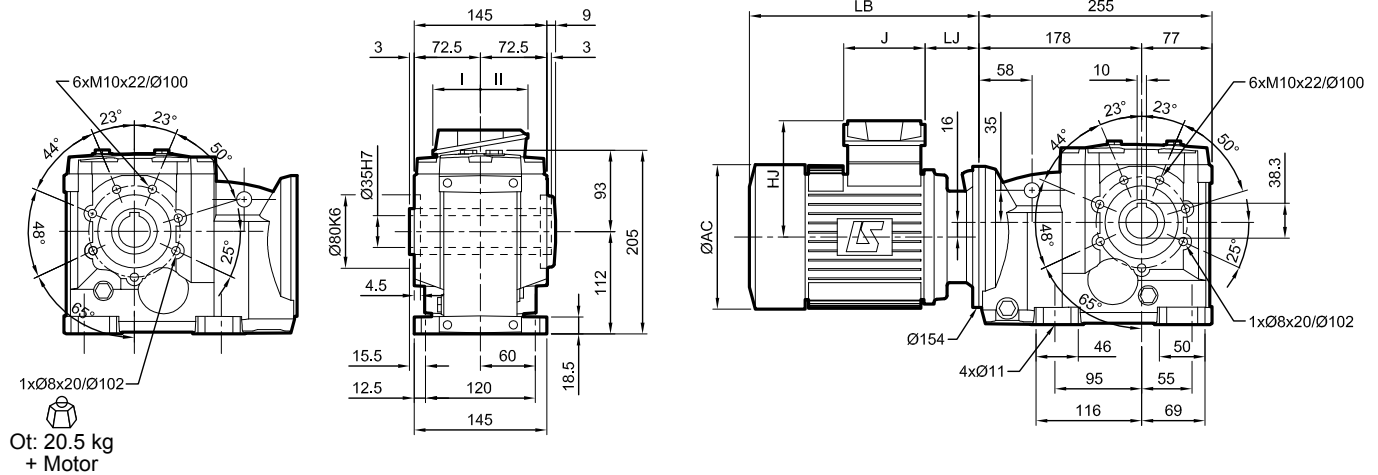
Orthobloc 3000

Dimensions

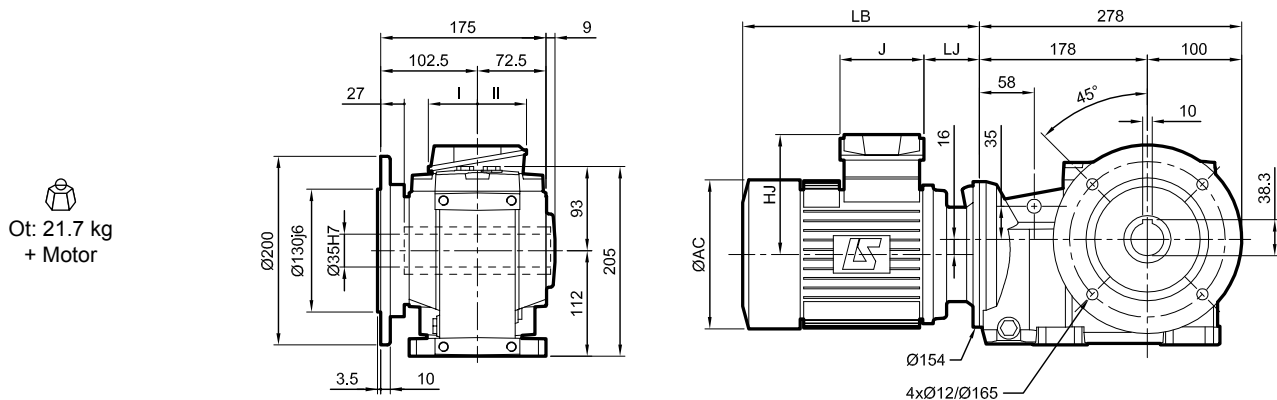
Dimensions of Orthobloc (Ot) gearboxes, MI integral mounting,
Ot 3233

Dimensions in millimetres

- SBT LR faceplate form, H cylindrical hollow shaft

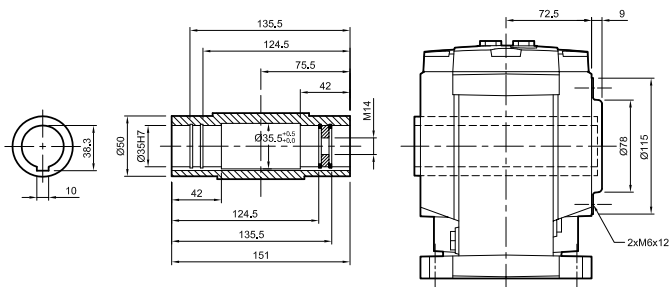


- BD L* flange form, H cylindrical hollow shaft

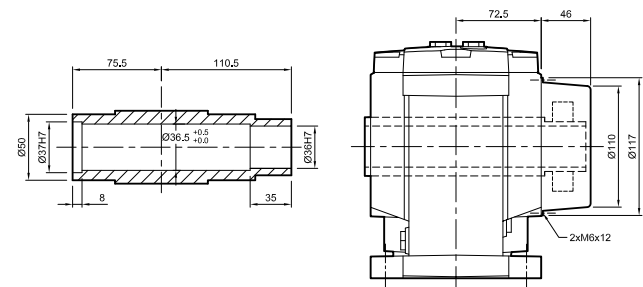


* BDR H right option: identical flange and shaft

- H hollow shaft details



- Option: shrink disc on right SDR*



* left SDL

Keying on driven shaft: according to NF E22-175

Electromechanical products

Orthobloc 3000

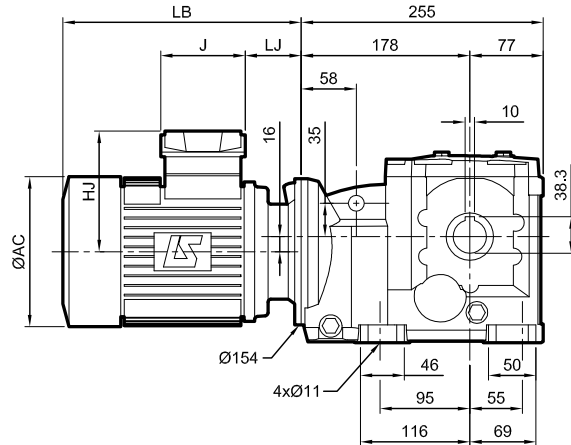
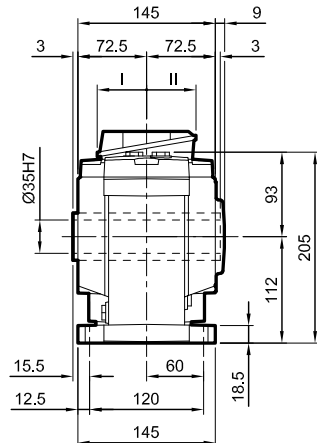
Dimensions

Dimensions of Orthobloc (Ot) gearboxes, MI integral mounting,
Ot 3233

Dimensions in millimetres

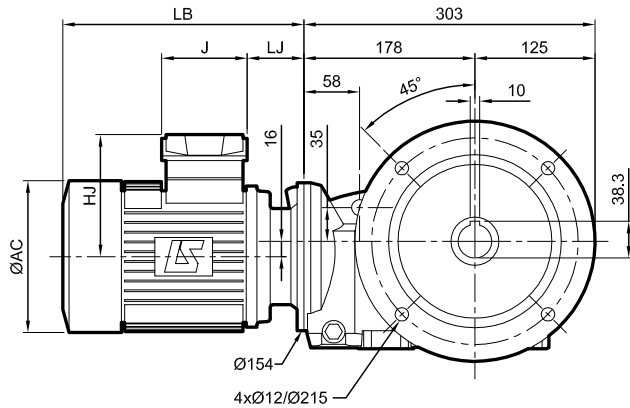
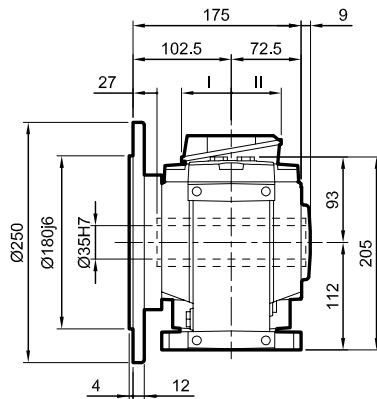
- S foot mounted form, H cylindrical hollow shaft

Ot: 21 kg
+ Motor



- BS L* flange form, H cylindrical hollow shaft

Ot: 22 kg
+ Motor



* BSR H right option: identical flange and shaft

4-pole motors																
Type	LSES								LSES FCR							
	AC	HJ	J	LB	LJ	I	II		AC	HJ	J	LB	LJ	I	II	
LSES 80	170	135	86	288.5	67.5	43	43	11.7	172	146	160	349.5	46	55	55	18
LSES 90	190	135	86	290	71	43	43	15.2	184	156	160	349.5	58.5	55	55	24.2
LSES 100LR	200	140	86	354.5	72	43	43	25.7	200	161	160	410	59.5	55	55	30

4-pole motors																
Type	LS							 kg	LS FCR							 kg
	AC	HJ	J	LB	LJ	I	II		AC	HJ	J	LB	LJ	I	II	
LS 71 L	140	109	86	217	49	43	43	8.3	140	135	160	268	34	55	55	11.3
LS 80 L	-	-	-	-	-	-	-	-	172	146	160	300	46	55	55	18
LS 90L	-	-	-	-	-	-	-	-	184	156	160	349.5	58.5	55	55	24.2
LS 100L	-	-	-	-	-	-	-	-	200	161	160	397.5	59.5	55	55	30

Electromechanical products

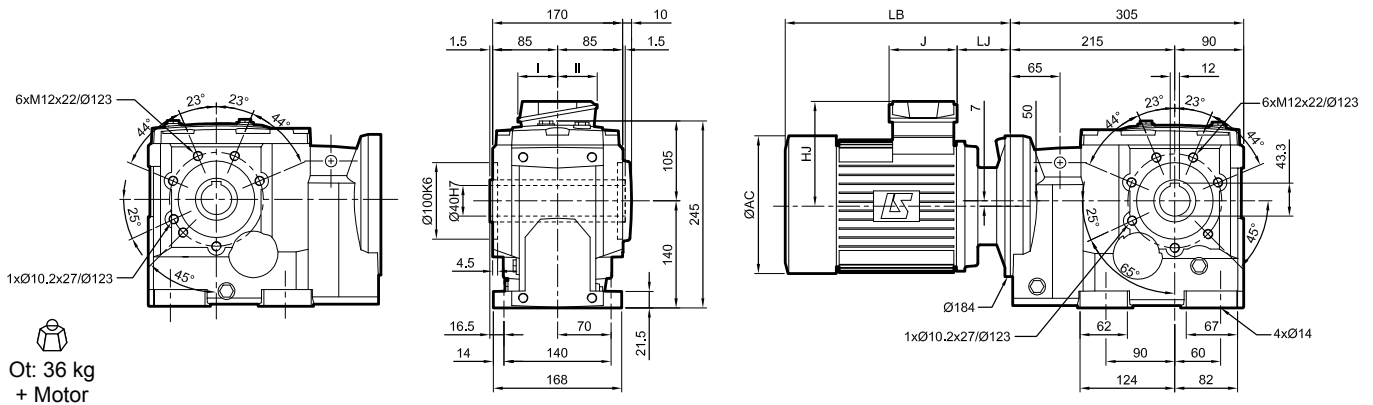
Orthobloc 3000

Dimensions

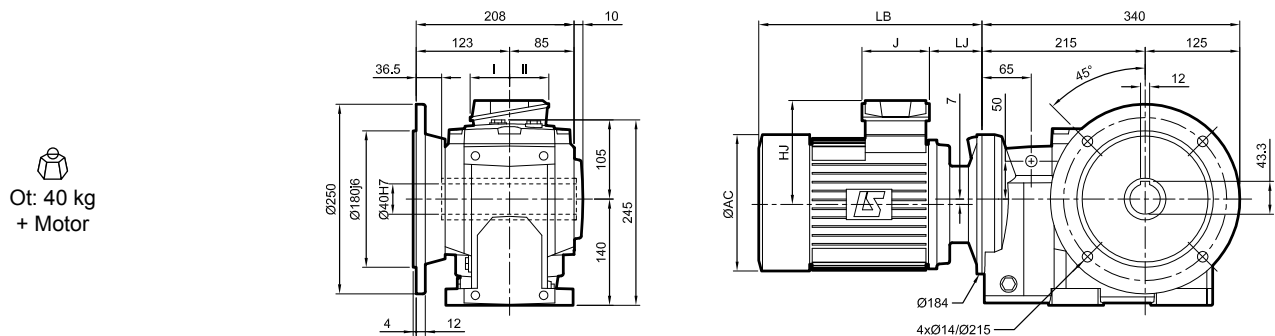
Dimensions of Orthobloc (Ot) gearboxes, MI integral mounting,
Ot 3333

Dimensions in millimetres

- SBT LR faceplate form, H cylindrical hollow shaft

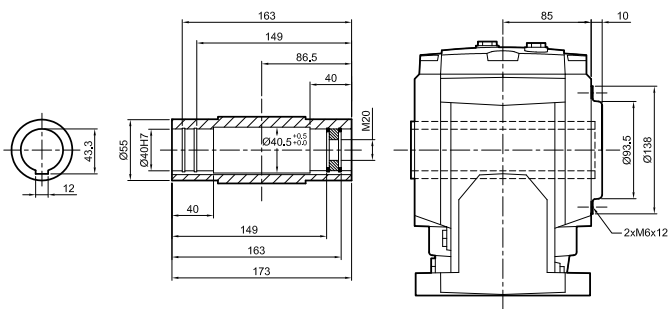


- BD L* flange form, H cylindrical hollow shaft

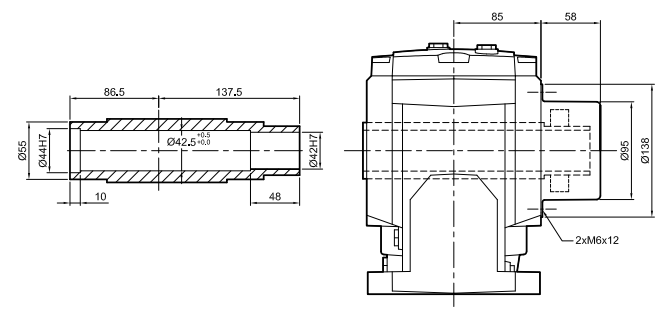


* BDR H right option: identical flange and shaft

- H hollow shaft details



- Option: shrink disc on right SDR*



* left SDL

Keying on driven shaft: according to NF E22-175

Electromechanical products

Orthobloc 3000

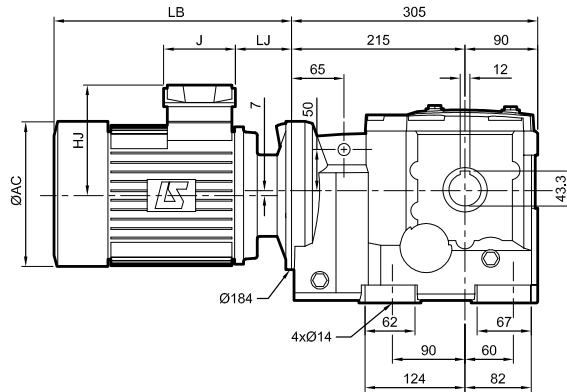
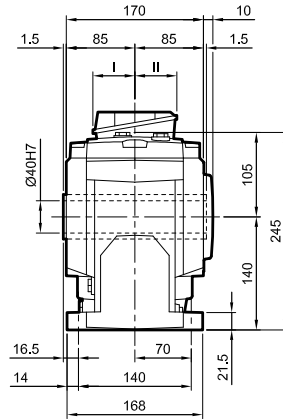
Dimensions

Dimensions of Orthobloc (Ot) gearboxes, MI integral mounting,
Ot 3333

Dimensions in millimetres

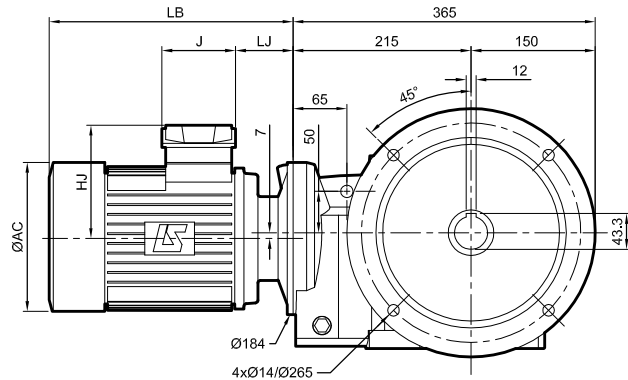
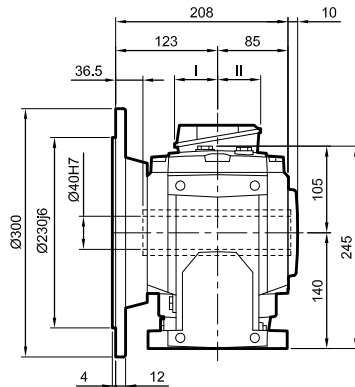
- S foot mounted form, H cylindrical hollow shaft

Ot: 37 kg
+ Motor



- BS L* flange form, H cylindrical hollow shaft

Ot: 40 kg
+ Motor



* BSR H right option: identical flange and shaft

Type	4-pole motors																
	LSES								LSES FCR								
	AC	HJ	J	LB	LJ	I	II		AC	HJ	J	LB	LJ	I	II		
LSES 80	170	135	86	288	67.5	43	43	11.7	172	146	160	349.5	46	55	55	18	
LSES 90	190	135	86	290	71	43	43	15.2	184	156	160	349.5	58.5	55	55	24.2	
LSES 100LR	200	140	86	354.5	72	43	43	25.7	200	161	160	410	59.5	55	55	30	
LSES 112MU	235	149	86	371	73.5	43	43	35	235	169	160	434	61	55	55	44.5	
LSES 132SU	260	172	126	397	52.5	63	63	42	235	169	160	477	61	55	55	48	

Type	4-pole motors															
	LS								LS FCR							
	AC	HJ	J	LB	LJ	I	II		AC	HJ	J	LB	LJ	I	II	
LS 71 L	140	109	86	217	49	43	43	8.3	140	135	160	268	34	55	55	11.3
LS 80 L	-	-	-	-	-	-	-	-	172	146	160	300	46	55	55	18
LS 90L	-	-	-	-	-	-	-	-	184	156	160	349.5	58.5	55	55	24.2
LS 100L	-	-	-	-	-	-	-	-	200	161	160	397.5	59.5	55	55	30
LS 112MG	-	-	-	-	-	-	-	-	235	169	160	434	61	55	55	44.5
LS 132S	-	-	-	-	-	-	-	-	235	169	160	457	61	55	55	48

Electromechanical products

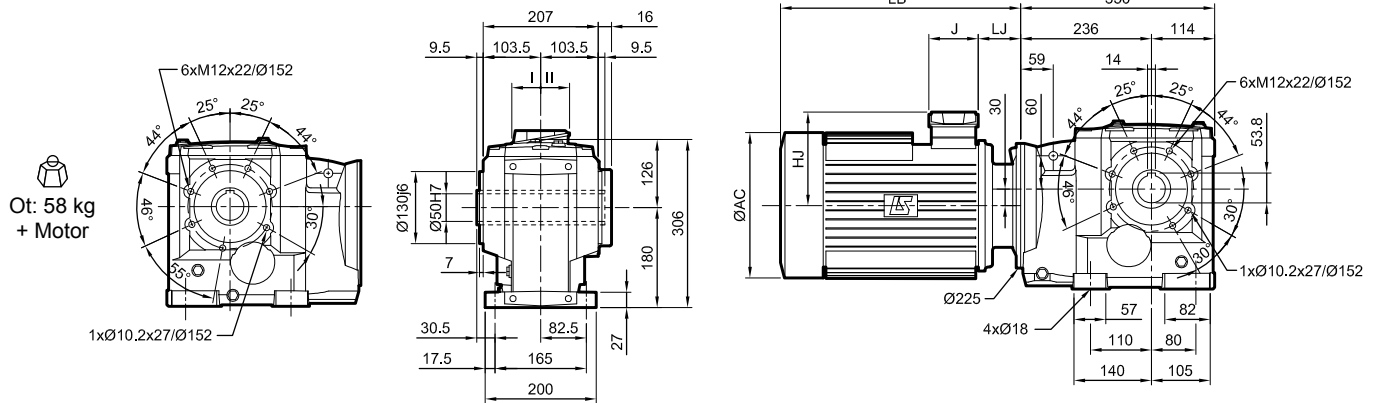
Orthobloc 3000

Dimensions

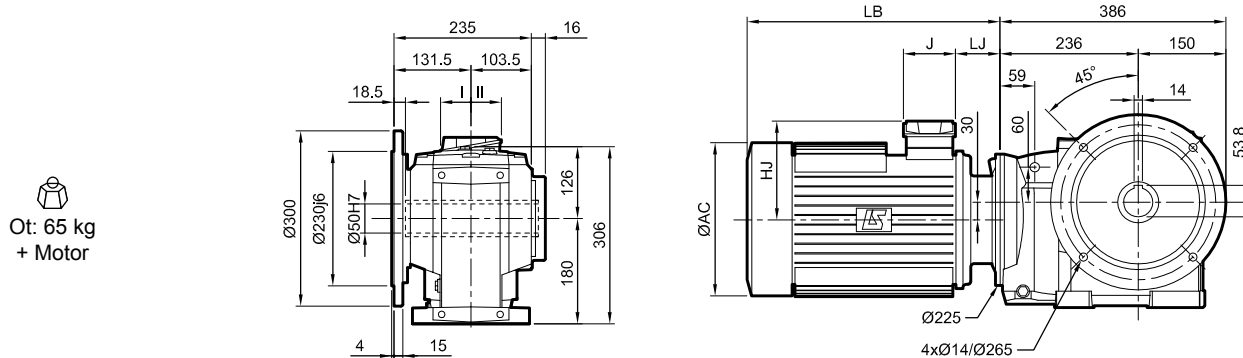
Dimensions of Orthobloc (Ot) gearboxes, MI integral mounting,
Ot 3433

Dimensions in millimetres

- SBT LR faceplate form, H cylindrical hollow shaft

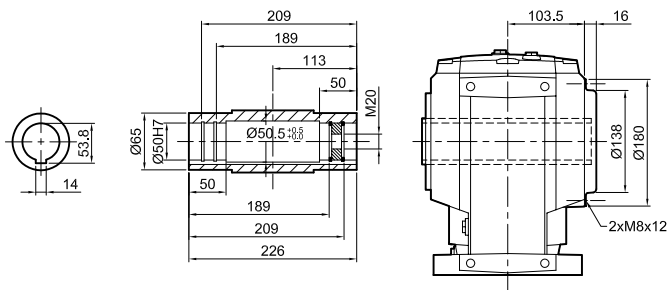


- BD L* flange form, H cylindrical hollow shaft

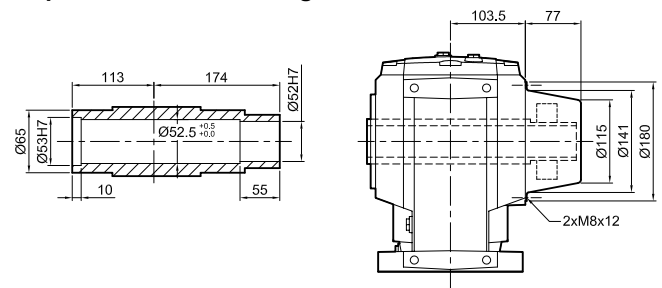


* BDR H right option: identical flange and shaft

- H hollow shaft details



- Option: shrink disc on right SDR*



* left SDL

Keying on driven shaft: according to NF E22-175

Electromechanical products

Orthobloc 3000

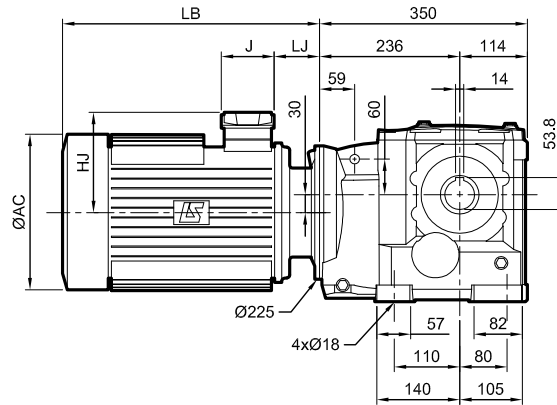
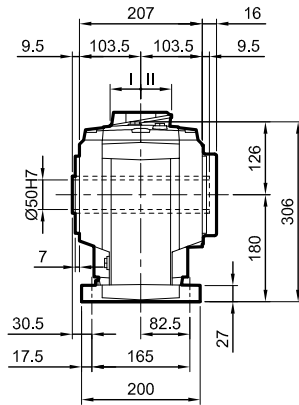
Dimensions

Dimensions of Orthobloc (Ot) gearboxes, MI integral mounting,
Ot 3433

Dimensions in millimetres

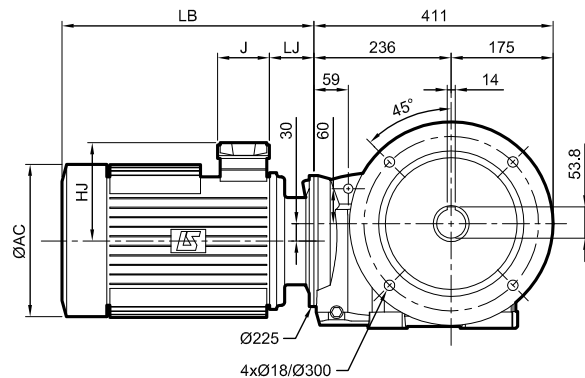
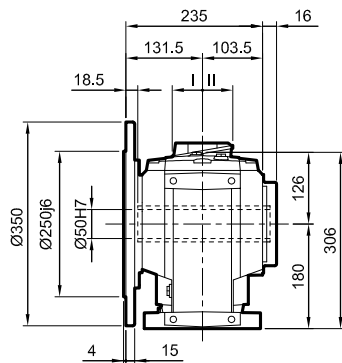
- S foot mounted form, H cylindrical hollow shaft


Ot: 58.5 kg
+ Motor



- BS L* flange form, H cylindrical hollow shaft


Ot: 66 kg
+ Motor



* BSR H right option: identical flange and shaft

Type	4-pole motors															
	LSES							LSES FCR								
	AC	HJ	J	LB	LJ	I	II		AC	HJ	J	LB	LJ	I	II	
LSES 80	170	135	86	284	63.5	43	43	11.7	172	146	160	345.5	42	55	55	18
LSES 90	190	135	86	286	67	43	43	15.2	184	156	160	345.5	54.5	55	55	24.2
LSES 100LR	200	140	86	350.5	68	43	43	25.7	200	161	160	406	55.5	55	55	30
LSES 112MU	235	149	86	367	69.5	43	43	35	235	169	160	430	58	55	55	44.5
LSES 132MU	265	190	126	460	65	63	63	68	280	188	160	541	73	55	55	80

Type	4-pole motors															
	LS								LS FCR							
	AC	HJ	J	LB	LJ	I	II		AC	HJ	J	LB	LJ	I	II	
LS 71 L	140	109	86	213	45	43	43	8.3	140	130	160	254.5	21.5	55	55	11.3
LS 80 L	-	-	-	-	-	-	-	-	172	146	160	296	42	55	55	18
LS 90L	-	-	-	-	-	-	-	-	184	156	160	345.5	54.5	55	55	24.2
LS 100L	-	-	-	-	-	-	-	-	200	161	160	393.5	55.5	55	55	30
LS 112MG	-	-	-	-	-	-	-	-	235	169	160	430	58	55	55	44.5
LS 132M	-	-	-	-	-	-	-	-	280	188	160	541	73	55	55	80

Electromechanical products

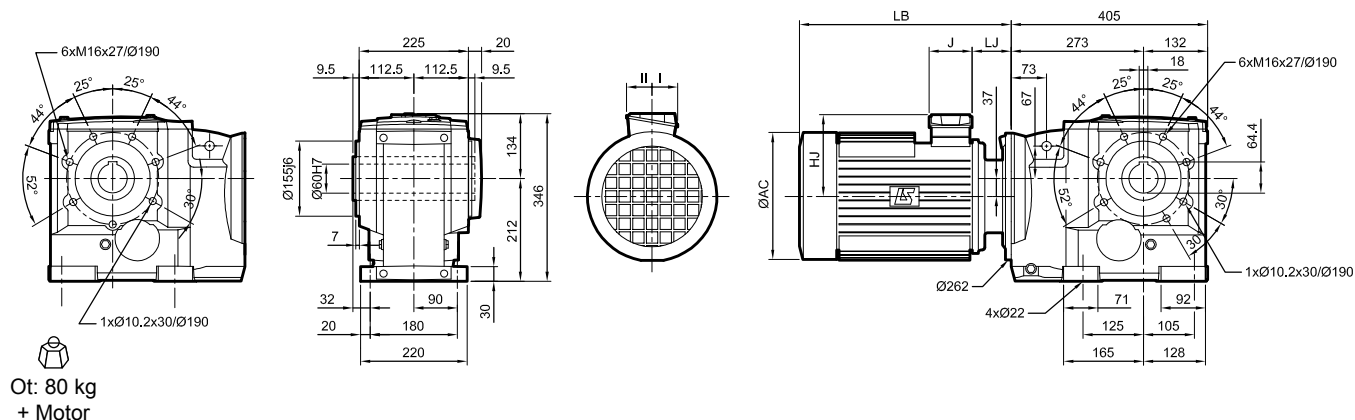
Orthobloc 3000

Dimensions

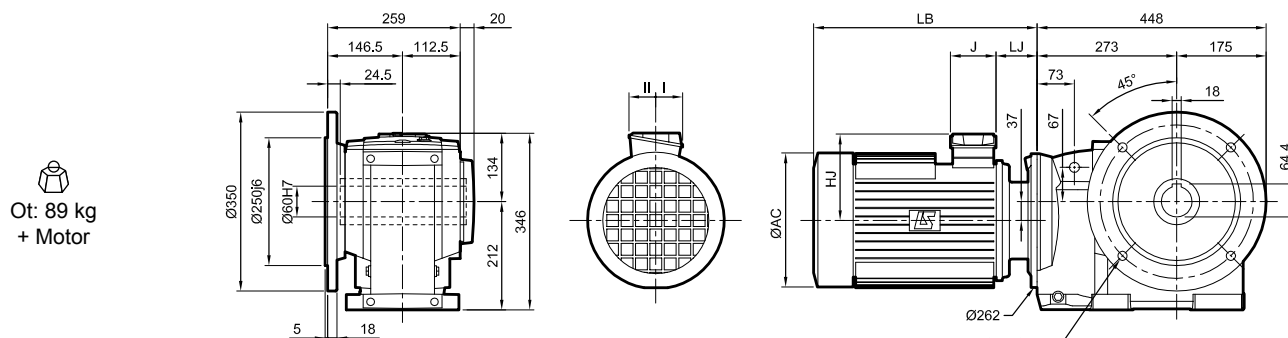
Dimensions of Orthobloc (Ot) gearboxes, MI integral mounting,
Ot 3533

Dimensions in millimetres

- SBT LR faceplate form, H cylindrical hollow shaft

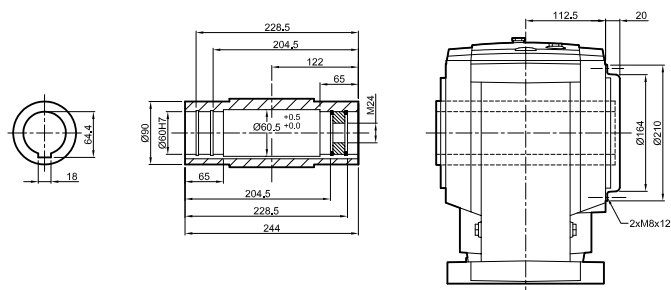


- BD L* flange form, H cylindrical hollow shaft

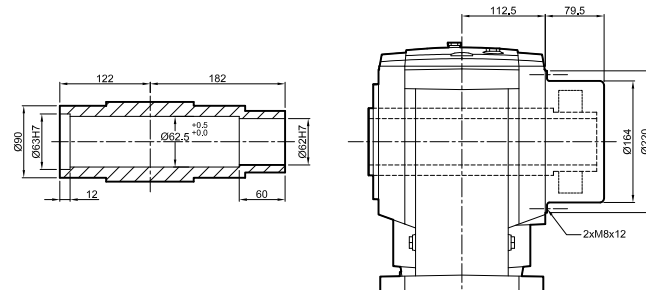


* BDR H right option: identical flange and shaft

- H hollow shaft details



- Option: shrink disc on right SDR*



* left SDL

Keying on driven shaft: according to NF E22-175

Dimensions

Dimensions in millimetres

[illegible][illegible]

Type	4-pole motors																	
	LS FCR								 kg	LS FCPL								 kg
	AC	HJ	J	LB	LJ	I	II	AC		HJ	J	LB	LJ	I	II			
LS 80 L	172	146	160	300.5	46.5	55	55	18										
LS 90L	184	156	160	345.5	54.5	55	55	24.2	-	-	-	-	-	-	-	-		
LS 100L	200	161	160	393.5	55.5	55	55	30	-	-	-	-	-	-	-	-		
LS 112 MG	235	169	160	434	61	55	55	44.5	-	-	-	-	-	-	-	-		
LS 132 M	280	188	160	545	77	55	55	80	-	-	-	-	-	-	-	-		
LS 160L	316	231	160	620	96	55	55	110	345	235	134	681	56.8	92	63	140		
LS 180LR	-	-	-	-	-	-	-	-	345	235	134	696	57	92	63	155		

Electromechanical products

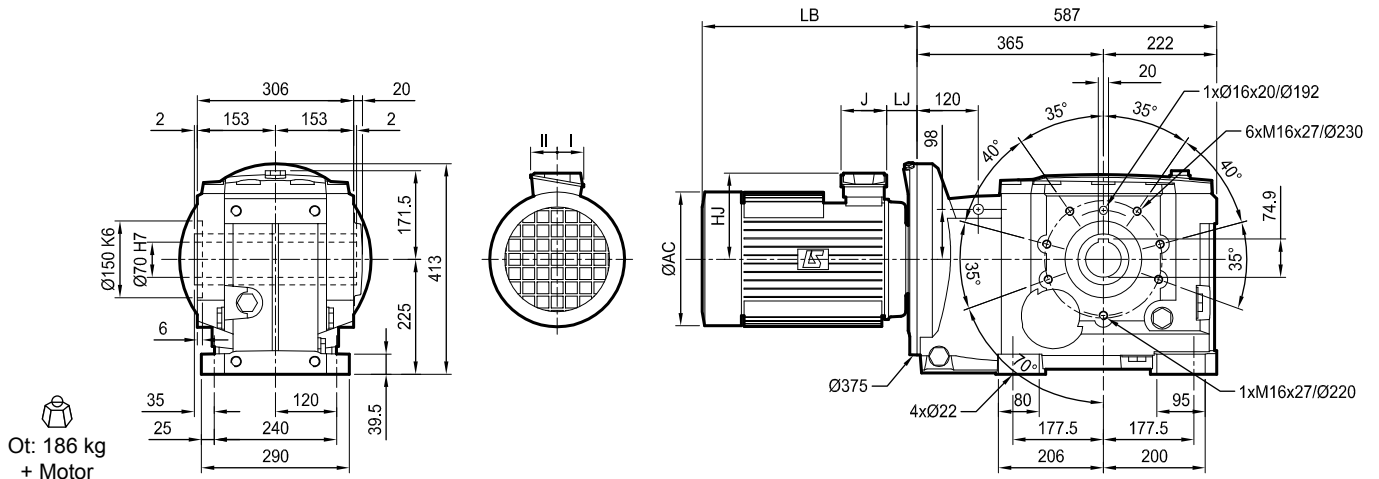
Orthobloc 3000

Dimensions

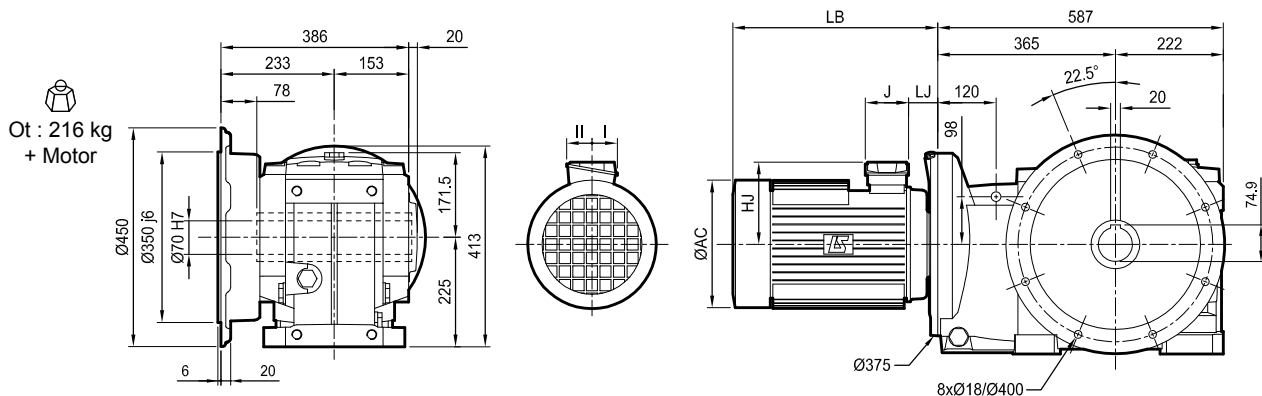
Dimensions of Orthobloc (Ot) gearboxes, MI integral mounting,
Ot 3633

Dimensions in millimetres

- SBT LR faceplate form, H cylindrical hollow shaft

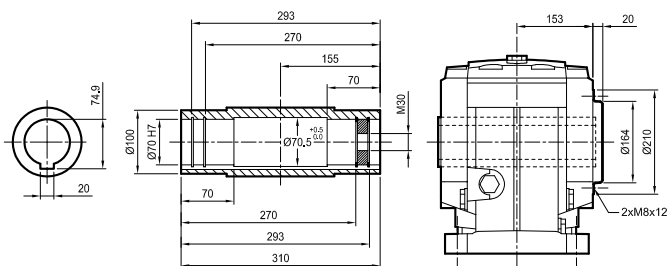


- BD L* flange form, H cylindrical hollow shaft

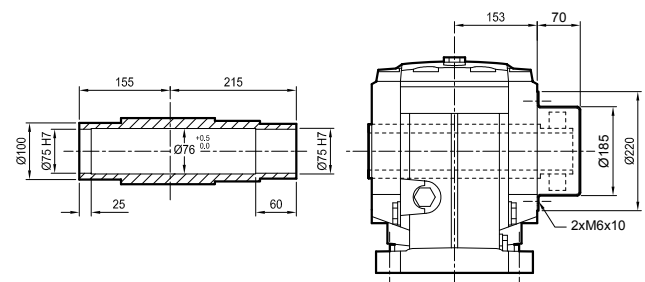


* BDR H right option: identical flange and shaft

- H hollow shaft details



- Option: shrink disc on right SDR*



* left SDL

Electromechanical products

Orthobloc 3000

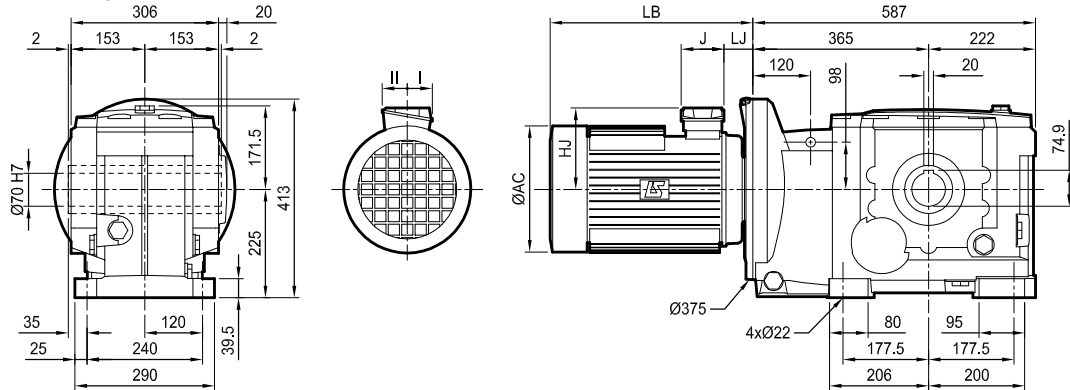
Dimensions

Dimensions of Orthobloc (Ot) gearboxes, MI integral mounting,
Ot 3633

Dimensions in millimetres

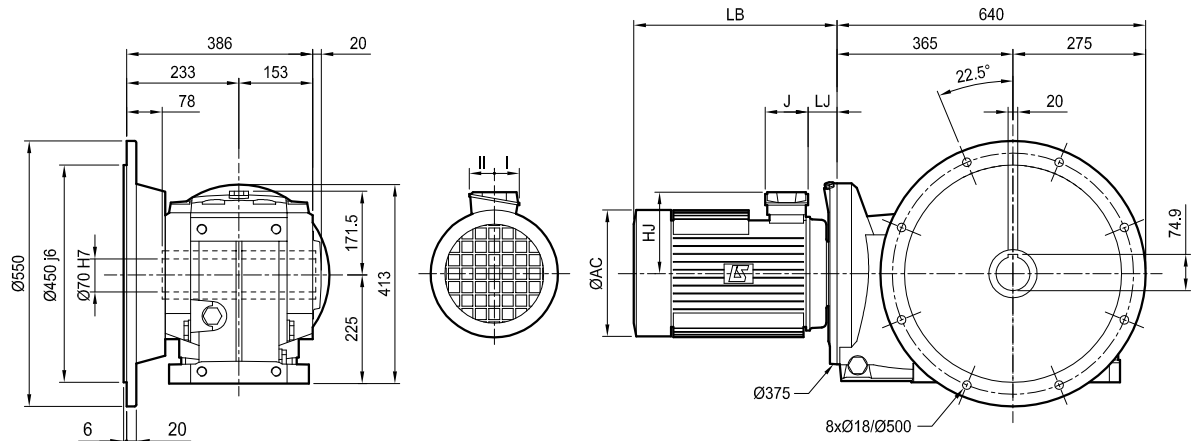
- S foot mounted form, H cylindrical hollow shaft

Ot: 188 kg
+ Motor



- BS L* flange form, H cylindrical hollow shaft

Ot: 222 kg
+ Motor



* BSR H right option: identical flange and shaft

Type	4-pole motors																							
	LSES								LSES FCR								LSES FCPL							
	AC	HJ	J	LB	LJ	I	II		AC	HJ	J	LB	LJ	I	II		AC	HJ	J	LB	LJ	I	II	
LSES 90L	190	135	86	272	53	43	43	15.2	184	156	160	331.5	48.5	55	55	24.2	-	-	-	-	-	-	-	-
LSES 100LR	200	140	86	336.5	54	43	43	25.7	200	161	160	394.5	52	55	55	30	-	-	-	-	-	-	-	-
LSES 112MU	235	149	86	353	55.5	43	43	35	235	169	160	421	51	55	55	44.5	-	-	-	-	-	-	-	-
LSES 132MU	265	190	126	446	51	63	63	68	280	188	160	527	66.5	55	55	80	-	-	-	-	-	-	-	-
LSES 160L	312	222	126	490	42.8	63	63	91	316	231	160	564	58	55	55	110	345	235	134	672	47.8	92	63	140
LSES 180LR	312	248	186	515	49.8	112	98	115	-	-	-	-	-	-	-	-	345	235	134	678	39	92	63	150
LSES 200LR	350	256	186	609	58.5	112	98	164	-	-	-	-	-	-	-	-	384	256	186	774	84.5	111	98	240
LSES 225MR	390	310	231	674	59.5	119	142	235	-	-	-	-	-	-	-	-	410	276	186	837	82	111	98	320

Type	4-pole motors															
	LS FCR								LS FCPL							
	AC	HJ	J	LB	LJ	I	II	 kg	AC	HJ	J	LB	LJ	I	II	 kg
LS 90L	184	156	160	331.5	48.5	55	55	24.2	-	-	-	-	-	-	-	-
LS 100L	200	161	160	382	52	55	55	30	-	-	-	-	-	-	-	-
LS 112 MG	235	169	160	421	51	55	55	44.5	-	-	-	-	-	-	-	-
LS 132 M	280	188	160	527	66.5	55	55	80	-	-	-	-	-	-	-	-
LS 160L	316	231	160	564	58	55	55	110	345	235	134	672	47.8	92	63	140
LS 180LR	-	-	-	-	-	-	-	-	345	235	134	678	39	92	63	150
LS 200LT	-	-	-	-	-	-	-	-	384	256	186	774	84.5	111	98	240
LS 225MR	-	-	-	-	-	-	-	-	410	276	186	837	82	111	98	320

Electromechanical products

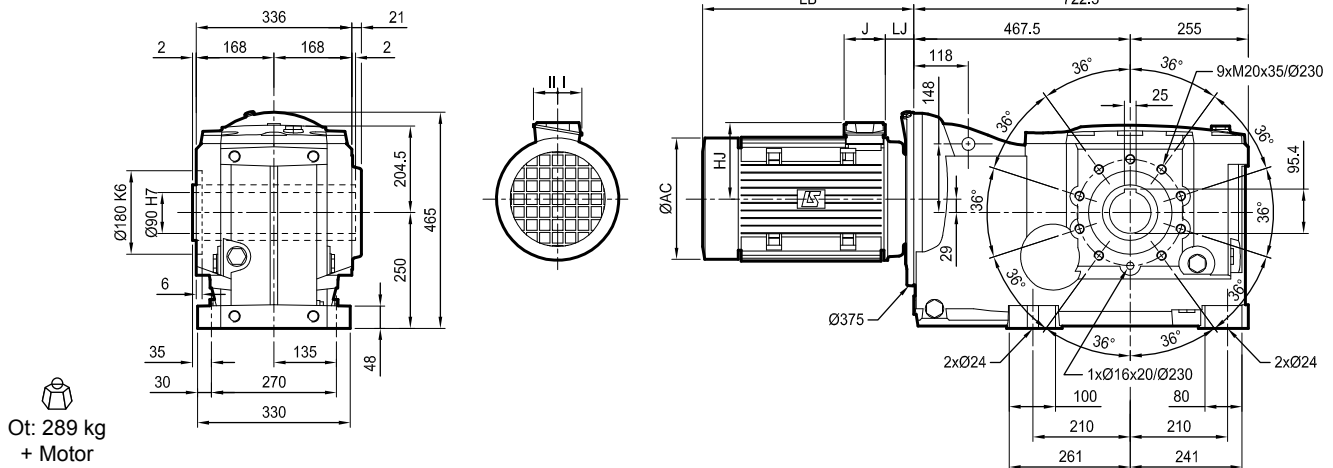
Orthobloc 3000

Dimensions

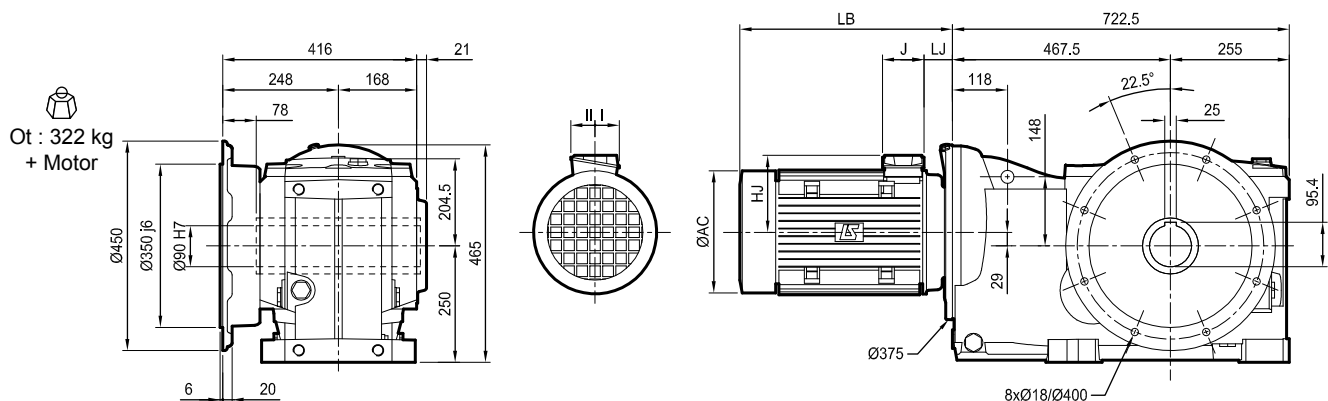
Dimensions of Orthobloc (Ot) gearboxes, MI integral mounting,
Ot 3733

Dimensions in millimetres

- SBT LR faceplate form, H cylindrical hollow shaft

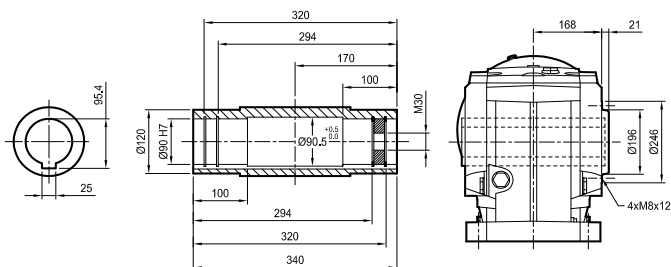


- BD L* flange form, H cylindrical hollow shaft

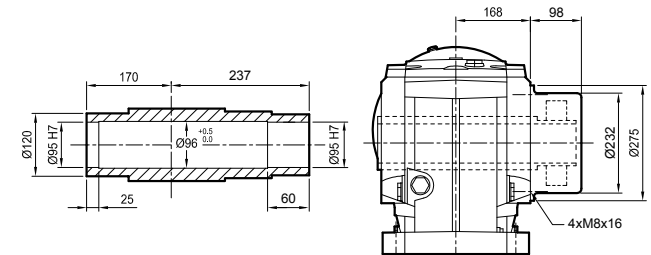


* BDR H right option: identical flange and shaft

- H hollow shaft details



- Option: shrink disc on right SDR*



* left SDL

Electromechanical products

Orthobloc 3000

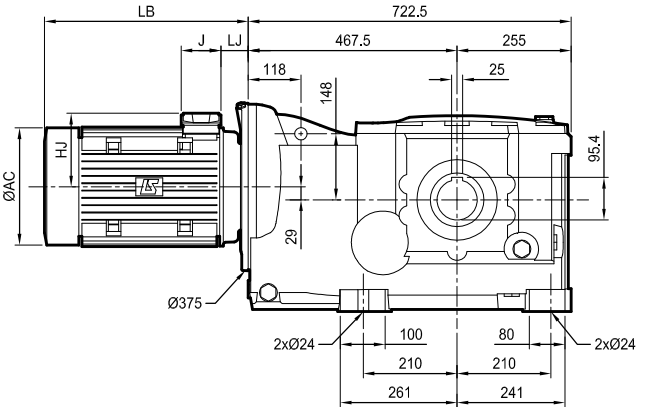
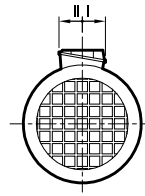
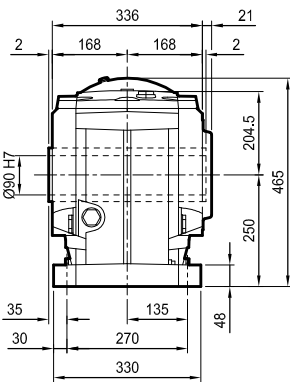
Dimensions

Dimensions of Orthobloc (Ot) gearboxes, MI integral mounting,
Ot 3733

Dimensions in millimetres

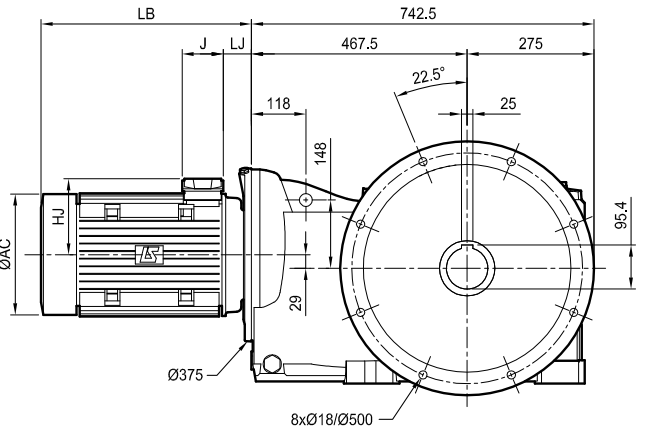
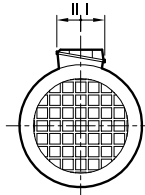
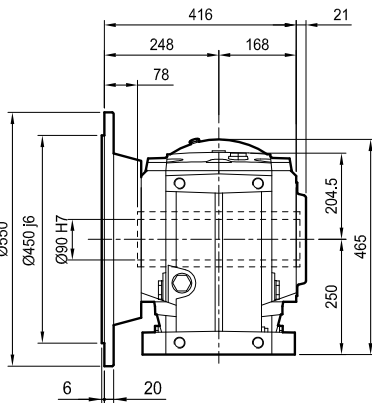
- S foot mounted form, H cylindrical hollow shaft

Ot: 292 kg
+ Motor



- BS L* flange form, H cylindrical hollow shaft

Ot: 328 kg
+ Motor



* BSR H right option: identical flange and shaft

Type	LS ES								4-pole motors								LS ES FCPL							
	AC	HJ	J	LB	LJ	I	II	kg	AC	HJ	J	LB	LJ	I	II	kg	AC	HJ	J	LB	LJ	I	II	kg
LS ES 90L	190	135	86	272	53	43	43	15.2	184	156	160	331.5	48.5	55	55	24.2	-	-	-	-	-	-	-	-
LS ES 100LR	200	140	86	336.5	54	43	43	25.7	200	161	160	394.5	52	55	55	30	-	-	-	-	-	-	-	-
LS ES 112MU	235	149	86	353	55.5	43	43	35	235	169	160	421	51	55	55	44.5	-	-	-	-	-	-	-	-
LS ES 132MU	265	190	126	446	51	63	63	68	280	188	160	527	66.5	55	55	80	-	-	-	-	-	-	-	-
LS ES 160L	312	222	126	490	42.8	63	63	91	316	231	160	564	58	55	55	110	345	235	134	672	47.8	92	63	140
LS ES 180LR	312	248	186	515	49.8	112	98	115	-	-	-	-	-	-	-	-	345	235	134	678	39	92	63	150
LS ES 200LR	350	256	186	609	58.5	112	98	164	-	-	-	-	-	-	-	-	384	256	186	774	84.5	111	98	240
LS ES 225MR	390	310	231	674	59.5	119	142	235	-	-	-	-	-	-	-	-	410	276	186	837	82	111	98	320

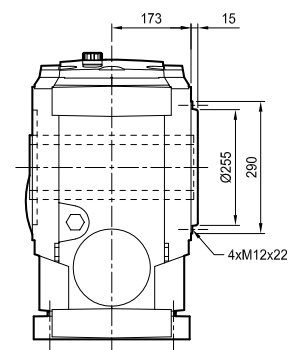
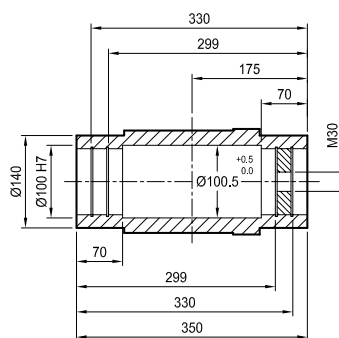
Type	4-pole motors								LS FCPL								LS FCPL							
	AC	HJ	J	LB	LJ	I	II	kg	AC	HJ	J	LB	LJ	I	II	kg	AC	HJ	J	LB	LJ	I	II	kg
LS 90L	184	156	160	331.5	48.5	55	55	24.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LS 100L	200	161	160	382	52	55	55	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LS 112 MG	235	169	160	421	51	55	55	44.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LS 132 M	280	188	160	527	66.5	55	55	80	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LS 160L	316	231	160	564	58	55	55	110	345	235	134	672	47.8	92	63	140	345	235	134	678	39	92	63	150
LS 180LR	-	-	-	-	-	-	-	-	345	235	134	678	39	92	63	150	384	256	186	774	84.5	111	98	240
LS 200LT	-	-	-	-	-	-	-	-	410	276	186	837	82	111	98	320	-	-	-	-	-	-	-	-
LS 225MR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Dimensions

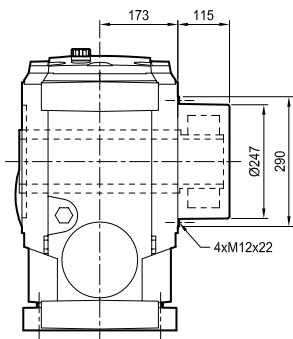
Dimensions in millimetres

[illegible]

Technical drawing of a circular part with a central hole and a vertical slot. The outer diameter is 106.4, the inner diameter is 28, and the slot width is 28.



Technical drawing of a stepped shaft. The shaft has a total length of 273 mm. It features a central step with a diameter of $\varnothing 106.5$ mm, which has a tolerance of $+0.5$ to 0.0 mm. The outer diameter of the shaft is $\varnothing 140$ mm. The distance from the left end to the start of the step is 175 mm. The distance from the end of the step to the right end is 90 mm. The diameter of the end section is $\varnothing 105$ H7. The drawing includes hatching to indicate the cross-section of the shaft.



Electromechanical products

Orthobloc 3000

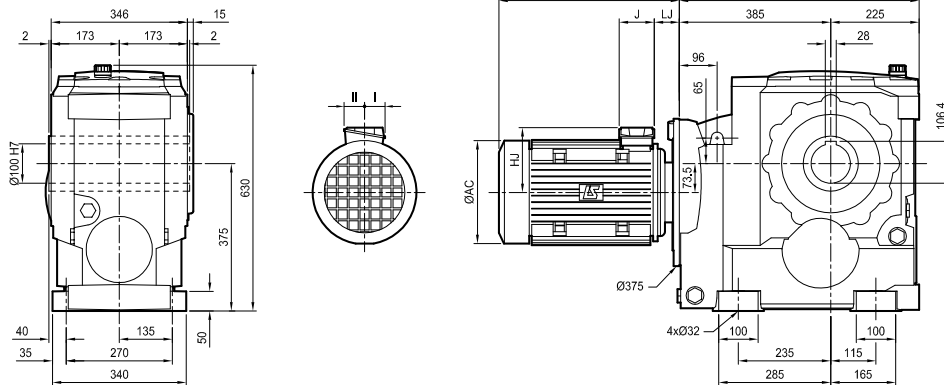
Dimensions

Dimensions of Orthobloc (Ot) gearboxes, MI integral mounting,
Ot 3833

Dimensions in millimetres

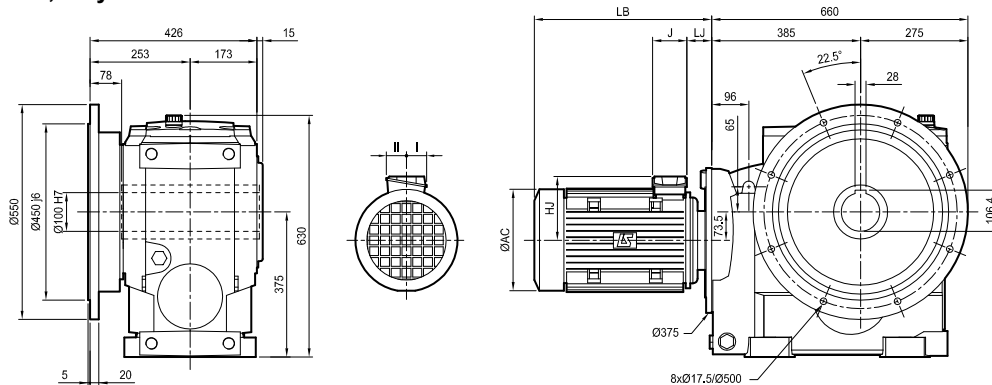
- S foot mounted form, H cylindrical hollow shaft


 Ot : 350 kg
 + mot



- BD L* flange form, H cylindrical hollow shaft


 Ot : 374 kg
 + mot



* BSR H right option: identical flange and shaft

Type	LSES								4-pole motors LSES FCR								LSES FCPL							
	AC	HJ	J	LB	LJ	I	II		AC	HJ	J	LB	LJ	I	II		AC	HJ	J	LB	LJ	I	II	
LSES 132MU	265	190	126	446	51	63	63	68	280	188	160	527	66.5	55	55	80	-	-	-	-	-	-	-	-
LSES 160L	312	222	126	477	29.8	63	63	91	316	231	160	564	58	55	55	110	312	235	134	663	38.8	92	63	140
LSES 180LR	312	248	186	502	36.8	112	98	115	-	-	-	-	-	-	-	-	312	249	134	678	49.8	112	98	150
LSES 200LR	350	256	186	596	45.5	112	98	164	-	-	-	-	-	-	-	-	350	256	186	814	58.5	112	98	240
LSES 225MR	390	310	231	674	59.5	119	142	235	-	-	-	-	-	-	-	-	390	276	186	878	82	112	98	320

Type	4-pole motors LS FCR								LS FCPL							
	AC	HJ	J	LB	LJ	I	II		AC	HJ	J	LB	LJ	I	II	
LS 132 M	280	188	160	527	66.5	55	55	80	-	-	-	-	-	-	-	-
LS 160L	316	231	160	564	58	55	55	110	312	235	134	663	38.8	92	63	140
LS 180LR	-	-	-	-	-	-	-	-	312	249	134	678	49.8	112	98	150
LS 200LT	-	-	-	-	-	-	-	-	350	256	186	814	58.5	112	98	240
LS 225MR	-	-	-	-	-	-	-	-	390	276	186	878	82	112	98	320

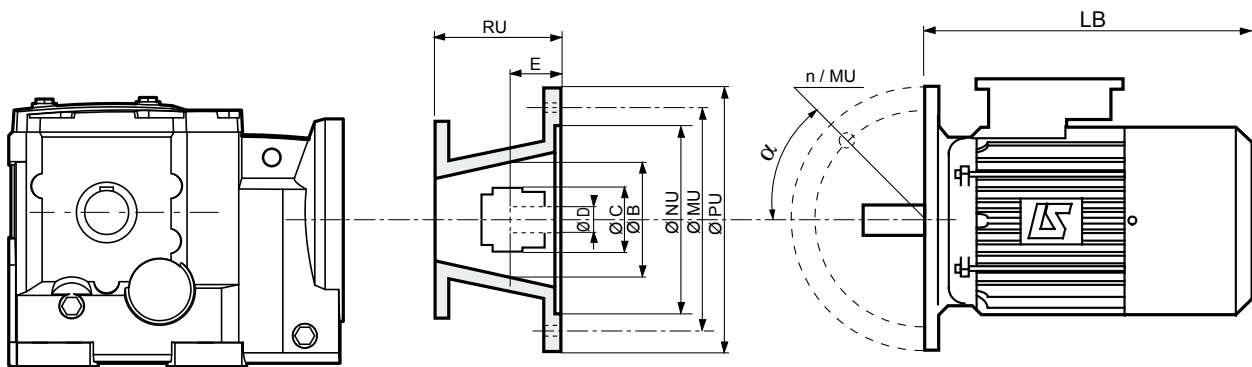
Electromechanical products

Orthobloc 3000

Dimensions

Dimensions of Orthobloc (Ot) gearboxes, MU universal mounting

Dimensions in millimetres



Type	LS, LSES IM 3001										U-mounts															
	(IM B5) CEI										Ot 31--		Ot 32--		Ot 33--		Ot 34--		Ot 35--		Ot 36--		Ot 37--		Ot 38--	
	Ø D	E	LB	LB FCR/FCPL	Ø MU	Ø NU	Ø PU	n	α°	Ø C	RU	Ø C	RU	Ø C	RU	Ø C	RU	Ø C	RU	Ø C	RU	Ø C	RU	Ø C	RU	
LS 71 L	14j6	30	183	271/-	FF130	110	160	4	45	65	122	65	122	65	122	65	122	65	122	-	-	-	-	-	-	
LSES 80 LG	19j6	40	247	292/-	FF165	130	200	4	45	65	130	65	130	65	130	65	126	65	130	-	-	-	-	-	-	
LSES 90 L	24j6	50	265	324/-	FF165	130	200	4	45	65	130	65	130	65	130	65	126	65	130	-	-	-	-	-	-	
LSES 100 LR	28j6	60	309	388/-	FF200	180	250	4	45	65	144	65	144	65	140	65	140	65	144	65	148	65	148	65	148	
LSES 112 MU	28j6	60	333	425/-	FF200	180	250	4	45	65	144	65	144	65	144	65	140	65	144	65	148	65	148	65	148	
LSES 132 MU	38k6	80	412	532/-	FF265	230	300	4	45	-	-	-	-	-	-	65	162	65	169	65	167	65	167	65	167	
LSES 160 L	42k6	110	495	567/668	FF300	250	350	4	45	-	-	-	-	-	-	-	-	95	194	95	199	95	199	95	199	
LSES 180 LR	48k6	110	520	-/683	FF300	250	350	4	45	-	-	-	-	-	-	-	-	95	194	95	199	95	199	95	199	
LSES 200 LR	55m6	110	620	-/828	FF350	300	400	4	45	-	-	-	-	-	-	-	-	95	194	95	199	95	199	95	199	
LSES 225' MR	60m6	140	676	-/953	FF400	350	450	8	22,5	-	-	-	-	-	-	-	-	-	-	120	311	120	311	120	311	
LSES 250' ME	65m6	140	810	-/1180	FF500	450	550	8	22,5	-	-	-	-	-	-	-	-	-	-	-	-	160	303	160	303	
LSES 280' MD	75m6	140	870	-/1246	FF500	450	550	8	22,5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	160	303	
LSES 315' SP	80m6	170	947	-/NC ²	FF600	550	660	8	22,5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

1. Horizontally mounted foot and flange mounted motors (B35). Provision of a motor support is recommended.
2. NC : consult Leroy-Somer

	Ot							
	31	32	33	34	35	36	37	38
MU max (kg)	4	4	8	14	20	75	75	75
LS max (kg)	65	65	70	120	150	350	350	350

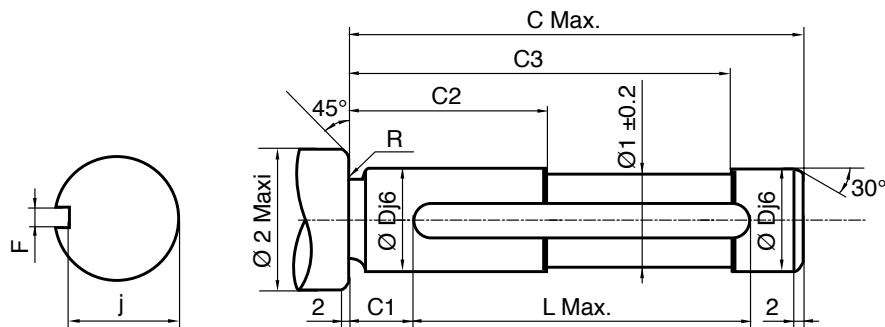
Electromechanical products

Orthobloc 3000

Dimensions

Driven shaft

Dimensions in millimetres



Type	Driven shaft										
	C	C1	C2	C3	D	F	j	L	$\varnothing 1$	$\varnothing 2$	R
Ot 3833	295	20	70	280	100	28	90	265	99,5	130	1,5
Ot 3733	290	20	105	275	90	25	81	280	89,5	120	1,6
Ot 3633	265	20	75	250	70	20	62,5	255	69,5	100	1,6
Ot 3533	200	15	90	179	60	18	53	175	59,5	65	0,8
Ot 3433	185	15	50	176	50	14	44,5	160	49,5	65	0,8
Ot 3333	145	15	40	133	40	12	35	120	39,5	55	0,8
Ot 3233	120	15	42	109	35	10	30	95	34,5	50	0,8
Ot 3232	120	15	42	109	35	10	30	95	34,5	50	0,8
Ot 3132	105	15	32	100	30	8	26	85	29,5	45	0,8

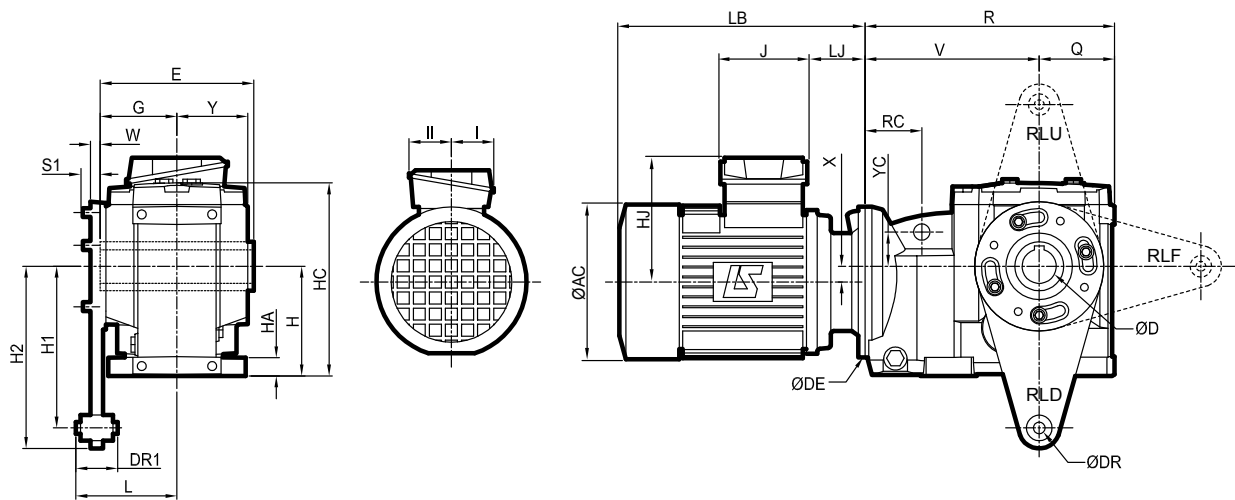
Electromechanical products

Orthobloc 3000

Dimensions

Torque arm

Dimensions in millimetres

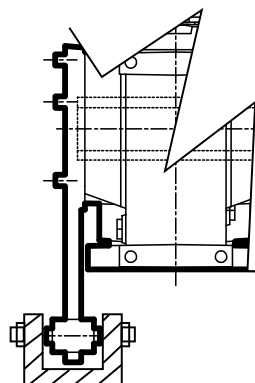


Torque arm R

Type	Ø D	Ø DE	Ø DR	DR1	E	G	H	H1	H2	HA	HC	L	Q	R	RC	V	W	X	Y	YC	S1
Ot 3833	100H7	375	32	116	346	173	375	550	610	50	630	253	225	610	96	385	28	73,5	173	65	13
Ot 3733	90H7	375	24	96	340	170	250	450	496	48	465	236	255	722,5	118	467,5	24	-29	168	148	12,5
Ot 3633	70H7	375	24	96	310	155	225	350	391,5	39,5	413	215	222	587	120	365	18	0	153	98	10
Ot 3533	60H7	262	16	54	244	122	212	310	340	30	346	139,5	132	405	73	273	15,5	37	112,5	67	-
Ot 3433	50H7	225	16	54	226	113	180	250	280	27	306	128,5	114	350	59	236	13,5	30	103,5	60	-
Ot 3333	40H7	184	16	54	173	86,5	140	200	230	21,5	245	110	90	305	65	215	21,5	7	85	50	-
Ot 3233	35H7	154	10	33	151	75,5	112	130	151	18,5	205	90	77	255	58	178	13	16	72,5	35	-
Ot 3232	35H7	184	10	33	151	75,5	112	130	151	21	267	91,5	93	290	77	197	13	63	72,5	85	-
Ot 3132	30H7	154	10	33	130	65	80	130	151	15	203,5	77,5	80	245	69	165	11	46,5	60	66	-

Shaft-mounted using a torque point.

We recommend mounting with the supplied flexible joint, as shown in the diagram.



Electromechanical products

Orthobloc 3000

Dimensions

SD shrink disc option

Dimensions in millimetres

ADVANTAGE OF THE SHRINK DISC

Specially designed for assembling hollow shafts, it attaches the transmission device securely to the shaft.

The torque (M), radial (F_R) and axial (F_a) forces are transmitted integrally without play. There is no need to use a key, and the absence of the keyway avoids incipient cracks.

Alternating movements are possible within the limits of the torque (M) indicated in the table.

The absence of initial play is retained throughout the life of the gearbox.

The tightening torque is maintained for operating temperatures from -50°C to $+250^{\circ}\text{C}$.

Surface roughness tolerance

The maximum permissible surface roughness is:

$$R_z \text{ max} = 15 \mu\text{m}.$$

The maximum permissible tolerance on the shrink disc working reach diameter = $h8$.

Secure positioning

While the screws are tightened, the hub does not move axially in relation to the shaft.

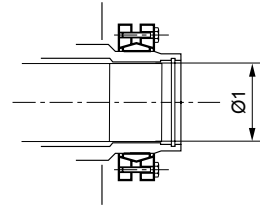
Characteristics of the shrink disc

Very high transmissible torque (shrink disc M according to table below).

No axial movement between shaft/hub (shrink disc F_a).

Takes little time to assemble. Quick to dismantle.

The assembly and dismantling precautions are described in the corresponding manual.

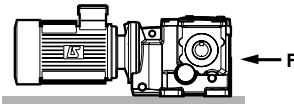


Type	Shrink disc torque M Nm	Shaft $\varnothing 1$	Tightening torque for shrink disc bolts Nm	Dimensions see pages
Ot 3833	26500	105	100	58
Ot 3733	13000	95	59	56
Ot 3633	7500	75	30	54
Ot 3533	6000	62	30	52
Ot 3433	2400	52	12	50
Ot 3333	1380	42	12	48
Ot 3232 - 33	860	36	12	44 - 46
Ot 3132	570	30	12	42

DEFINITION

After the operating position, the following elements must be specified:

- the mounting form and position: these are defined on page 4. The gearbox is viewed from side **F** with the motor behind, operation **B3** or **B5**.



- the side for fixing the **SD** shrink disc on the hollow shaft: **SD R**: shrink disc mounted on the right, **SD L**:

shrink disc mounted on the left.

The two tables below give the mounting options and the positioning of the shrink disc and cover according to the possible mounting forms.

With a flanged gearbox, the shrink disc and its cover are always opposite the flange.

SD R shrink disc and cover on right, client shaft on left: • = feasibility

Type	Foot mounting form		Flange mounting form		
	NS SD R	S SD R	SBT LR SD R	BS L SD R	BD L SD R
Ot 36 - 37 - 38	NA	•	•	•	-
Ot 33 - 34 - 35	-	•	•	•	•
Ot 32	NA	•	•	•	•
Ot 31	NA	•	•	•	-

NA: not available

SD L shrink disc and cover on left, client shaft on right: • = feasibility

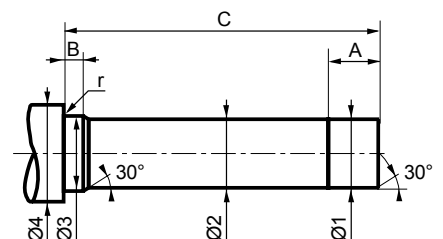
Type	Foot mounting form		Flange mounting form		
	NS SD L	S SD L	SBT LR SD L	BS R SD L	BD R SD L
Ot 36 - 37 - 38	NA	•	•	•	-
Ot 33 - 34 - 35	-	•	•	•	•
Ot 32	NA	•	•	•	•
Ot 31	NA	•	•	•	-

NA: not available

CLIENT SHAFT FOR SHRINK DISC

Type	A min.	B max.	C max.	r max.	$\varnothing 1h6$	$\varnothing 2$	$\varnothing 3h6$	$\varnothing 4$
Ot 3833	90	24,5	448	1,5	105	104	105	140
Ot 3733	60	24,5	407	0,8	95	94	95	120
Ot 3633	45	24,5	370	0,8	75	74	75	100
Ot 3533	50	11,5	304	0,8	62	61	63	90
Ot 3433	45	9,5	287	0,5	52	51	53	65
Ot 3333	37	9,5	224	0,5	42	41	44	55
Ot 3232 - 33	25	7,5	186	0,8	36	35	37	50
Ot 3132	25	34,5	167	-	30	29	30	45

These values are given as a guide only.



Electromechanical products

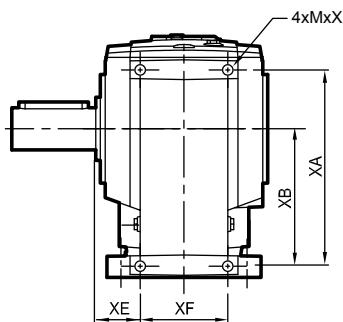
Orthobloc 3000

Dimensions

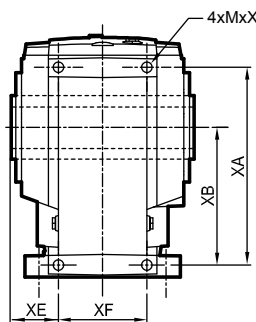
TF form option
(operation only in position B7¹)

Dimensions in millimetres

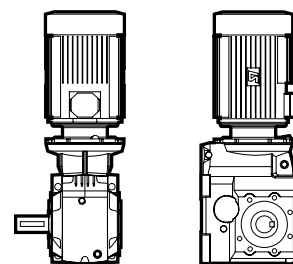
- TF faceplate form, L* output shaft on left



- TF faceplate form, H hollow shaft



- Position B7

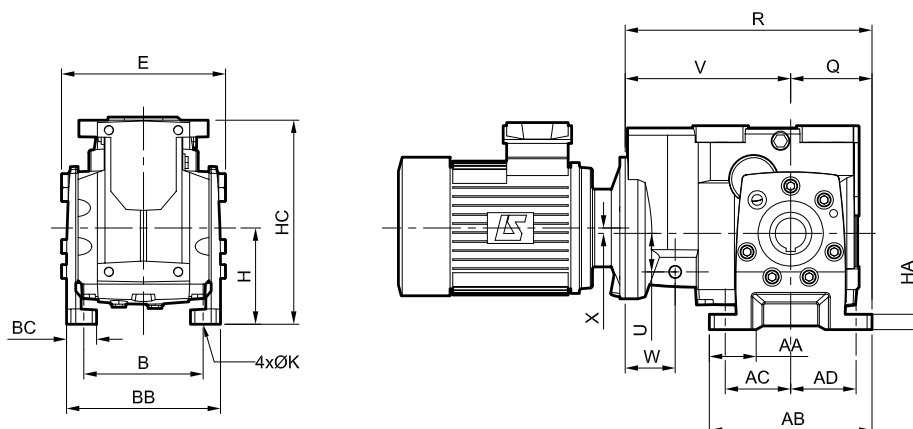


Form TF ¹ , Ot output shaft L* hollow H					
Type	MxX	XA	XB	XE	XF
Ot 3833	M30 x 45	490	340	75	200
Ot 3733	M24 x 40	345	224	85	170
Ot 3633	M20 x 35	295	200	78	154
Ot 3533	M16 x 27	280	196	59,5	125
Ot 3433	M12 x 22	238	164	62,5	100
Ot 3333	M12 x 22	184	127	41,5	90
Ot 3233	M10 x 22	155	102	38,5	72
Ot 3232	M10 x 22	155	102	38,5	72
Ot 3132	9	100	50	15	100

1. Operation only in position B7
* R shaft on right option

NS form option (feet kit added)

Dimensions in millimetres



Type	Feet added on																	
	AA	AB	AC	AD	B	BB	BC	E	H	HA	HC	K	Q	R	U	V	W	X
Ot 3533	103	330	140	140	230	280	60	293	200	40	412	24	165	438	67	273	73	37
Ot 3433	81	271	115	115	195	241	46	257	160	30	340	18	135.5	371.5	60	236	59	30
Ot 3333	61	211	85	85	155	200	39	213	125	20	265	14	106	321	50	215	65	7

Electromechanical products

Orthobloc 3000

Notes

I - SCOPE OF APPLICATION

These General Conditions of Sale («GCS») shall apply to the sale of all products, components, software and services (referred to as «Products») proposed or sold by the Seller to the Client. Said GCS shall also apply to all quotation or offers made by the Seller, and are an integral part of all orders. «Seller» is understood to mean all companies directly or indirectly controlled by LEROY-SOMER. As a complementary measure, orders are also subject to the latest version in force of the Inter-Union General Conditions of Sale for France of the F.I.E.E.C. (*Fédération des Industries Electriques, Electroniques et de Communication* [Federation of Electrical, Electronic and Communication Industries]), inasmuch as they are not contrary to the GCS.

The acceptance of the Seller's offers or quotations, or any order, entails the acceptance without reservation of these GCS and rules out all contrary provisions shown on all other documents and, in particular, on the Client's order forms and the Client's General Conditions of Purchase.

If the sale concerns castings, by way of derogation to Paragraph 1 above, said castings shall be subject to the latest version in force of the *Conditions Générales Contractuelles des Fonderies Européennes* [General Contractual Conditions of European Foundries].

The Products and services sold pursuant to these GCS may under no circumstances be used for applications in the nuclear field, as such sales expressly fall under technical specifications and specific contracts that the Seller reserves the right to refuse.

II - ORDERS

All orders, even those taken by the Seller's agents and representatives, and regardless of the transmission method, shall only bind the Seller after written acceptance thereby of the order.

The Seller reserves the option of modifying the characteristics of its Products without notice. However, the Client shall retain the possibility of specifying the characteristics on which its commitment is contingent. In the absence of any such express stipulation, the Client may not refuse delivery of new, modified Products.

The Seller may not be held liable for an unsatisfactory selection of Products if said selection results from conditions of use that are incomplete and/or mistaken, or not disclosed to the Seller by the Client. Except in the event of a stipulation to the contrary, the offers and quotations remitted by the Seller shall only be valid for thirty days as from the date on which they are drawn up.

Where the Products must comply with standards, specific regulations and/or be received by control and inspection agencies, the price request must be accompanied by the technical specification, all terms and conditions the Seller must comply with. Reference shall be made thereto on the quotation or offer. Approval and attendance costs shall always be borne by the Client.

III - PRICES

Tariffs are expressed exclusive of tax and may be revised without notice.

Prices are either deemed to be firm for the period of validity specified on the quotation, or subject to a revision formula attached to the offer and which specifies, according to the regulations, parameters pertaining to the materials, products, various services and salaries for which the indices are published in the B.O.C.C.R.F. (*Bulletin Officiel de la Concurrence, de la Consommation et de la Répression des Fraudes* [French Official Journal of Competition and Consumer Matters, and Anti-Fraud Measures]).

All additional costs, in particular approval costs, specific checks, etc., shall be invoiced in addition.

IV - DELIVERY

Sales are governed by the latest edition in force of the INCOTERMS published by the Internal Chamber of Commerce («I.C.C. INCOTERMS»).

The Products shall be dispatched according to the conditions stated on the order acknowledgement issued by the Seller for all orders of Products.

Except in the event of specific provisions, the prices correspond to Products that are made available in the Seller's factories, including basic packaging.

Except in the event of a provision to the contrary, the Products shall always be transported at the risk of the addressee. In all cases, it shall be the responsibility of the addressee to make any claims to the carrier within the delivery time and in the forms specified by law, concerning the state or number of parcels received, and to concomitantly provide the Seller with a copy of such declaration. Failure to comply with said procedure shall exempt the Seller from any liability. In any event, the Seller's liability may not exceed the amount of the indemnities received from its insurers.

If the provisions concerning transportation are amended by the Client subsequent to the acceptance of the order, the Seller reserves the right to invoice any supplemental costs that may result therefrom.

Except in the event of a contractual or statutory obligation to the contrary, packaging shall not be returnable.

In the event that a delivery of Products is delayed for a reason not attributable to the Seller, the Products stored on the Seller's premises shall be insured at the exclusive risk of the Client. Consideration for storage, costs will be invoiced at a rate of 1% (*one per cent*) of the total amount of the order, per week or partial week of storage, with no deductible or *de minimis* amount, as from the date of Products availability provided for in the contract. Upon expiration of a period of thirty days as from said date, the Seller may, at its discretion, either freely dispose of the Products and/or agree with the Client on a new delivery date for said Products, or invoice the Client in full for payment, according to the timeframes and amount provided for contractually. In any event, down payments shall inure to the Seller as indemnities, without prejudice to any other action the Seller may take.

V - DELIVERY TIME

The Seller shall only be bound by the delivery time mentioned on its order acknowledgement. Said delivery time shall only start to run as from the date of issuance of the order acknowledgement by the Seller, and subject to the fulfillment of the conditions provided for on the confirmation receipt, in particular receipt of the down payment for the order, notification of the opening of an operative irrevocable and confirmed documentary credit that complies in all respects to the Seller's request (*in particular regarding the amount, currency, validity and licence*), acceptance of the payment conditions accompanied by the implementation of any guarantees requested, etc.

Exceeding delivery time shall not grant the Client entitlement to damages and/or penalties.

Except in the event of a specific condition to the contrary, the Seller reserves the right to make partial deliveries.

Delivery times shall be interrupted by right and without the need for any judicial formalities, by any failure to pay or late payment by the Client.

VI - TESTS - QUALIFICATION

The Products manufactured by the Seller are checked and tested before leaving its factories. Clients may be present at said tests if specified on the order.

Specific tests and/or trials, as well as approval of Products, requested by the Client, whether carried out on the Client's premises or in the Seller's factories, on site, or by control and inspection agencies, must be specified on the order and are always at Client's expense.

Prototypes for Products specially developed or adapted for a Client must be qualified by the Client before serial production in order to ensure that it is compatible with the other components that make up its equipment, and that it is adapted to the intended use. Said qualification will also enable the Client to ensure that the Products comply with the technical specification. In this respect, the Client and Seller shall sign a Product Approval Form in two original, one of which shall be retained by the Client and one by the Seller.

In the event that the Client requires delivery without having firstly qualified the Products, said Products shall be delivered as they stand and shall always be deemed to be prototypes: the Client shall then be solely liable for using the Products or delivering them to its own clients. However, the Seller may also decide not to deliver the Products that have not received the Client's prior approval.

VII - PAYMENT CONDITIONS

All sales shall be deemed to be completed and payable at the Seller's registered office, without any possible derogation, regardless of the payment method, where the contract was concluded and where delivery was made.

Where the Client is located out of French territory, invoices shall be payable in cash upon receipt, or by a bank draft or a bill of exchange, within 30 (thirty) days net.

All early payment compared to the deadline fixed shall give right to a discount of 0.2% (*nought point two per cent*) per month, of the amount concerned of the invoice.

Except in the event of provisions to the contrary, where the Client is located outside of French Territory, invoices shall be payable in cash against remittance of shipping documents, or by irrevocable documentary credit confirmed by a first rate French bank, at Client's expense.

Payment shall be understood to mean the funds being made available on the Seller's bank account and must imperatively be made in the invoicing currency.

Pursuant to French Law no. 2008-776 of 4 August 2008, failure to pay an invoice when due shall trigger, after service of formal notice that has remained without effect, payment to the Seller of a flat-rate penalty on the due date of the receivable, which shall be applied to amount inclusive of tax of monies owed if the invoice is liable to VAT (*Value Added Tax*), and the suspension of pending orders. Said penalty is equal to the European Central Bank interest rate on the main refinancing operations + 10 basis points.

The collection of said monies via litigation shall trigger an increase of 15% (*fifteen per cent*) of the amount claimed, with a minimum of Euros 500 exclusive of tax (*five hundred euros exclusive of tax*), with tax in addition if due.

Moreover, subject to compliance with the statutory provisions in force, in the event of total or partial failure to pay any invoice or instalment whatsoever, regardless of the payment method used, all amounts that remain owed to the Seller (*including its subsidiaries, affiliated or allied companies, whether French or foreign*) for all deliveries and services, regardless of the due date originally provided for, shall immediately become due.

Notwithstanding any specific payment conditions provided for between the parties, the Seller reserves the right to require, in the event of a decline in the Client's credit rating, a payment incident or bankruptcy of the Client :

- the payment in cash, before the Products leave the factory, for all orders currently being fulfilled,
- down payments to be made on all orders,
- alternative or different payment guarantees.

VIII - PAYABLE AND RECEIVABLE BALANCE

Except where prohibited by law, the Seller and the Client expressly agree to balance their payables and receivables arising from their trade relations, even if all conditions defined by law for legal balancing are not met.

For the application of said clause, the Seller shall mean any company of the LEROY-SOMER Group.

IX - TRANSFER OF RISK / RESERVE OF TITLE

Risk shall be transferred as soon as the Products are made available according to the delivery conditions stipulated on the order acknowledgement.

The transfer to the Client of title shall take place after payment in full. In the event that the restitution of the Products delivered is claimed by the Seller, the Seller is entitled to retain any down payment as compensation.

Remittance of a bill that creates an obligation to pay (*bill of exchange or other*) shall not constitute payment and discharge. For as long as the price has not been paid in full, the Client is required to inform the Seller, within twenty-four hours, of the sequestration, requisition or confiscation of the Products for the benefit of a third party, and to take all protective measures to make known the Seller's property right in the event of action by creditors, and to cause such right to be respected.

X - CONFIDENTIALITY

Each of the parties undertakes to maintain the confidentiality of all technical, trade, financial or other information received from the other party, whether orally, in writing or by any other means of communication, when any order is negotiated and/or fulfilled.

This confidentiality obligation shall apply throughout the period during which the order is fulfilled and for 5 (five) years subsequent to completion or cancellation thereof, regardless of the reasons therefor.

XI - INDUSTRIAL AND INTELLECTUAL PROPERTY

Data, studies, results, information or software, whether patentable or not obtained by the Seller when any order is fulfilled shall remain the exclusive property of the Seller.

With the exception of instruction and maintenance manuals, documents of any nature remitted to the Client shall remain the exclusive property of the Seller and must be returned to it upon request, even if the Client was invoiced for part of the cost of the study, and said documents may not be disclosed to third parties or used without the Seller's prior written agreement.

XII - CANCELLATION / TERMINATION

The Seller reserves the right to cancel or terminate immediately, at the Seller's discretion, by right and without the need for any judicial formalities, the contract in the event of failure to pay any portion whatsoever of the price, when due, or in the event of any breach of any of the Client's contractual obligations. Down payments and any amount already paid shall remain in Seller's hands in the form of indemnities, without prejudice to the Seller's right to claim damages. In the event that the contract is cancelled, the Products must be returned to the Seller immediately, regardless of where the Products are located, at Client's expense and risk, under penalty of 10% (*ten per cent*) of the value thereof, per week's delay.

XIII - WARRANTY

The Seller warrants the Products against all operating defects caused by a material or manufacturing fault, for a period of twelve months as from the date on which the Products are made available, unless a different statutory provision subsequently applies, under the conditions defined below.

The warranty may only be triggered insofar as the Products have been stored, used and maintained in accordance with the Seller's instructions and manuals. The warranty does not apply where the defect results, in particular, from :

- inadequate monitoring, maintenance or storage,
- normal wear and tear on the Products,
- servicing or modification of the Products without the Seller's prior written authorisation,
- abnormal use of the Products or use of the Products for a purpose other than that intended,
- faulty installation of the Products on the premises of the Client and/or the end user,
- failure by the Client to disclose the purpose or conditions of use of the Products,
- failure to use genuine spare parts,
- force majeure or any event that is beyond the control of the Seller.

In any case, the warranty is limited to the replacement or repair of the parts or Products deemed faulty by the Seller's technical departments. If the repair is entrusted to a third party, the repair shall only be carried out once the Seller has agreed to the quotation for the repair.

All Products returns must have been given the Seller's prior, written authorisation.

The Products to be repaired must be dispatched carriage paid, to the address given by the Seller. If the Products are not accepted under warranty, their return to the Client shall be invoiced to the Client or the end user.

This warranty shall apply to the Seller's Products that are made readily available and therefore does not cover the de-installation and re-installation of said Products in the equipment into which it is mounted.

Repair, modification or replacement of any part or Product during the warranty period may not result in the warranty period being extended.

The provisions of this article constitute the Seller's sole obligation concerning the warranty of the Products delivered.

XIV - LIABILITY

The Seller's liability is strictly limited to the obligations stipulated in these GCS and those expressly accepted by the Seller. All penalties and indemnities provided for therein constitute lump sum damages that include discharge for the Seller and are exclusive of any other penalty or indemnification.

With the exception of the Seller's gross negligence and the compensation of bodily injury, the Seller's liability shall be limited, in total, to the contractual amount, exclusive of tax, of the Product(s) that give(s) right to compensation.

The Seller may under no circumstances be required to indemnify consequential, indirect and / or punitive damages that the Client may use as the basis for a claim; as a result, the Seller may not be required to indemnify, in particular, production losses, operating losses or lost profit or, in general, any damage eligible for indemnification other than bodily injury or damage to property.

The Client undertakes to hold harmless the Seller and / or its insurers from any and all claims made by its insurers and/or any third party in a contractual relation with the Client, in excess of the limit and for the exclusions listed above.

XV - SPARE PARTS AND ACCESSORIES

Spare parts and accessories shall be supplied upon request, to the extent of their availability. Associated costs shall be invoiced in addition. The Seller reserves the right to require a minimum quantity or invoicing amount per order.

XVI - WASTE MANAGEMENT

The Products that form the purpose of the sale does not fall within the scope of the European Directive 2002/96/EC (WEEE) dated January 27th, 2003, and all related legislation of Member States of the European Union that result therefrom, on the composition of electrical and electronic equipment and the disposal of waste from such equipment.

In accordance with Article L 541-2 of the French Environment Code, it is the responsibility of the waste holder to ensure the disposal thereof or to cause the disposal thereof at its own expense.

XVII - FORCE MAJEURE

With the exception of the Client's obligation to pay the monies owed to the Seller in respect of an order, the Client and Seller may not be held liable for the total or partial failure to perform their contractual obligations if such failure results from the occurrence of a force majeure. Delays or disturbances in production that totally or partially result from war (whether declared or not), terrorist act, strikes, riots, accidents, fires, floods, natural disasters, transportation delays, shortage of components or materials, governmental decision or action (including prohibition on import/export or the withdrawal of an import/export licence) shall, in particular, be deemed a force majeure.

If one of the parties is delayed or prevented from performing its obligations by reason of this Article for a period in excess of 180 consecutive days, each party may then terminate, by right and without any need for judicial formalities, the unperformed part of the order, by written notice to the other party, without liability. However, the Client shall be required to pay the price agreed pertaining to the Products already delivered on the date of termination.

XVIII - PROHIBITION ON UNLAWFUL PAYMENTS

The Client shall refrain from being engaged in any activity that would expose the Seller or any of its affiliates to a risk of penalties under laws and regulations of any relevant jurisdiction prohibiting improper payments, including but not limited to bribes or gifts of an obviously unreasonable amount, to any government or agency officials, to political parties or their officials or candidates for public office, or to any employee of any customer or supplier.

XIX - TRADE COMPLIANCE LAWS

The Client agrees that all applicable import, export control and sanctions laws, regulations, orders and requirements, as they may be amended from time to time, including without limitation those of the European Union, the United States of America, and the jurisdictions in which the Seller and the Client are established or from which Products may be supplied, and the requirements of any licences, authorisations, general licences or licence exceptions relating thereto ("Trade Compliance Laws") will apply to its receipt and use of Products, as well as related services and technology. In no event shall the Client use, transfer, release, export or re-export the Products, related services or technology in violation of Trade Compliance Laws.

Seller shall have no obligation to supply any Products, or services unless and until it has received any necessary licences or authorisations or has qualified for general licences or licence exceptions under Trade Compliance Laws.

If for any reason any such licences, authorisations or approvals are denied or revoked, or if there is a change in any Trade Compliance Laws that would prohibit Seller from fulfilling the contract, or would in the reasonable judgement of Seller otherwise expose Seller and/or Seller's Affiliate(s) to a risk of liability under Trade Compliance Laws, Seller shall be relieved without liability of all obligations under the contract.

XX - SEVERABILITY

All clauses and/or provisions of these General Conditions that are deemed or become null or void shall not cause the nullity or voidance of the contract, but solely the clause and/or provision concerned.

XXI - DISPUTES

THIS CONTRACT SHALL BE GOVERNED BY AND INTERPRETED IN ACCORDANCE WITH THE LAWS OF FRANCE.

ANY DISPUTE IN RELATION TO THE INTERPRETATION OR THE EXECUTION OF THIS CONTRACT NOT AMICABLY SETTLED BETWEEN THE PARTIES WITHIN A 30 DAY PERIOD, SHALL BE SETTLED BY THE COMPETENT COURT OF ANGOULÊME (FRANCE), EVEN IN THE CASE OF INTRODUCTION OF THIRD PARTIES OR THE INVOLVEMENT OF SEVERAL DEFENDANTS. HOWEVER, THE SUPPLIER RESERVES THE EXCLUSIVE RIGHT TO BRING THE DISPUTE TO THE COMPETENT COURTS OF THE SELLER OR THE CLIENT.



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