

Channel Mixer

Here you will find technical documentation for Landia mixers in the form of schematic drawing, service instructions and more.

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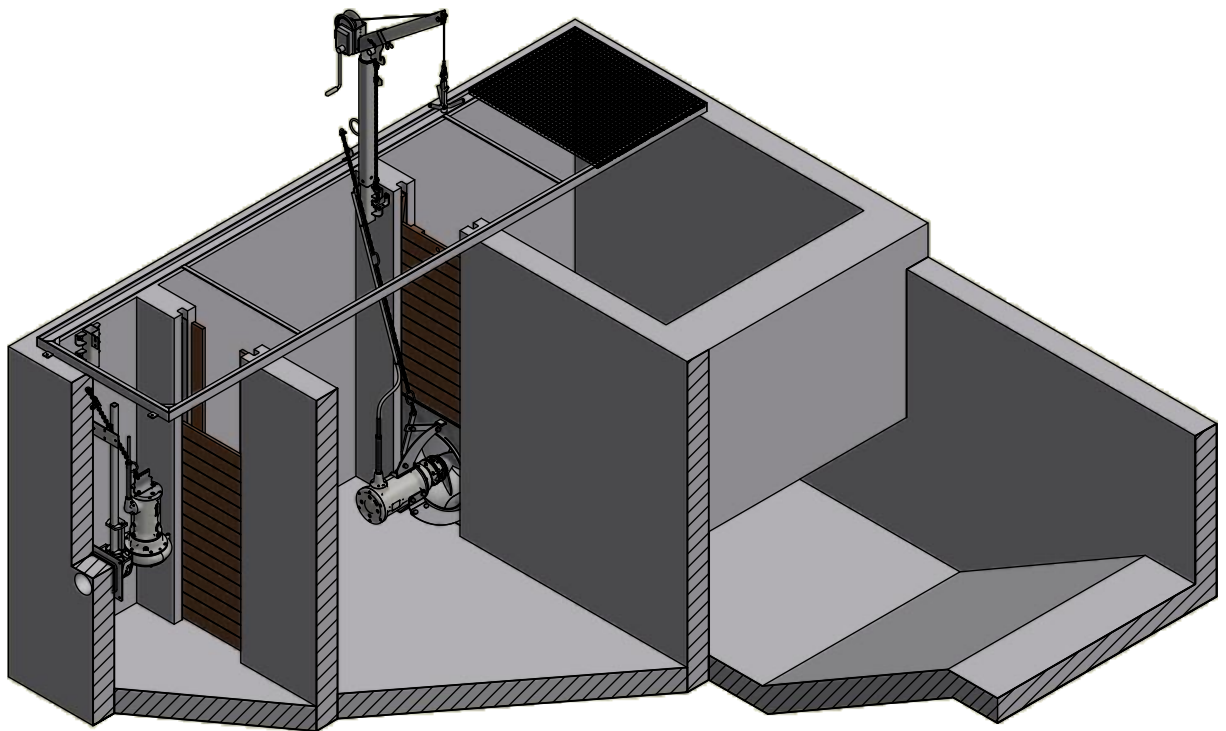
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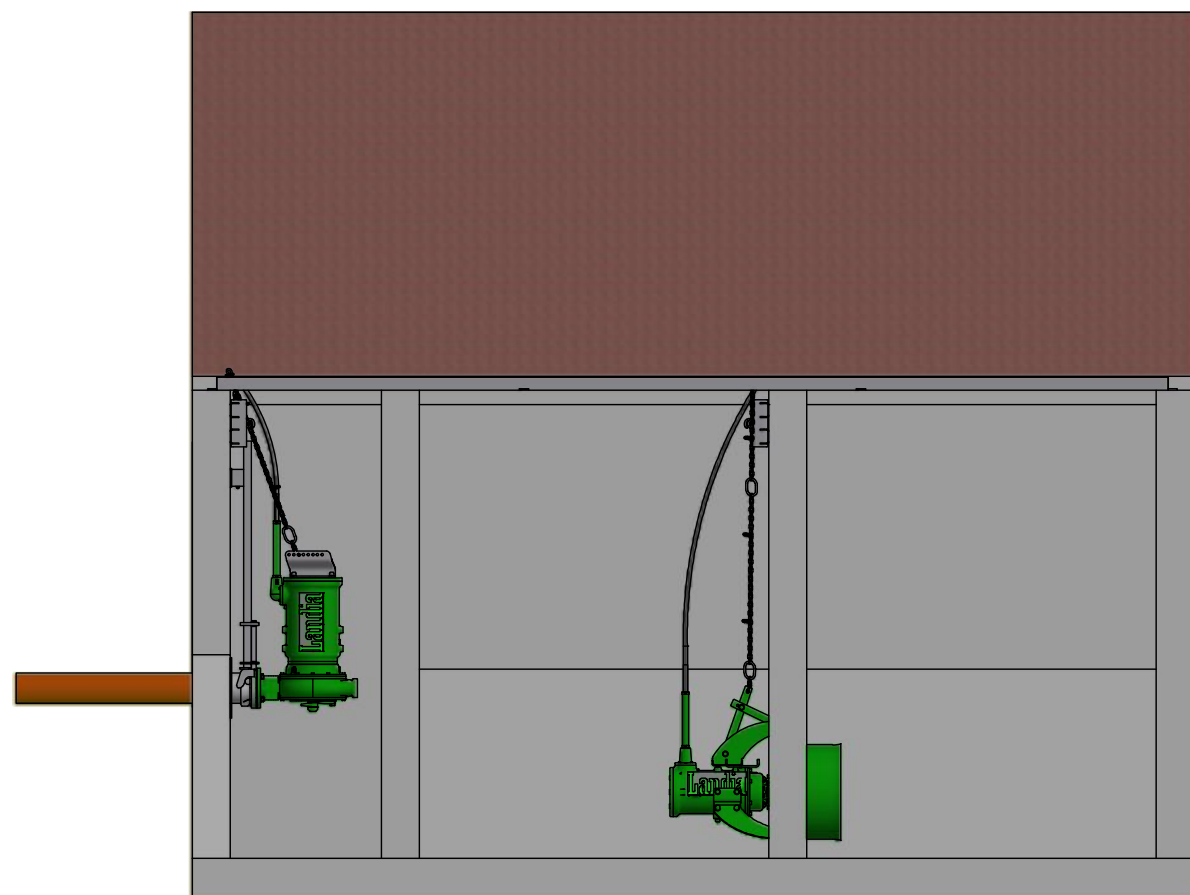
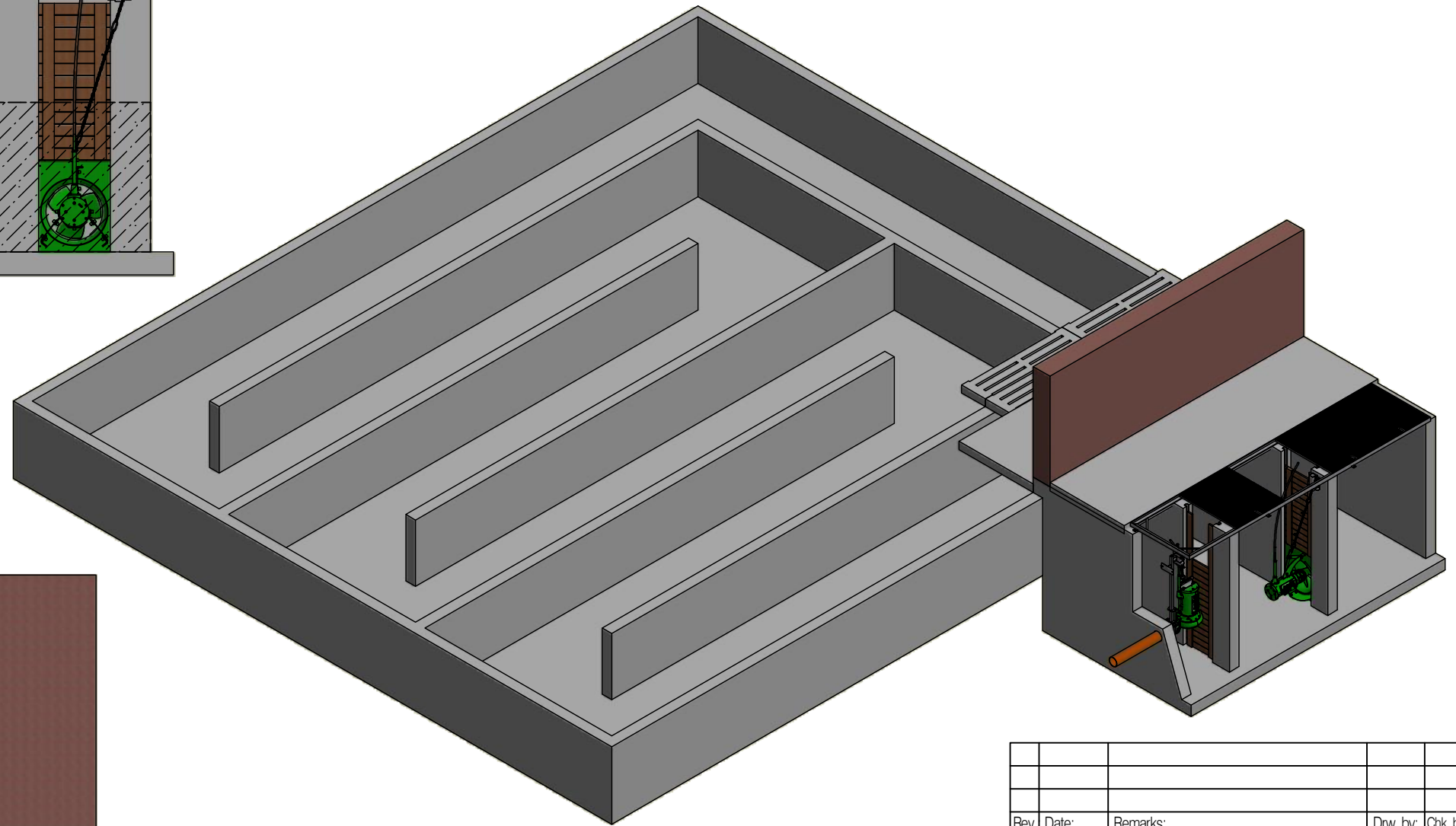
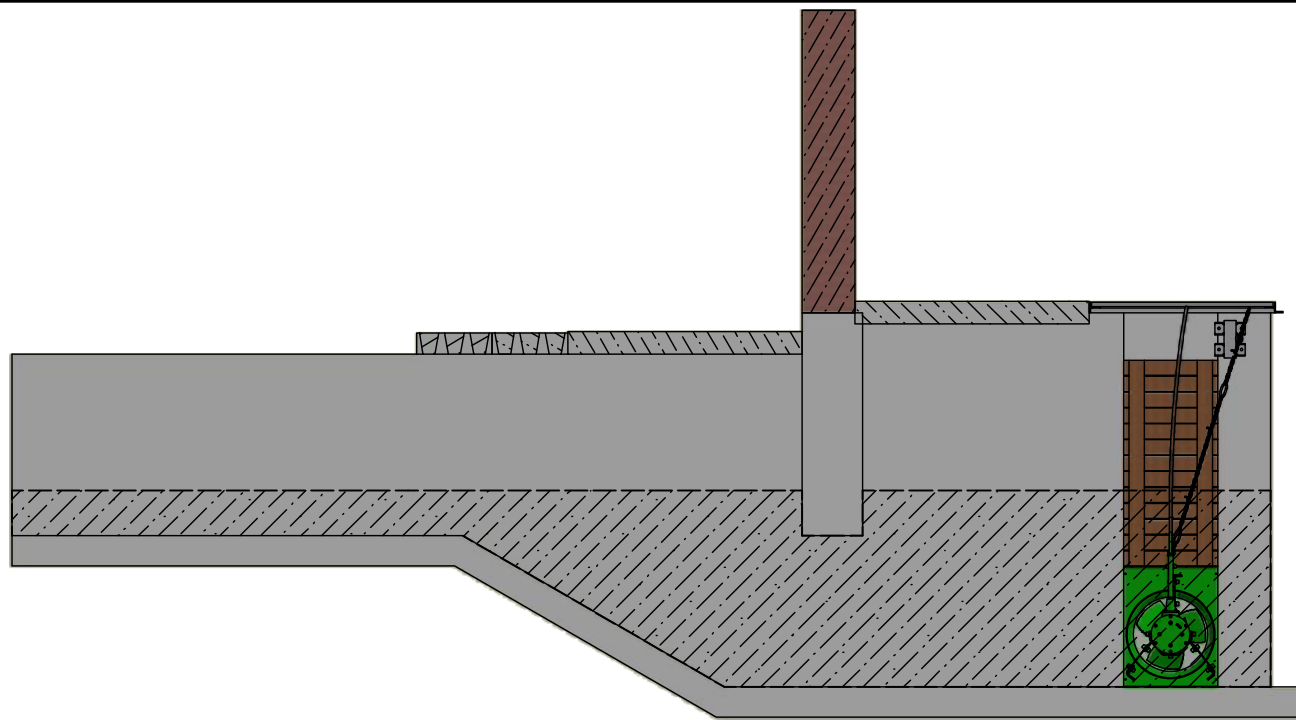
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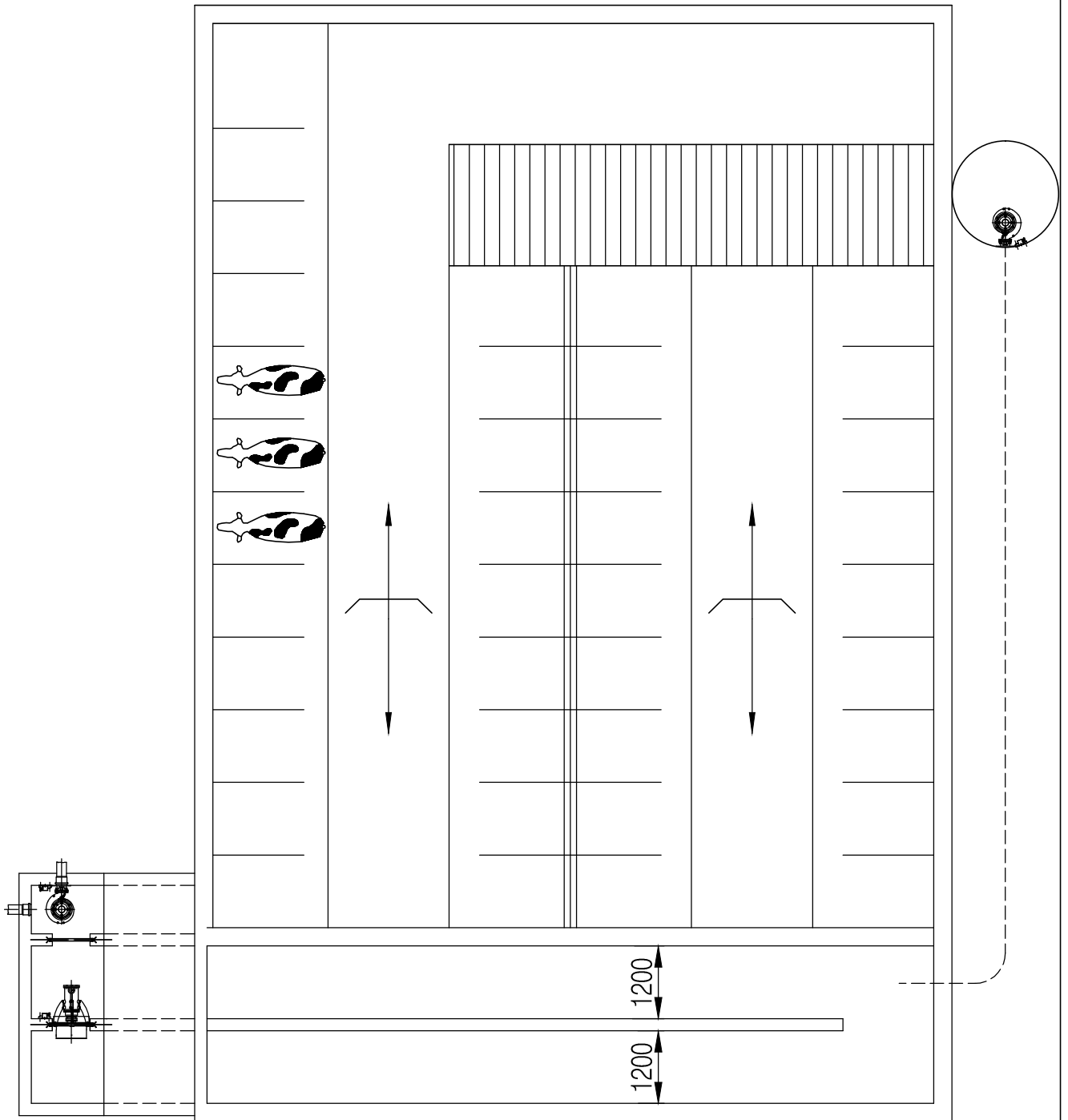
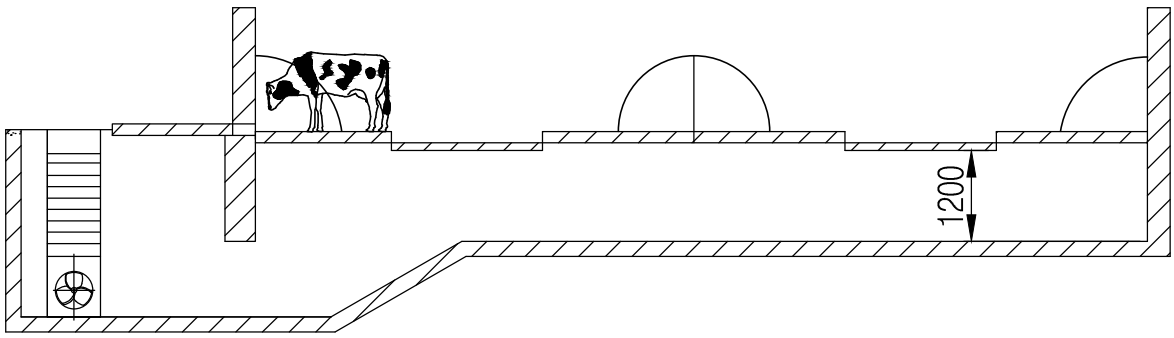
Landia[®]

AXP 500
Principtegning - Schematic drawing
Prinzipskizze - Dessin de principe

Scale:	Sign.:	Date:
1 : 50	HL LEN	23-03-2020
Dwg.no.:		3740747
Revision date: 23-11-2020		



Rev.	Date:	Remarks:	Drw. by:	Chk. by:
Landia				
Sign.:	Checked by:	Date:	Status	
ANL	LEN	30-05-2017		
Title: Kanalomsøring				
Customer:				
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1 : 85	A3	3740938		



Landia

Kanalomrøring i tværkanal

Principtegning

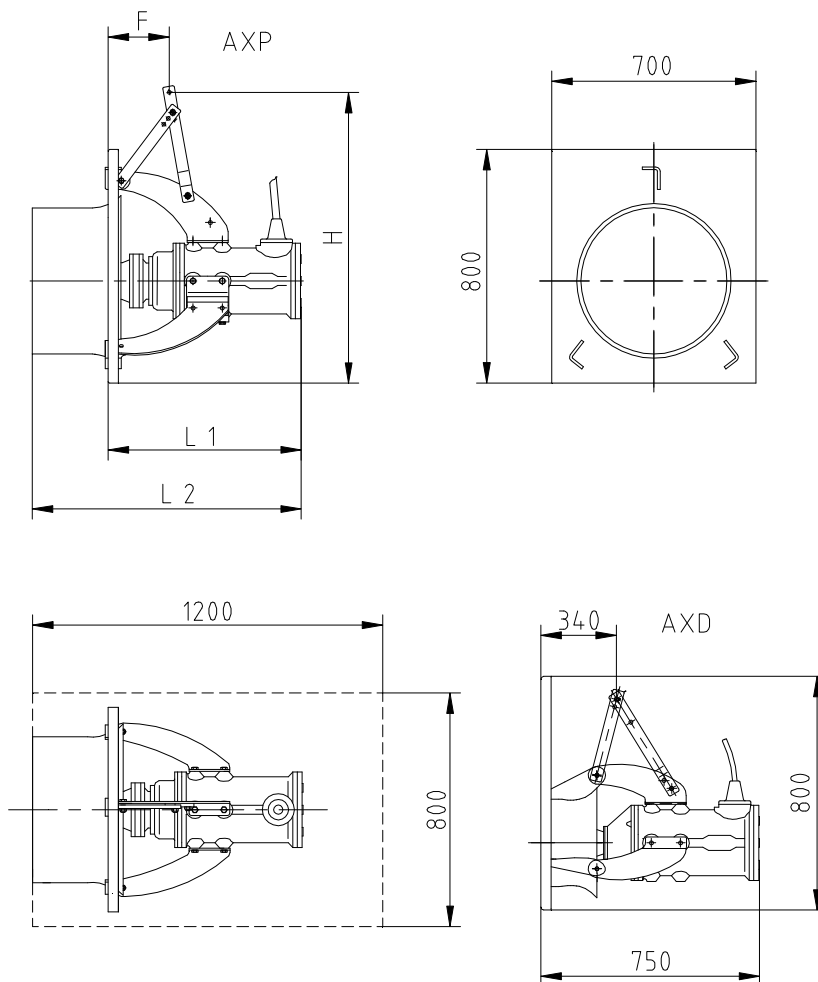
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Date:
07-12-2011

Dwg.no.:

3740882

**Recirkulationspumpe/ Recirculation pump/ Rezirkulationspumpe/ Pompe de recirculation/
 Type AXD 300 - AXP 500**


Varenr./ Article no./ Artikel Nr./ Code no.	Effekt/ Power/ Leist./ Puiss. [kW]	Serie/ Series/ Baureihe/ Série ms.	Motor omdr./ Motor rpm./ Motor Drehzahl/ Tours moteur [1/min]	Prop. omdr./ Prop. rpm./ Prop. Drehzahl/ Tours hélice [1/min]	Dimensioner – Dimensions Hauptmaße – Encombremnts [mm]			
					H	L 1	L 2	F
(400V)								
1708305	5,5	132	750	750	-	750	-	340
1804503	5,5	112	1500	400	1000	600	860	155
1804507	7,5	132	1500	400	985	655	925	230
1804508	11,0	132	1500	400	900	655	925	230
1804515	15,0	160	1500	475	930	720	980	265
1804518	18,5	160	1500	475	930	720	980	265

Ret til tekniske ændringer forbeholdes. - We reserve the right to make technical alterations.

Technische und maßliche Änderungen vorbehalten. – Sous réserve de modifications techniques.

Channel Mixer

Axial propeller pump designed to pump large amounts of liquids with low back pressure. The pump is most often used at sewage treatment plants for recirculating sludge, but it can also be used in, for example, drainage and for recirculation in fish farming facilities.

Landia's channel mixer AXP 500 is made for circular flushing and for mixing slurry in the channels under a slatted floor. It ensures an efficient mixing, so the slurry is always homogeneous.

- The slurry is always homogeneous, ready to pump to the storage tank without any difficulties such as clogged channels underneath the floor.
- By using a Landia control, the system runs automatically, and the time spent on handling the slurry is reduced to a minimum.
- Output up to 300 meters.



PROPELLER RPM

400 rpm – gear 1:3,55

500 rpm – gear 1:3,15

MATERIAL OF CONSTRUCTION

Motor housing and oil chamber	Cast iron EN-GJL-250
Propeller	W1.0038/A570 Gr.36
Gear	Cast iron EN-GJL-250
Gear output shaft	Shaft steel W1.6511/AISI9840 (no contact with liquid)
Bolts	A4
Exterior sealing system	3 oil sealing rings made of nitrile Wear bush made of stainless steel W1.4301/AISI304 (ceramic coating optional)
Interior sealing set	Mechanical shaft seal: silicon carbide/silicon carbide
Oil type	SP 100
Grease type	Extreme pressure grease

SERVICE AND MAINTENANCE

Recommended service interval/oil change	Maximum 2,000 operating hours/minimum once a year
Motor	Lifetime lubricated bearings
Gear	Periodic oil change Calculated service life >100,000 operating hours
Propeller	Periodic grease lubrication

SURFACE TREATMENT

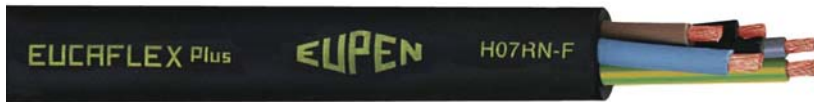
Machinery enamel: RAL 9005 (Jet Black)

Jet Black

ELECTRICAL CABLE

H07RN-F/S07RN-F EUCAFLEX^{Plus} Cable.

Resistant to oil and UV radiation.



Number of conductors:

H07RN-F 7G1.5 mm² (Not used in United Kingdom)

H07RN-F 7G2.5 mm² (Only United Kingdom. Motor ≤ 5,5 kW)

S07RN-F 7G4+3x1.5 mm²

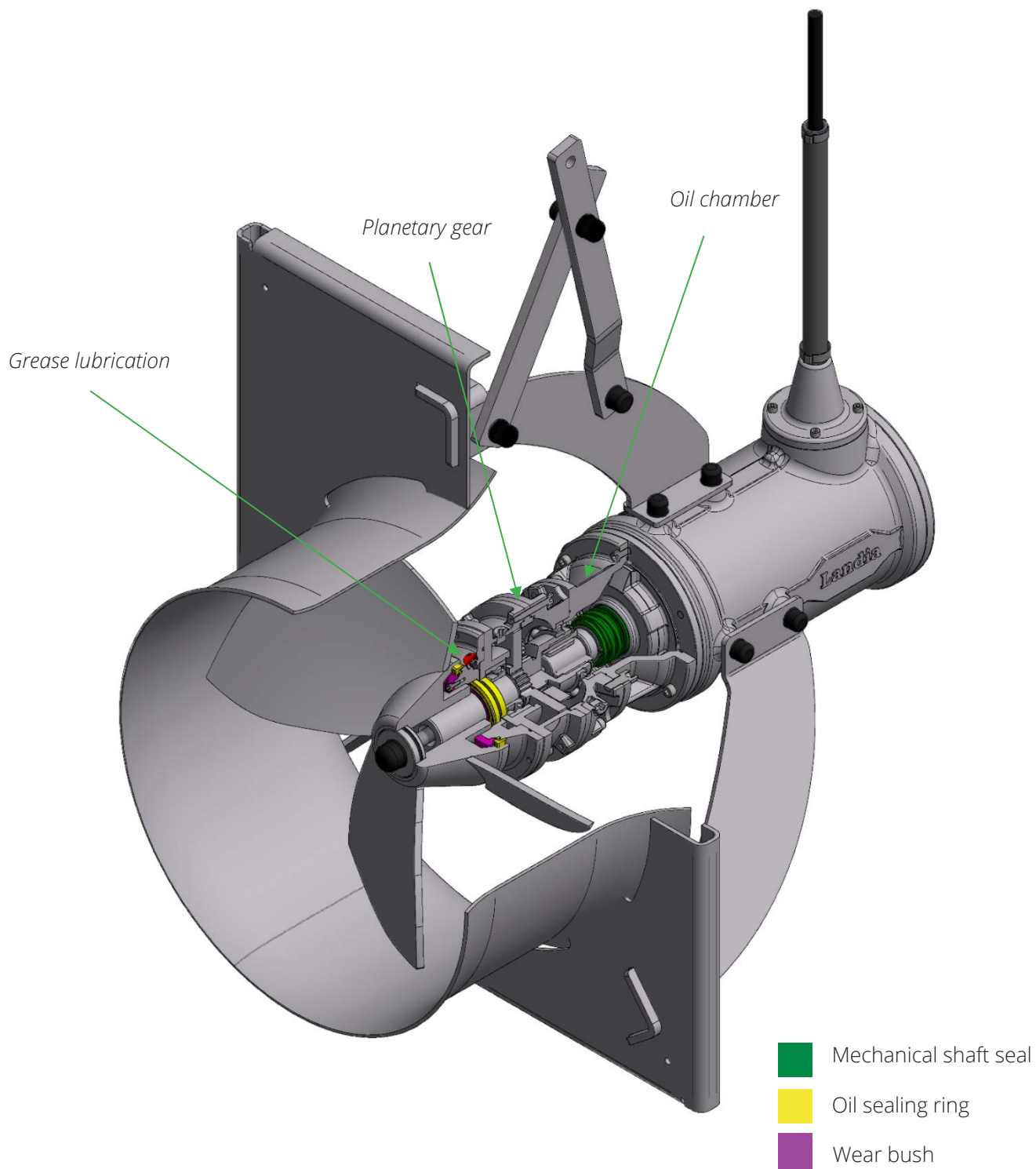
As standard supplied with 7 m of cable (extra length available upon request).

MONITORING FUNCTIONS

Bimetal thermal sensors 120 °C

DESIGN

The Landia AXP is an efficient channel mixer for circulation and mixing in slurry channels. The 4-pole motor ensures a slim design with a high pump efficiency.



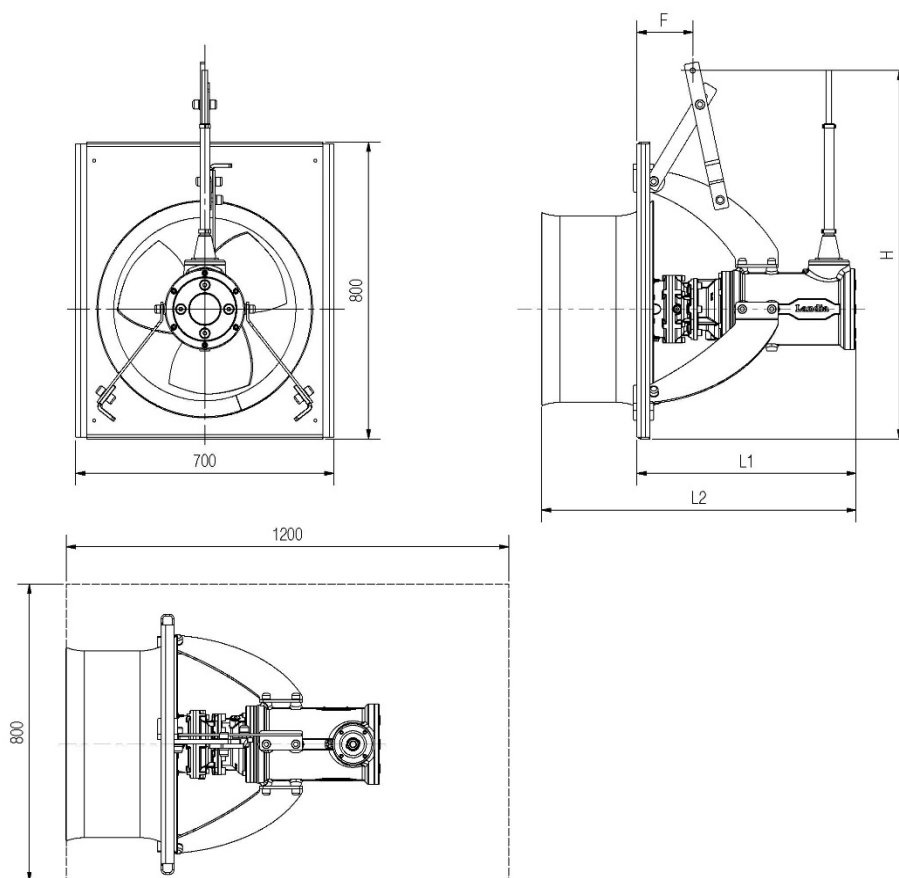
ELECTRICAL DATA

Motor type	3-phase AC motor
Nominal voltage	400 V
Minimum voltage allowed	360 V
Nominal frequency	50 Hz
Applicable for VFD operation	Yes
Ingress protection rating	IP 68
Insulation class	F

Model	Item number	Nominal power	Motor	Full load current (400 V)	Connection method	Start current (DOL)	cos phi	Efficiency
		[kW]	[rpm]	[A]	Y/Δ	[A]		[%]
AXP 500 5.5 kW-400 rpm	1804503	5.5	1,440	11.0	Δ	68	0.87	84.6
AXP 500 7.5 kW-400 rpm	1804507	7.5	1,455	15.0	Δ	90	0.83	86.2
AXP 500 11.0 kW-400 rpm	1804508	11.0	1,455	21.5	Δ	146	0.84	87.9
AXP 500 15.0 kW-475 rpm	1804515	15.0	1,465	29.0	Δ	212	0.84	88.7
AXP 500 18.5 kW-475 rpm	1804518	18.5	1,460	35.0	Δ	238	0.85	89.3

For voltages others than 400 V/50 Hz please refer to the attached Appendix.

OVERALL DIMENSIONS



Model	Item number	F [mm]	H [mm]	L1 [mm]	L2 [mm]	Weight [kg]
AXP 500 5,5 kW-400 rpm	1804503	155	1000	600	860	145
AXP 500 7,5 kW-400 rpm	1804507	230	985	655	925	180
AXP 500 11,0 kW-400 rpm	1804508	230	900	655	925	195
AXP 500 15,0 kW-475 rpm	1804515	265	930	720	980	260
AXP 500 18,5 kW-475 rpm	1804518	265	930	720	980	276

We reserve the right to make technical changes.

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Introduction

AXP is a horizontal submersible recirculation pump.

The pumping takes place by means of an electric motor coupled to the propeller by means of a planetary gear. In connection with service the unit must be hoisted. The oil chamber between the motor and the gear is in open connection with the gear, so the oil cools and lubricates the gear and the mechanical seal between the gear and the motor. The exterior sealing system consists of three lip seals with grease filled chambers in between. The following pages describe the connection and the maintenance of recirculation pumps type AXP.

Application

This recirculation pump is to be used for circulation/mixing of free-flowing slurry in channel systems. If the pump is to be applied for other purposes, contact Landia A/S for advice.

Important

Please note the following points:

- Only a certified electrician is allowed to connect the unit.
- Prior to installation and commissioning ensure that the equipment is installed correctly and fixed to the pump, as well as ensure that the equipment in the tank is fixed safely.
- The electrical cable is always to be tightened by means of the chain in order to prevent the cable from getting into contact with the propeller. The cable must be protected against sharp edges and outside the channel it must be led in a cable tray/pipe, min. Ø 110 mm. This will also make it easy to uninstall, e.g. in connection with service. Excess cable must be coiled outside the house.
- During operation the propeller of the recirculation pump must be min. 0.2 m below liquid level.
- Prior to hoisting the pump at service/repair it is always to be ensured that the electrical connection of the pump is switched off or locked. Prior to service/repair the pump should be cleaned thoroughly.
- When the pump is hoisted or lowered, it is always to be ensured that the cable is not slung around the motor.
- The recirculation pump must be connected to an automatic time-control, and on account of the toxic slurry gases (hydrogen sulphide), the recirculation pump must operate at least once every 24 hours.
- If the pump has not been in operation for more than two days and thus the slurry has not been mixed, you must be very careful with regard to slurry gases. Ventilation will then be necessary during pumping
- The recirculation pump must be installed in channel sections outside the building. Please note that national regulations for the design of slurry systems must be complied with.
- Prior to commissioning the channels must be clean and free of rope, wood, plastic etc. Our guarantee lapses if the recirculation pump is damaged due to foreign particles in the medium.

Note before commissioning

If the machine has been installed in an empty tank for more than 1 month - and with a possible risk that the machine has been exposed to high temperatures or direct sun – the grease in the propeller hub and oil level in the oil chamber must be checked/refilled. If the machine has been in storage for more than 3 months, the shaft must be rotated manually before start-up to ensure lubrication of the sealing system.

Service/repair

To maintain a high operating safety and a long service life without unnecessary and expensive repair it is important from the beginning to execute regular and preventive service. Maintenance should be carried out according to the intervals stated in the manual. Always follow the instructions carefully and only apply the parts described by Landia A/S in the spare parts list.

If you do not want to carry out the service yourself we can offer you a service agreement - please call for further information.

Please note

If spare parts not identical to the recommended parts are applied at service/repair, the guarantee from Landia A/S will be annulled. Spare parts can be ordered at Landia A/S or your local distributor.
For major repairs at a special workshop please contact:

Head Office:
LANDIA A/S
Industrivej 2
DK-6940 Lem St.
Tel.: +45 97 341244
info@landia.dk
www.landia.dk

UK subsidiary:
Landia (UK) Ltd.
Waymills Industrial Estate,
Whitchurch,
Shropshire SY13 1TT
Tel: + 44 01948 661 200
info@landia.co.uk
www.landia.co.uk

Landia A/S is represented by local distributors worldwide, please call for further information.

Rating plate

Landia DK-6940 Lem St. CE UKCA
 Type 3~mot.nr.
 V A
 Hz kW Ins.cl.
 Cos φ RPM kg
 Eff. cl. Year
 IP 68 Duty type S1

Type:	Unit type
3~mot.nr.:	Serial no.
V:	Connection voltage, star/delta
A:	Nominal power consumption at full load
Hz:	Net frequency
kW:	Max. shaft power
Ins.cl.:	Insulation class
Cos φ:	Power factor
RPM:	Motor revolutions per minute
Kg:	Weight of unit
Eff. cl.:	Efficiency class
Year:	Year of manufacture
IP:	Cage class
Duty type S1	Continuous working period

The rating plate states the motor's electrical data as well as the year of manufacture and the serial no. (3~Mot.nr.). With regard to maintenance of a specific unit please state serial no. when contacting Landia.

Power connection

Every recirculation pump is equipped with the above-mentioned rating plate with technical motor data. It must be secured that the other electrical parts correspond to the motor data. For each pump there is an electrical diagram. A protective motor switch must be applied at connection of the recirculation pump to the mains.

As standard, the recirculation pump is equipped with a thermal sensor as the pumps are often exposed to extremely difficult operation conditions. Therefore, the connection of the thermal sensor is very important. Thus, burning of the motor due to overheating can be avoided.

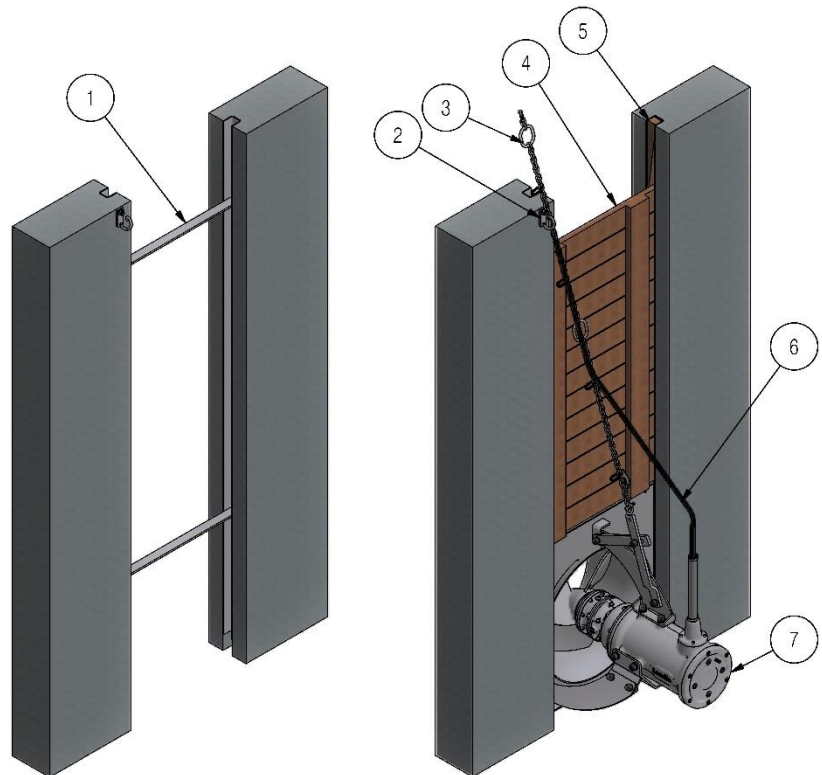
Softstarter and frequency converter

Improper motor connection and incorrectly connected/used softstarter or frequency converter can lead to faults in the machine's electric motor. Faults as a result are not covered by the machine's right of complaint.

Only a certified electrician is allowed to connect the unit.

Commissioning

- 1. Spacer
- 2. Hook for chain
- 3. Chain
- 4. Barrier boards
- 5. Wedge
- 6. Electrical cable
- 7. Recirculation pump



- Clean the channel.
- Remove spacers, pos. 1, bolts and concrete knots and install the recirculation pump, pos. 7.
- For setting the timer please see the additional instructions.
- Install the barrier boards, pos. 4 above the recirculation pump and for fixing install the wedge, pos. 5.
- Tighten the electrical cable, pos. 6, by means of the chain, pos. 3, in order to prevent the cable from touching the propeller.
- Check the propeller direction of rotation. See arrow on the recirculation pump.
- The liquid level and the mixing of the medium should be controlled every day.
- The recirculation pump must operate from day 1.
- Operation intervals must be determined in cooperation with Landia A/S or distributor.

Operation stop

Mechanical stop

- Hoist the recirculation pump for inspection
- Is the propeller blocked by impurities?
- If the medium does not move at pump operation:
 - Add water
 - Manual operation until good circulation is obtained in the channel.
 - Increase the operation time.
- For further information, please contact Landia A/S

Electrical stop

- Is the motor connected to the mains?
- Is the timer active?
- Is the motor protective switch/thermal sensor disconnected?

Troubleshooting

If the safety device has been released, the recirculation pump must not be re-started until the cause of the fault has been localized, e.g.:

- defective circuit breaker
- propeller blockage
- overheating of motor

The cooling period for overheated motors can be up to 1 hour.

If the recirculation pump vibrates: stop the unit and check for impurities at the propeller.

Capacity

The capacity of the recirculation pump will always depend on the consistency of the medium, the channel length and the outlet design.

Inspection

Regular inspection will ensure the recirculation pump a long life at low costs. The oil must be changed every 6 months/4,300 hours of operation, however, min. once a year. Under difficult operation conditions more often than every 6 months. If the screws are loose, they must be removed and lubricated with an adhesive substance, e.g. Loctite, before being reinstalled. See tightening torque for bolts on page 8 and for equipment on page 10.

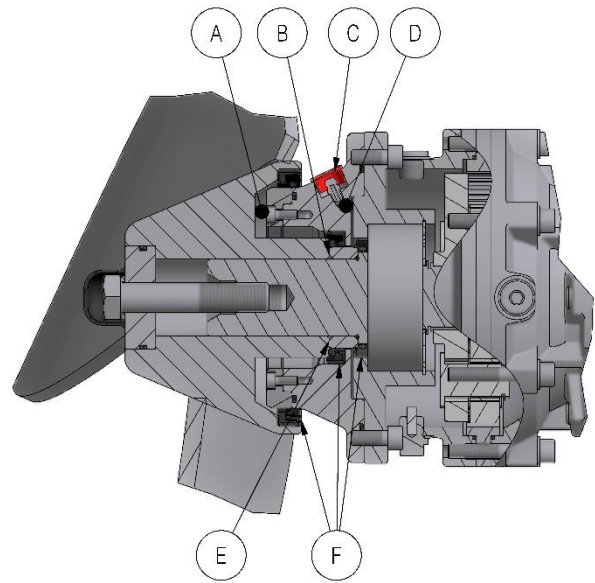
At inspection, the outer wear bush must be checked.

If the wear bush has deep traces, the propeller must be removed and a spacer can be installed between the interior wear bush and the propeller in order to move the wear area for the exterior wear bush. If it is impossible to move the wear area, either because it has been moved previously, or the wear area is too broad, a new wear bush must be installed.

Having removed the propeller, you must control the interior wear bush for wear traces. This wear bush can be turned once for a new wear area.

The oil sealing rings (incl. of springs) must be controlled for wear and changed, if necessary.

- A. Grease chamber
- B. Washer
- C. Grease nipple
- D. Grease chamber
- E. Wear bush
- F. Oil sealing rings



Oil Control

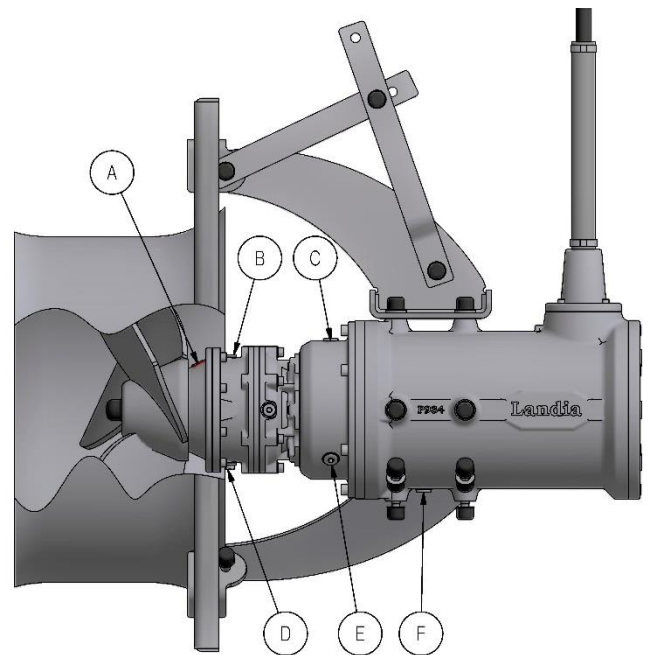
Control the oil by removing the upper oil plug pos. A on the oil chamber. The oil has to be clean and the level has to reach the level of the plug hole. Oil type: see spare parts list. If the oil is dirty, it must be changed.

- A. Stop screw/grease nipple
- B. Upper oil plug, gear
- C. Upper oil plug, oil chamber
- D. Lower oil plug, gear
- E. Lower oil plug, oil chamber
- F. Inspection screw

The oil is drained off by removing the plugs, pos. D and pos. E. In case of contaminated oil, check the seals and wear bushings.

During the filling of oil through oil plug, pos. C, the oil plug, pos. G, must be removed so that the venting of the gear is possible.

Grease the front sealing system (see parts list if necessary). Grease lubrication is done by removing the stop screw, pos. A, which is located just behind the propeller hub and the grease nipple is mounted, after which grease lubrication can take place.



Prior to reinstallation of the propeller, fill up the hub with grease.

The motor casing must be controlled in the following way:
 Remove the inspection plug, pos. F, beneath the motor. Any leakage of oil or liquid can be seen immediately. It will be necessary to check the seal in the oil chamber if abnormal leakage has occurred. In case of doubt, Landia can be contacted. If it is necessary to dry out the motor windings, contact a specialist workshop.

Equipment

The equipment should be controlled for wear and corrosion. If the screws are loose by up tightening them, they must be changed with new bolts. The new bolts must be greased with Loctite 275 or a tightening torque with the same attributes. See page 10.

Disassembling/assembling

A major repair should take place at a special workshop.

Please find below some general conditions regarding disassembling/assembling of Landia recirculation pump type AXP. The drawing attached to the spare parts list shows the construction of the unit. Not all parts can/should be uninstalled, e.g. do not press the rotor off the shaft.

When disassembling the unit, you must handle the mechanical seals with care as they are not shock resistant. Prior to reinstallation, all sealing surfaces must be cleaned; all O-rings must be checked and changed, if necessary. Adhesive substance (e.g. Loctite) must be applied on all bolt joints. All bolts are tightened with a tightening torque acc. to the table below.

Bolt sizes	Quality 10.9 - 12.9 Steel	Quality A4 kl. 80 St. steel
M6	14 Nm	10 Nm
M8	34 Nm	24 Nm
M10	67 Nm	48 Nm
M12*	115 Nm	82 Nm*
M16	160 Nm	137 Nm
M20	200 Nm	180 Nm
M30	620 Nm	620 Nm

* For equipment see page 10.

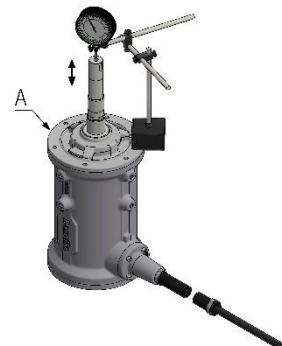
Note

The end cover, the oil chamber and the gear must be turned **anti-clockwise** as much as possible, seen from the end of the propeller, in order to balance the clearance in the bolt holes before the final tightening of the bolts.

After installing the bearing flange you must control the axial clearance as stated in the table below:

Motor series	Acceptable clearance
ms112	1.0 ± 0.05 mm
ms132	1.0 ± 0.05 mm
ms160	1.1 ± 0.05 mm

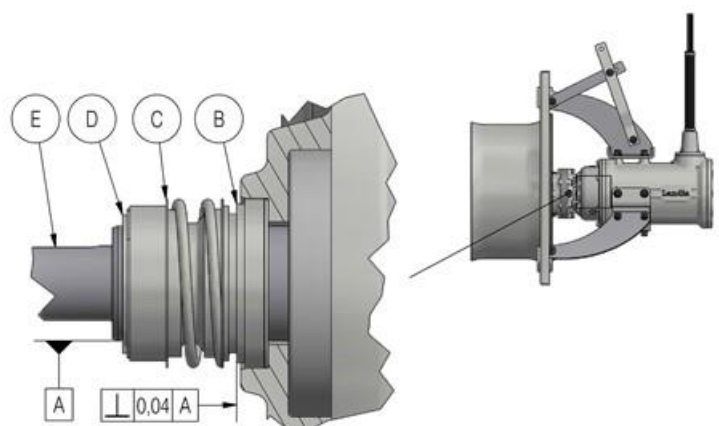
A. Bearing flange



Installation of mechanical shaft seals

When installing the mechanical shaft seals please be aware that these are precision products and that they should be handled as such. The slide faces must be protected during the installation.

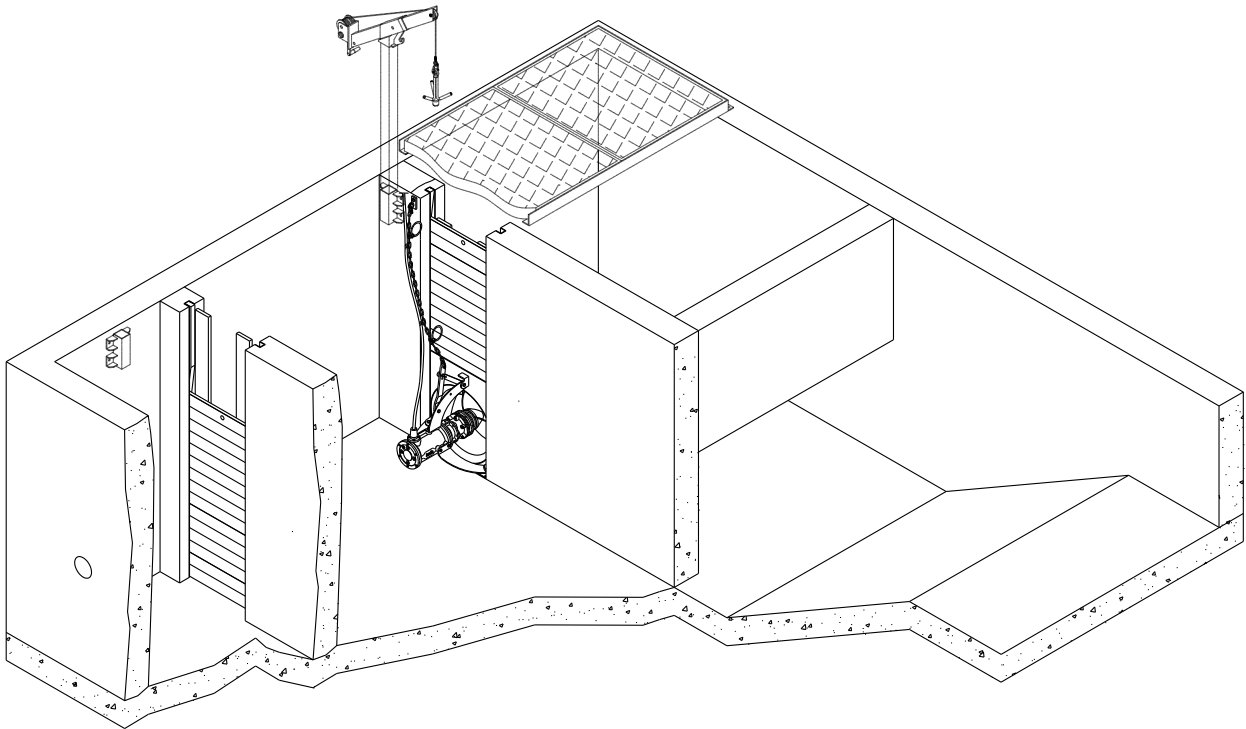
- B. Stationary sealing part
- C. Rotary sealing part
- D. Locking ring
- E. Shaft



Push the stationary sealing part into place. Be careful not to damage the slide face during installation.

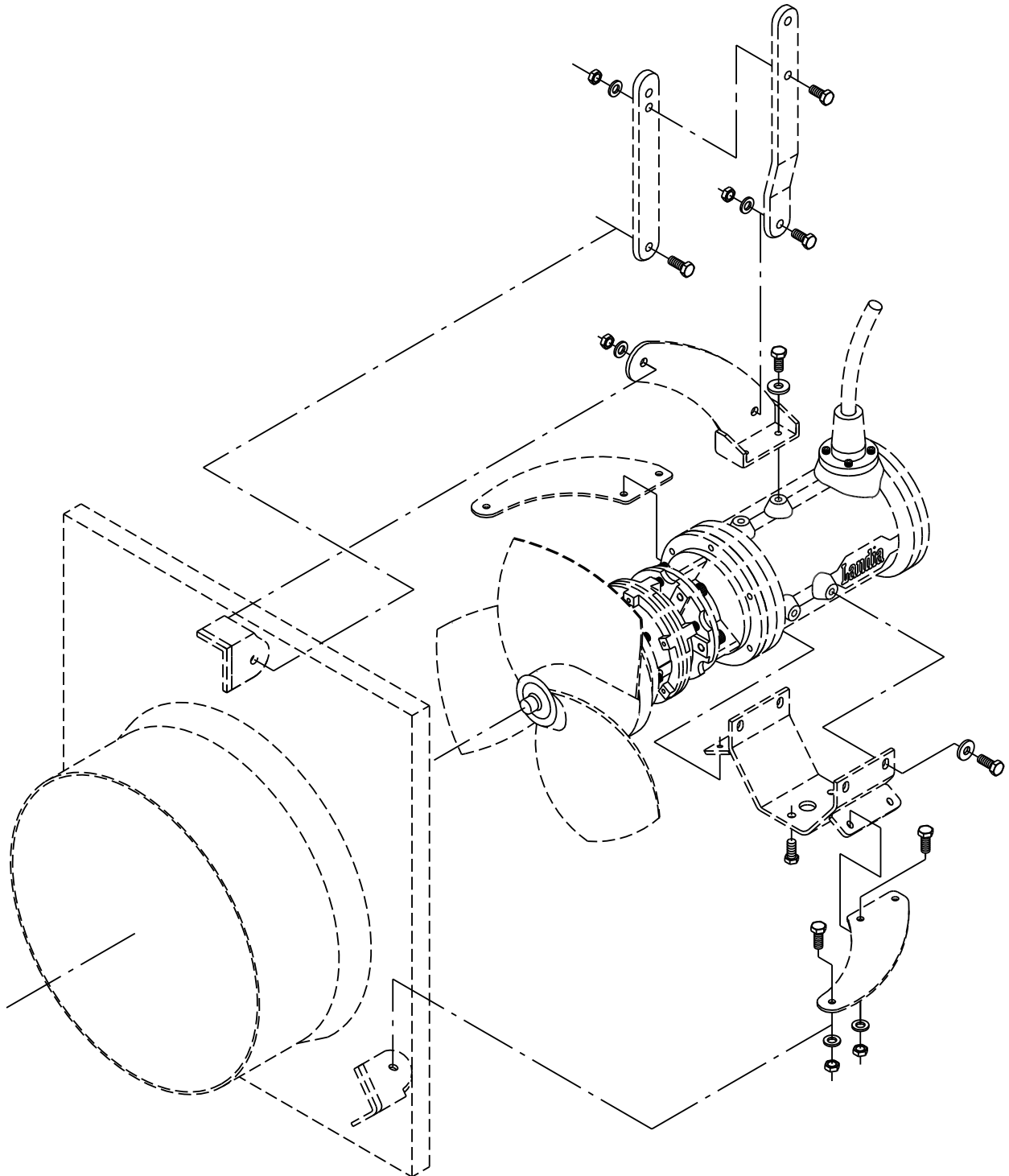
The rotating sealing part, pos. C, is put over the shaft. To ease the installation, put soap water on the interior side of the rubber bellows as well as on the shaft. Do not apply silicone, PTFE lubricants or oil as they will prevent the rubber bellows from sticking to the shaft. Installation arbor should be used. Put the locking ring, pos. D, on the shaft and press together the seal until the locking ring is installed in the locking ring track. Control the seal by turning the motor shaft.

Test the pump for leakage by putting the motor casing and the oil chamber under an overpressure. The overpressure needs to be approx. 1 bar. Leakage (air bubbles) must not appear. Oil is filled in the oil chamber/gear. During the filling, the pump must be in a horizontal position. Oil quantity: see spare parts list.



All bolts for equipment shown below must be changed by new bolts when reinstalling. Before installation, the new bolts must be greased with Loctite 275 or a tightening torque with the same attributes.

M12 bolts must be tightened with 130 Nm.



We reserve the right to technical alterations. Translated from Danish.

Konverteringsskema - Conversion table – Umrechnungstabelle - Tableau concernant**Olie - Oil - Öl**

CASTROL	Alpha SP 100	Alpha SP 220	Whitemore WOM 65	CRB Multi 15W-40	Hyspin HVI 15	Hyspin HVI 46D	Nevastane EP 100	Alphasyn GS 220
DIN-Norm / godkendelse	DIN 51502/DIN 51517 - CLP	DIN 51502/DIN 51517 - CLP	Ingen alternativer - No alternatives - Keine Alternativen - Pas d'alternative	Ingen alternativer - No alternatives - Keine Alternativen - Pas d'alternative	DIN 51502/ DIN 51524 - HVLP	DIN 51502-HVLP-D/ DIN 51524 - CLP	Ingen alternativer – No alternatives - Keine Alternativen - Pas d'alternative	DIN 51502/ DIN 51517 - CLP PG

Fedt - Grease - Fett - Graisse

BEL RAY	Bel Ray 50-2
CASTROL	Tribol GR 4747/220-2 HT
MOBIL	Mobilgrease FM 222
Q8	Rubens WB
SHELL	SHELL GADUS S3 V220C 2
TEXACO	Anderol 783-2
TOTAL	TOTAL NEVASTANE XMF 2

Smøremidler, som anvendes og anbefales af Landia A/S, er markeret med gråt i ovenstående skemaer. Konverteringsskemaerne angiver DIN-Norm / godkendelse på olietyper fra Castrol. DIN-Normen fra Castrol er vejledende og kan bruges til at finde en erstatningsolie hos Deres lokale olieleverandør. Hvis det ikke er muligt at finde en erstatningsolie, kan olien købes hos Landia A/S. Generelt bør blanding af forskellige fedttyper undgås enten ved udskiftning af al fedtet eller hyppig eftersmøring, så fedtet hurtigt udskiftes. Fedttyperne angivet ovenfor er blandbare.

Lubricants applied and recommended by Landia A/S are marked with grey in the above tables. The conversion schemes indicate the DIN Norms and the approved oil types from Castrol. The DIN Norm from Castrol is indicative and can be used to find a replacement oil from your local oil supplier. If it is not possible to find a replacement oil, the oil can be purchased from Landia A/S. Generally, mixing of different types of grease should be avoided either by replacing all the grease or frequent lubrication, so the grease is quickly replaced. The grease types mentioned above are mixable.

Das von Landia A/S empfohlene Schmiermittel, das verwendet werden muss ist in oben stehendem Schema mit grau markiert. Die Konvertierungsschemas zeigen die DIN-Normen und eine Übersicht der zugelassenen Öltypen von Castrol. Die DIN-Normen von Castrol sind indikativ und kann verwendet werden, um ein Ersatzöl von Ihrem lokalen Öllieferanten zu finden. Wenn es nicht möglich ist, ein Ersatzöl zu finden, kann das Öl von Landia A / S gekauft werden. Im Allgemeinen sollte Mischung von verschiedenen Schmiermitteln vermieden werden. Entweder das Fett wechseln oder häufig nachschmieren. Die oben genannte Fedttyper sind mischbar.

Les lubrifiants utilisés et recommandés par Landia A/S sont marqués d'un cri dans les tableaux ci-dessus. Les tableaux de conversion indiquent la norme DIN/approbation pour les types d'huile de Castrol. La norme DIN de Castrol est indicative et peut être utilisée pour trouver une huile de remplacement chez votre fournisseur d'huile local. S'il n'est pas possible de trouver une huile de remplacement, l'huile peut être acheté auprès de Landia. En général, il convient d'éviter de mélanger différents types de graisses en remplaçant toutes les graisses ou toutes les post-lubrifications fréquentes de manière à remplacer rapidement les graisses. Les types de graisse mentionnés ci-dessus sont miscibles.

Motordata for Landia motorer IE1
Side 1/1
3 x 400 Volt 50 Hz

Effekt kW	ms.	Poltal	RPM	Spænding trekant	Spænding stjerne	Strøm ved 3x400 V A	Strøm ved 3x690 A	Starts. direkte A	Cos phi %	Virk. grad fuld last %	Virk. grad 3/4 last %	Virk. grad 1/2 last %
1,5	80	2	2840	230	400	3,1	0	22	0,86	81,2	82,2	80,3
2,2	80	2	2850	230	400	4,6	0	34	0,85	82,1	83,4	81,9
3	90	2	2865	400	690	6,2	3,6	42	0,85	82,8	83,1	83,3
4	100	2	2900	400	690	8,4	4,9	59	0,81	84,9	85,5	84,4
5,5	100	2	2860	400	690	11	6,2	61	0,86	84,7	84,7	0
7,5	112	2	2890	400	690	15	8,6	99	0,85	86,1	86,1	84,1
11	132	2	2905	400	690	20,5	12	143	0,88	87,6	87,6	84,6
15	160	2	2940	400	690	27,5	16	195	0,89	88,7	88,7	85,8
18,5	160	2	2925	400	690	33	19,5	238	0,9	89,9	88,9	86,4
22	180	2	2935	400	690	39	22,5	265	0,9	90,5	90,5	86,7
30	180	2	2940	400	690	52,5	30,5	383	0,91	90,6	89,8	88,3
37		2	2940	400	690	65	37,50	455	0,9	91,5	90,5	89
45		2	2940	400	690	77,5	44,7	581	0,91	92	91,3	88,8
0,55	71	4	1400	230	400	1,6	0	7	0,69	71,9	70,7	64,1
0,75	71	4	1400	230	400	2,1	0	10	0,7	73,6	72,2	66,8
1,1	80	4	1410	230	400	2,6	0	14	0,79	76,7	76,8	73,6
1,5	80	4	1400	230	400	3,4	0	19	0,81	78,6	79,1	76,9
2,2	90	4	1410	230	400	5	0	30	0,8	80,2	80,7	79,5
3	100	4	1430	400	690	6,7	3,9	43	0,79	82,4	82,8	80,8
4	100	4	1435	400	690	8,8	5,1	61	0,78	84,1	85,1	83,6
5,5	112	4	1440	400	690	11	6,2	68	0,87	84,6	84,6	83,1
7,5	132	4	1455	400	690	15	8,8	90	0,83	86,2	85,2	83,8
11	131	4	1455	400	690	21,5	12,5	146	0,84	87,9	87,5	85,5
15	160	4	1465	400	690	29	17,00	212	0,84	88,7	88,3	85,8
18,5	160	4	1460	400	690	35	20,5	238	0,85	89,3	88,8	86,8
22	180	4	1465	400	690	43	25	280	0,82	90,1	90,1	88,6
30	180	4	1465	400	690	57	33	399	0,84	90,7	90,2	89,2
37		4	1470	400	690	68	39,2	476	0,86	91,2	90,2	89,2
45		4	1470	400	690	82,5	47,6	578	0,86	91,7	91,2	89,7
0,55	50	8	695	230	400	2	0	7	0,6	64,8	62,5	55,8
0,75	50	8	705	230	400	2,7	0	9	0,6	66,8	64,7	57,9
1,1	50	8	705	230	400	3,3	0	13	0,67	72,9	73,3	69,6
1,5	50	8	705	230	400	4,1	0	18	0,7	75,4	75,7	72,4
2,2	50	8	705	230	400	5,6	0	25	0,75	75,6	75,1	72,1
3	50	8	705	400	690	7,4	4,3	33	0,75	78	78	75
4	50	8	710	400	690	9,3	5	37	0,78	79,6	79,3	77,3
5,5	50	8	710	400	690	12,5	7,2	56	0,78	81,4	81	78
7,5	50	8	725	400	690	18	10,5	81	0,71	84,7	84,7	81,7
11	50	8	720	400	690	24	14	108	0,78	84,8	83,8	81,3

Motordata for Landia motorer IE2
Side 1/1
3 x 400 Volt 50 Hz

Effekt kW	ms.	Poltal	N rpm	Spænding trekant V	Spænding stjerne V	Strøm ved 3x400 V A	Strøm ved 3x690 A	Starts. direkte A	Cos phi ϕ	Virk. grad fuld last %	Virk. grad 3/4 last %	Virk. grad 1/2 last %
1,5	90	2	2910	230	400	2,9	0	34	0,87	81,3	85,5	82,9
2,2	90	2	2880	230	400	4,25	0	34	0,88	83,2	85,7	83,9
3	100	2	2930	400	690	6,55	3,8	56	0,76	84,6	86,2	83,5
4	100	2	2920	400	690	7,9	4,6	66	0,84	85,8	86,4	85,8
5,5	112	2	2900	400	690	10,3	5,9	80	0,88	87	88,7	88,8
7,5	132	2	2925	400	690	13,5	7,8	90	0,91	88,8	89,2	88,3
11	160	2	2950	400	690	19,5	11,3	150	0,9	90,3	90,3	89,1
15	160	2	2940	400	690	26	15,0	230	0,92	90,7	90,5	89,1
18,5	160	2	2935	400	690	32	18,5	230	0,91	91	91,4	91,4
22	180	2	2935	400	690	38,5	22,2	239	0,9	91,3	90,6	86,4
30	180	2	2945	400	690	52	30,0	359	0,91	92	91,3	90,5
37	180	2	2940	400	690	63	36,4	466	0,92	92,5	92,3	91,6
0,55	80	4	1430	230	400	1,25	0	8	0,8	79,4	79,6	78,7
0,75	80	4	1430	230	400	1,65	0	12	0,81	79,6	81,4	79,6
1,1	90	4	1435	230	400	2,4	0	16	0,8	81,4	82,3	80,4
1,5	100	4	1455	230	400	3,35	0	45	0,77	82,8	83,2	80,7
2,2	100	4	1455	230	400	4,8	0	45	0,77	84,3	85,2	81,7
3	112	4	1460	400	690	6,5	3,8	63	0,77	85,5	86,3	84,5
4	112	4	1460	400	690	7,6	4,4	63	0,86	87,6	88	86,9
5,5	132	4	1470	400	690	10,5	6,1	123	0,87	88,4	89,3	89
7,5	132	4	1470	400	690	14,5	8,4	123	0,82	89,9	90	88,5
11	160	4	1470	400	690	22,5	13,0	176	0,78	90,3	90,3	88,9
15	180	4	1475	400	690	28,5	16,5	307	0,83	91	90,4	89
18,5	180	4	1475	400	690	35,5	20,5	307	0,82	91,2	90,6	89,3
22	180	4	1475	400	690	42	24,2	307	0,83	91,6	91,4	89,9
0,55	80	6	950	230	400	1,5	0	6	0,69	76,5	76,1	72,6
0,75	90	6	955	230	400	1,95	0	10	0,71	75,9	78,3	75,1
1,1	100	6	955	230	400	2,75	0	15	0,71	78,1	82	79,3
1,5	112	6	955	400	690	3,55	0	50	0,75	81	80,5	79,6
2,2	112	6	955	400	690	5,2	0	50	0,74	82,8	82,5	80
3	112	6	955	400	690	7,1	4,1	50	0,73	83,3	83,1	80,5
4	132	6	965	400	690	8,5	4,9	43	0,79	85,5	85,5	83,8
5,5	160	6	970	400	690	12	6,9	91	0,76	87	86,4	85,8
7,5	160	6	970	400	690	15,5	8,9	91	0,79	87,5	87,6	85,9
11	180	6	975	400	690	21	12,1	177	0,84	89,2	87,9	86,3
15	180	6	975	400	690	28,5	16,5	177	0,84	89,7	88,8	86,7
18,5	180	6	980	400	690	35	20,2	231	0,85	90,4	88,8	86,5

Motordata for Landia motorer IE3

Side 1/1

3 x 400 Volt 50 Hz

Effekt	ms.	Poltal	N	Spænding trekant	Spænding stjerne	Strøm ved 3x400 V	Strøm ved 3x690	Starts. direkte	Cos phi	Virk. grad fuld last	Virk. grad 3/4 last	Virk. grad 1/2 last
kW			rpm	V	V	A	A	A	φ	%	%	%
1,5	100	4	1455	230	400	3,4	-	32,3	0,75	85,3	84	80,6
4	112	4	1465	400	690	7,9	4,6	74,3	0,82	88,6	88,9	87,4
7,5	132	4	1470	400	690	16	9,2	121,6	0,75	90,5	90,5	89,2
11	160	4	1465	400	690	21	12,1	147	0,82	91,4	91,4	91,5
18,5	180	4	1475	400	690	34,5	19,9	269,1	0,84	92,6	92,7	91,9
4	132	6	965	400	690	8,3	4,8	39,9	0,8	86,8	87	86
7,5	160	6	975	400	690	14,5	8,4	84,1	0,82	89,6	89,4	87,8