



রুরাল পাওয়ার কোম্পানী লিমিটেড
RURAL POWER COMPANY LIMITED

TENDER DOCUMENT
FOR PROCUREMENT OF WORKS
[REQUEST FOR QUOTATION METHOD]
[NATIONAL]

Tender Package Name : Replacement of Alternator Poles (2 Nos) of DG#1 at Raozan 25MW Dual Fuel Power Plant.

Invitation Reference : Pur-078(LW/RPP/RFQ)/2021-2022
Issued on: 12-Jan-2022
Tender Package No: 01
Tender Lot No: 01

Submission Deadline : 20-Jan-2022; 12:00 BST.

Tender Inviting Official : Md. Ashraf Hossain
Chief Engineer (O&M)
Rural Power Company Ltd.
House# 19, Road# 1/B, Sector # 9
Uttara Model Town, Dhaka-1230

Corporate Office

House: 19, Road: 1/B, Sector: 09,
Uttara Model Town, Dhaka-1230,
Bangladesh.

REQUEST FOR QUOTATION
for
Replacement of Alternator Poles (2 Nos) of DG#1 at Raozan 25MW Dual Fuel Power Plant.

RFQ No: Pur-078(LW/RPP/RFQ)/2021-2022

Date: 12/01/2022

To
[insert name and address of the Quotationers]

1. The **Rural Power Company Limited (RPCL)** has been allocated public funds and intends to apply a portion of the funds to eligible payments under the Contract for which this Quotation Document is issued.
2. Quotation is being requested on **Lump-sum** basis.
3. Quotation shall be completed properly, duly signed-dated each page by the authorized signatory and submitted by the date to the office of the undersigned person.
4. No Securities such as Quotation Security (i.e. the traditionally termed Earnest Money, Tender Security) and Performance Security shall be required for submission of the Quotation and execution of the Works (if awarded) respectively.
5. Quotation in sealed envelope or by fax or through electronic mail shall be submitted to the office of the undersigned **on or before 20-Jan-2022; 12:00 BST**. The envelope containing the Quotation must be clearly marked "Quotation for **Replacement of Alternator Poles (2 Nos) of DG#1 at Raozan 25MW Dual Fuel Power Plant** and **DO NOT OPEN** before **20-Jan-2022; 12:00 BST**. Quotations received later than the time specified herein shall not be accepted.
6. Quotations received by fax or through electronic mail shall be sealed-enveloped by the Procuring Entity duly marked as stated in **Para 5** above and, all Quotations thus received shall be sent to the Evaluation Committee for evaluation, without opening, by the same date of closing the Quotation.
7. Quotation shall be submitted as per Bill of Quantities and Scope of Works.
8. All Quotations must be valid for a period of at least **60 days** from the closing date of the Quotation.
9. No public opening of Quotations received by the closing date shall be held.

10. Quotationer's rates or prices shall be inclusive of profit and overhead and, all kinds of taxes, duties, fees, levies, and other charges to be paid under the Applicable Law, if the Contract is awarded.
11. Rates shall be quoted and, subsequent payments under this Contract shall be made in Taka currency. The price offered by the Quotationer, if accepted shall remain fixed for the duration of the Contract.
12. Quotationer shall have legal capacity to enter into Contract. Quotationer, in support of its qualification shall be required to submit certified photocopies of latest documents related to valid **Trade License, Tax Identification Number (TIN), VAT Registration Number and Financial Solvency Certificate** from any scheduled Bank; without which the Quotation may be considered non-responsive.
13. In case of anomalies between unit rates or prices and the total amount quoted, in the quotation submitted on unit rate basis, the unit rates or prices shall prevail. In case of discrepancy between words and figures, the former will govern. In case of quotation submitted on Lump-sum basis, if anomalies found between figures and words, the words will prevail. Quotationer shall remain bound to accept the arithmetic corrections made by the Evaluation Committee.
14. The execution of Works and physical services shall be completed within **20** days from the date of commencement.
15. Letter inviting the successful Quotationer to sign the Contract shall be issued within **07** days of receipt of approval from the Approving Authority. The Contract shall have to be signed within **07** days of issuing such Letter of Invitation.
16. The Procuring Entity reserves the right to reject all the Quotations or annul the procurement proceedings.

(Md. Ashraf Hossain)

Chief Engineer (O&M)

Rural Power Company Ltd.

Email : ashraf_rpcl@yahoo.com

Tel : 02-58951759, Mobile: 01717341916

Cc:

1. Managing Director, RPCL, Dhaka.
2. Executive Director (Engg./Finance), RPCL, Dhaka.
3. Executive Engineer & Plant In-charge, RPP, Chattogram.
4. Deputy Manager (ICT), RPCL, Dhaka [Please upload the RFQ document to RPCL website].
5. Office file.

Distribution:.....

SCOPE OF WORKS

- 1.1 Mobilize team with necessary structures, tools/ supports, special tools & tackles & lifting, shifting and handling equipment to RPCL Raozan 25.5MW power plant at Raozan, Chattogram.
- 1.2 Decouple the DG#1 Alternator (AMG 1120MP08 11155 KVA, 11 KV, ABB) from engine and Shift/ Rig out the faulty alternator from base frame to outside of engine hall.
- 1.3 Dismantling, checking and reassembling of alternator bearing(s).
- 1.4 Remove the coupling hub from the rotor shaft and dismantle the Alternator under.
- 1.5 Cut poles connections, carry out incoming test to find out the faulty poles.
- 1.6 Remove the faulty poles (02 Nos) from the rotor with extreme care without any damage so that pole fixing bolts can be reused.
- 1.7 Disconnect pole connections of already dismantled rotor of DG#3, carry out incoming test to find out 02 Nos good poles and remove good poles from the rotor.
- 1.8 Fix the 02 Nos good poles on the DG#1 rotor by proper Tightening torque.
- 1.9 Reconnections of pole cables, Brazing, Insulation & varnishing.
- 1.10 Check rotor insulation resistance & carry out voltage drop test and provide report.
- 1.11 Re-assemble the alternator including fitting of coupling hub on the rotor shaft.
- 1.12 Shift/ Rig the assembled alternator to the common base frame of DG#1 and couple with engine and alignment.
- 1.13 Installation of the Control cables, Check & adjustment of Alternator alignment.
- 1.14 Clean the alternator windings with dry air, CO₂, acetone etc.
- 1.15 Varnishing of alternator windings.
- 1.16 Arrange heating of alternator windings with heating blower (if necessary).
- 1.17
 - (a) Measurement of weights of the removed poles and poles to be installed in order to avoid possible vibration of the rotor.
 - (b) Measurement of weights of the removed bolts and bolts to be installed for the same purpose as mentioned in 1.15(a).

- 1.18 In case of any additional pole(s) required to be replaced, additional costs will be fixed by amicable negotiations with the contractor.
- 1.19 All necessary consumables for successful completion of the works have to be arranged by the contractor.
- 1.20 Carry out pre-commissioning & commissioning of the alternator, no load condition running and synchronizing, Loading at different loads and measurement of electrical & mechanical data of the machine and provide final report.
- 1.21 The Contractor has to perform the works within the purview of this scope of works under the supervision of Wartsila Bangladesh/ ABB Ltd./ own expert. Tenderers offering supervision of works by other than Wartsila/ ABB, have to submit CV(s) with experience certificates of the proposed expert(s) along with the Tender.

Note: RPCL will provide the followings:

1. A temporary shade outside engine hall for doing refurbishment works.
2. Accommodation with applicable rent.
3. Disconnection of power, earthing & control cables.
4. Reinstallation of power & earthing cables.
5. Installation of the air outlet duct and ventilation system.
6. Necessary water, electricity, dry air available at plant.

NOT FOR SUBMISSION

Quotation Submission Letter

[Use Letter-head Pad]

RFQ No: _____

Date: dd/mm/yy

To:

[Name and address of Procuring Entity]

I/We, the undersigned, offer to execute in conformity with the Conditions of Contract for execution of the Works and physical services named *[insert name of work]*

The total Price of our Quotation is *[insert amount both in figure and words]*

My/Our Quotation shall remain valid for the period stated in the RFQ Document and it shall remain binding upon us and, may be accepted at any time prior to the expiration of its validity period.

I/We declare that I/we have the legal capacity to enter into a contract with you, and have not been declared ineligible by the Government of Bangladesh on charges of engaging in corrupt, fraudulent, collusive or coercive practices. Furthermore, I/we am/are aware of Para 28(e) of the Conditions of Contract and pledge not to indulge in such practices in competing for or in executing the works.

I/We am/are not submitting more than one Quotation in this RFQ process in my/our own name or other name or in different names. I/We understand that your written invitation to sign the Contract shall become binding upon us, until a formal Contract is signed.

I/We have examined and have no reservations to the RFQ Document issued by you on *[insert date]*

I/We understand that you reserve the right to reject all the Quotations or annul the procurement proceedings without incurring any liability to me/us.

Signature of Quotationer with Seal

Date:

Bill of Quantities

Item No.	Description of Works	Unit	Quantity	Unit rates or prices quoted by the Quotationer (Taka)		Total Amount (Taka)
				In figures	In words	
1	2	3	4	5	6	7 = 4x5
1	Replacement of faulty poles (2 Nos) of DG#1 alternator rotor with poles dismantling from DG#3 (already removed rotor) at Raozan 25MW Dual Fuel Power Plant and re-commissioning.	Lot	01			
					Total Amount (in figure and words)	

[insert number] number corrections made by me/us have been duly initialed in this page of BoQ. My/Our Offer is valid until dd/mm/yy [insert Quotation Validity date].

Signature of the Quotationer with Seal

Date :dd/mm/yy

NOT FOR SUBMISSION

[name and address of the Procuring Entity]

Invitation for signing Contract

[Rule 72 (5) of PPR, 2008]

RFQ No._____

Ref:
To:

Date: dd/mm/yy

[name of Contractor _____]
[address _____]

This is to notify you that your **Quotation** dated [dd/mm/yy] for the execution of the Works and physical services named [insert name of work] for the Contract Price of Tk [state amount in figures and in words] as corrected, has been approved by the competent authority.

You are thus requested to attend the office of the undersigned to sign the Contract within [insert days] of issuing this Letter of Invitation; but in no case later than [specify dd/mm/yy].

You may proceed with the execution of the Works only upon signing the Contract. You may also please note that this invitation shall constitute the formation of this Contract which shall become binding upon you.

We attach the draft Contract and all other documents for your perusal.

Attachment: Draft Contract

Signature of the Procuring Entity with name
and designation
Date: dd/mm/yy

NOT FOR SUBMISSION

Contract Agreement

THIS AGREEMENT made on this **[insert day]** day of **[insert month and year]** between **[name and address of Procuring Entity]** (hereinafter called “the Procuring Entity”) of the one part and **[name and address of Contractor]** (hereinafter called “the Contractor”) of the other part:

WHEREAS the Procuring Entity invited Quotation for certain Works and physical services named **[insert name of Works]** and has accepted the Quotation submitted by the Quotationer for the execution of those works in the sum of Taka **[insert Contract price in figures and in words]** (hereinafter called “the Contract Price”).

NOW THIS AGREEMENT WITNESSED AS FOLLOWS:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the General Conditions of Contract hereinafter referred to.
2. The documents forming the Contract shall be interpreted in the following order of priority:
 - (a) the signed Contract Agreement
 - (b) the Letter of Invitation
 - (c) the Conditions of Contract
 - (d) the Specifications
 - (e) the Design and Drawings
 - (f) the priced Bill of Quantities
 - (g) any other document listed anywhere in the Contract.
3. In consideration of the payments to be made by the Procuring Entity to the Contractor as hereinafter mentioned, the Contractor hereby covenants with the Procuring Entity to execute and complete the works and to remedy any defects therein in conformity in all respects with the provisions of the Contract.
4. The Procuring Entity hereby covenants to pay the Contractor in consideration of the execution and completion of the works and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with the laws of Bangladesh on the day, month and year first written above.

For the Procuring Entity

For the Contractor

Signature

Name

Designation

National ID No.

In the presence

of

Name

Terms and Conditions of Contract

1. Conditions of Contract contained herein shall be binding upon both the contracting parties for the purpose of administration and management of this Contract.
2. Implementation and interpretation of these Conditions of Contract shall, in general, be under the purview of the Public Procurement Act, 2006 and the Public Procurement Rules, 2008.
3. The Contractor shall have to commence the Works within **07** days of signing of the Contract Agreement and complete in conformity in all respects with the provisions of the Contract within **20** days.
4. The Contractor shall immediately submit to the Procuring Entity a Programme of Works showing the timing for all the activities and components of Works.
5. The Contractor shall maintain Pro Rata progress of the Works. Progress shall be determined in terms of the value of the works executed.
6. The Contractor shall be entitled to an extension of the Intended Completion Date if the Procuring Entity delays in handing over the Site or if Force Majeure situation occurs or for any other reasons acceptable to the Procuring Entity on justifiable grounds duly recorded.
7. The Procuring Entity shall check and verify the Works executed by the Contractor and notify the Contractor of any Defects found.
8. Notwithstanding any testing and examination, the Procuring Entity by visual inspection or field tests may instruct the Contractor to:
 - a. remove and replace any works or part thereof which is not in accordance with the Contract,
 - b. remove and re-execute any other work or part thereof which is not in accordance with the Contract, and
 - c. execute any work which is urgently required for the safety of the Works.
9. The Contractor shall submit to the Procuring Entity the progressive invoices for estimated value of works executed less the cumulative amount certified previously.
10. The Contractor shall be entirely responsible for payment of all taxes, duties, fees, and such other levies under the Applicable Law.

11. **Payment Terms:**

100% percent payment shall be made through Account Payee Cheque on completion of 100% of the Works duly certified by the Project Manager supported by the Work Completion Certificate which issued by Project Manager.

12. The Contractor's rates or prices shall be inclusive of profit and overhead and, all kinds of taxes, duties, fees, levies, and other charges to be paid under the Applicable Law.

13. The total Contract Price is BDT [insert figure] BDT [in words].

14. No works under Extra Work Orders shall be permissible and, works under Variation Orders (except in case of Lump-sum basis) shall under no circumstances exceed fifteen (15) percent of the Contract Price subject to threshold specified in Rule 69 (1) and 69 (6) (ka) & (ga) of the Public Procurement Rules, 2008, as appropriate.

15. The Procuring Entity contracting shall amend the Contract incorporating required approved changes subsequently introduced to the original Conditions of Contract in line with Rules, where necessary.

16. The Procuring Entity shall retain ten (10) percent as Retention Money (i.e. the traditional Security Deposit) until completion of the whole of the Works under the Contract.

17. The Contractor shall apply by notice to the Procuring Entity for issuing a Completion Certificate of the Works, and the Procuring Entity shall do so upon deciding that the work is completed.

18. The Procuring Entity shall, within seven (7) working days after receiving the Contractor's application:

a. issue the Completion Certificate to the Contractor stating that the Works were completed in accordance with the Contract, or

b. reject the application, giving reasons and specifying the works required to be done/redone by the Contractor to enable issuance of the Completion Certificate.

19. The Defects Liability Period of the Works (Workmanship) shall be **06 months** starting from the date of issuing the Completion Certificate by the Procuring Entity.

20. After the Defects Liability Period has passed and, the Procuring Entity has certified in the form of **Defects Corrections Certificate** that all Defects notified by the Procuring Entity to the Contractor before the end of this period have been corrected.

21. The Defects Liability Period may be extended for as long as the Defects notified by the Procuring Entity remain to be corrected.

22. If the Contractor has not corrected a Defect within the time specified in the Procuring Entity's notice, the Procuring Entity shall assess the cost of having the Defects corrected by it, and the Contractor shall remain liable to pay the expenditures incurred on account of correction of such Defects.
23. The amount of Liquidated Damages for the uncompleted Works or any part thereof is 0.10 of ONE (1) percent of its Contract price per day of delay. The maximum amount of Liquidated Damages for the uncompleted Works or any part thereof is TEN (10) percent of the final Contract price of the whole works.
24. The Contractor shall keep the Procurement Entity harmless and indemnify from any claim, loss of property or life to himself/herself, his/her workmen or staff, any staff of the Procurement Entity or any third party while executing the work. Any claim arising out of execution of the works shall be settled by the Contractor at his/her own cost and responsibility.
25. Loss or damage to the Works or Materials to be incorporated in the Works between the Start Date and the end of the Defects Liability Period shall be remedied by the Contractor at the Contractor's own cost, if the loss or damage arises from the Contractor's acts or omissions.
26. The Retention Money shall be returned to the Contractor within twenty one (21) days after expiry of the Defects Liability Period.
27. The Procuring Entity may, by written Notice sent to the Contractor, terminate the Contract in whole or in part at any time, if the Contractor:
- a) fails to sign the Contract or commence the Work within the specified time.
 - b) fails to achieve satisfactory progress of Works in accordance with the Programme of Works.
 - c) fails to complete the Work as per design, drawing and specifications.
 - d) after receipt of a written notice from the Procuring Entity does not remedy its failure within the time period specified therein.
 - e) in the judgement of the Procuring Entity, has engaged in any corrupt, fraudulent, collusive or coercive practices in competing for or in executing the Work.
 - f) fails to perform any other obligation(s) under the Contract.
28. The Procuring Entity and the Contractor shall use their best efforts to settle amicably all possible disputes arising out of or in connection with this Contract or its interpretation.
29. The Contractor shall be subject to, and aware of provision on corruption, fraudulence, collusion and coercion in Section 64 of the Public Procurement Act, 2006 and Rule 127 of the Public Procurement Rules, 2008.

Specifications Design and Drawings

1 PERFORMANCE DATA (Calculated values)

TYPE

Type designation: AMG 1120MP08 DSE

RATINGS

Output:	11155	kVA	Direction of rotation		
Duty:	S1		(Facing drive end):	CCW	
Voltage:	11000	V	Weight:	29100	kg
Current:	586	A	Inertia:	2350	kgm ²
Power factor:	0,80		Protection by enclosure:	IP23	
Frequency:	50	Hz	Cooling method:	IC0A1	
Speed:	750	rpm	Mounting arrangement:	IM1101	
Overspeed:	900	rpm			

STANDARDS

Applicable standard:	IEC
Marine classification:	None
Hazardous area classification:	None
Temperature rise stator / rotor:	F/F
Insulation class:	F

ENVIRONMENTAL CONDITIONS (max. values)

Ambient temperature:	50	°C	Altitude:	1000	masl
Coolant temperature:		°C			

ASSUMED DATA

Driving equipment:	Wärtsilä 20V32
Appr. mec. power:	9150 KW

EFFICIENCY in %

	load:	110	%	100	%	75	%	50	%	25	%
Efficiency @ power factor 0,80		97,48		97,53		97,54		97,24		95,71	
Efficiency @ power factor 1,00		98,14		98,17		98,17		97,92		96,66	

REACTANCES in %

XD (U):	217,9	XD' (S):	31,0	XQ'' (S):	22,5	X0 (U):	11,7
XQ (U):	109,3	XD'' (S):	20,0	X2 (S):	21,2	XP (S):	25,6
X1 (U):	17,1	(S) = Saturated value, (U) = Unsaturated value					

TIME CONSTANTS (SEC.) AT 75 °C

TD0':	8,250	TD':	1,291	TQ0'':	0,1348	TA:	0,134
TD0'':	0,02413	TD'':	0,01567	TQ'':	0,0305		

RESISTANCES AT 20 °C

Stator winding:	0,0495	Ω	Field winding:	0,7782	Ω
Excitation winding:	5,7	Ω			

SHORT CIRCUIT

Short circuit ratio:	0,51	
Sustained short circuit current:	1,5	p.u. (rated excitation)
	> 2.5	p.u. (voltage regulator)
Sudden short circuit current:	2950	A (symmetric RMS)
	7450	A (peak value)

VOLTAGE VARIATION

Maximum allowed amount of starting load:

Maximum voltage drop	Power factor	Load
15 %	0.1	5050 kVA
15 %	0.4	5500 kVA
15 %	0.8	9000 kVA
20 %	0.1	7050 kVA
20 %	0.4	7700 kVA

Voltage drop at sudden increase of rated load:	19	%
Voltage rise at sudden drop of rated load:	25	%

REACTIVE LOADING

Steady state reactive loading at rated excitation:	9500	KVAR (lagging)
Steady state reactive loading at zero excitation:	3650	KVAR (leading)

TORQUE

Rated load torque (Calculated of rated output in kVA): 142000 Nm

The peak values of sudden short circuit air gap torques:

2-phase short circuit:	625	%	3-phase short circuit:	445	%
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BEARINGS

D-end: Sleeve, self lubricated, locating	N.D-end: Sleeve, self lubricated, free
Oil viscosity: ISO VG 46	

TERMINAL CONNECTIONS (Defined facing drive end)

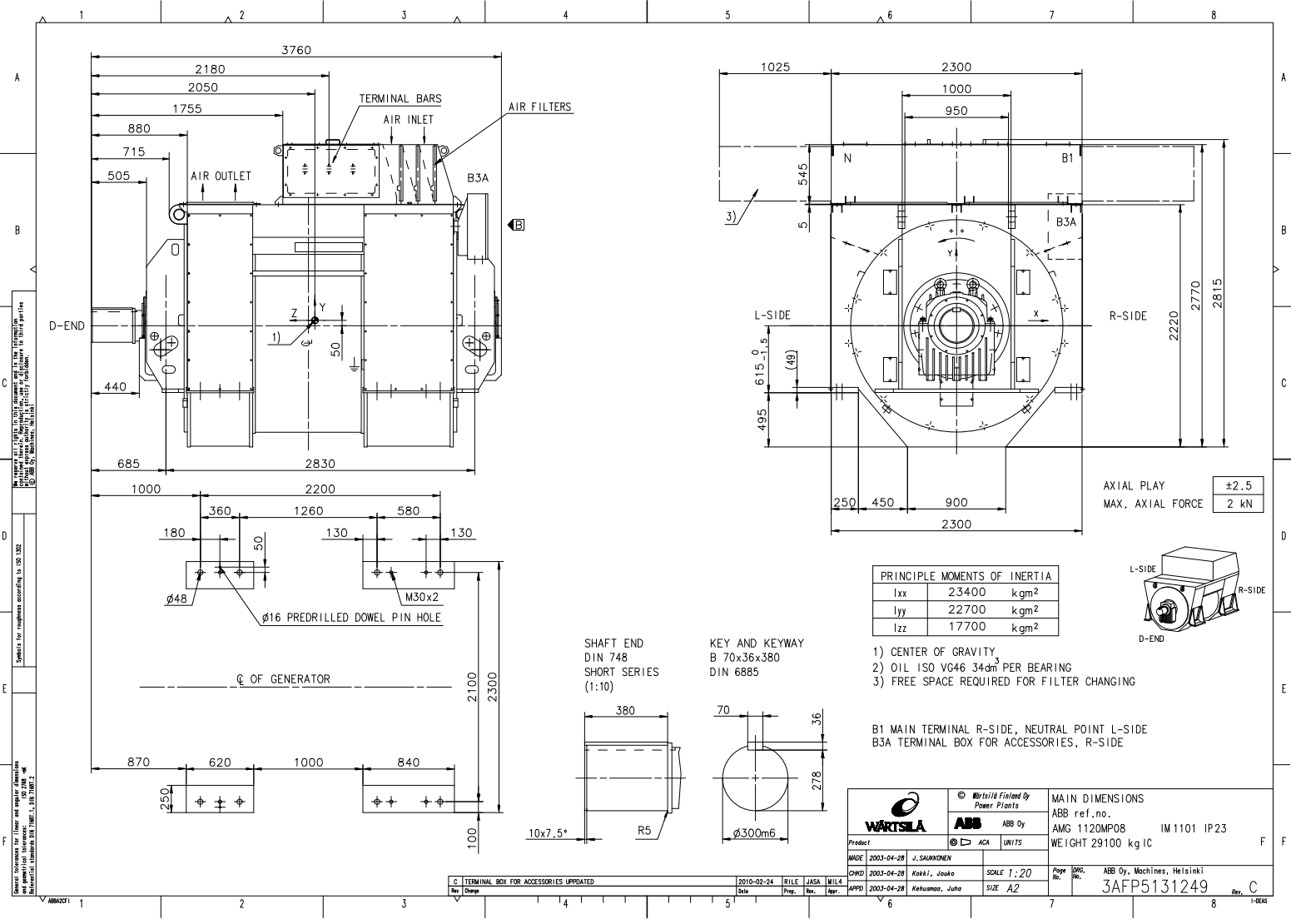
Direction of main connection:	Right down
Direction of zero connection:	Left down

EXCITATION

	Exciter field			
No load:	3,2	A	23,4	V
Rated load:	8,6	A	62,8	V

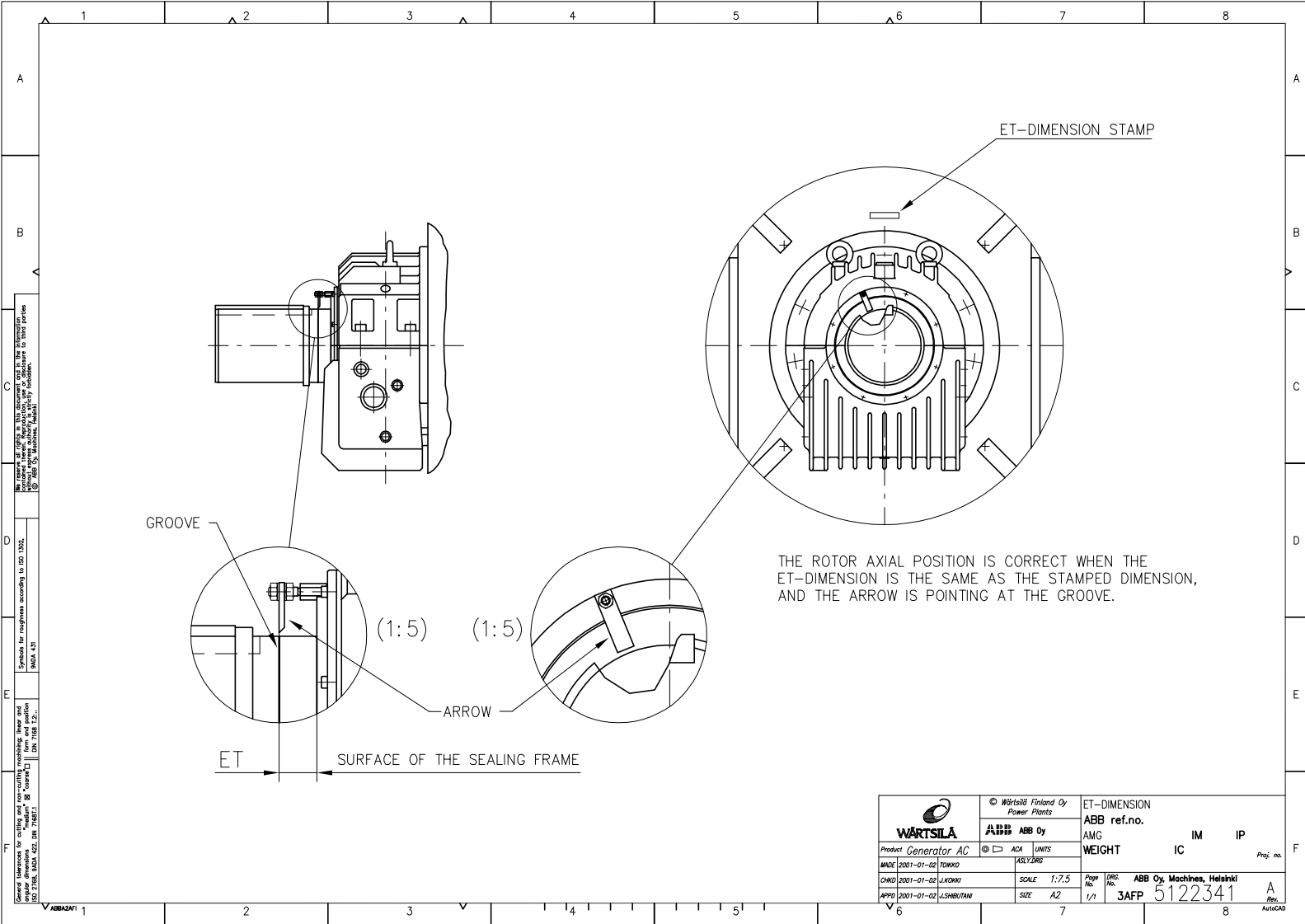
OTHER

Stored energy constant (rotative energy divided by rated effect): 0,65 s
Earth capacitance (1-phase): 0,11 μF



General dimensions for design and regular dimensions for production tolerances according to ISO 2002
 General dimensions for design and regular dimensions for production tolerances according to ISO 2002
 General dimensions for design and regular dimensions for production tolerances according to ISO 2002

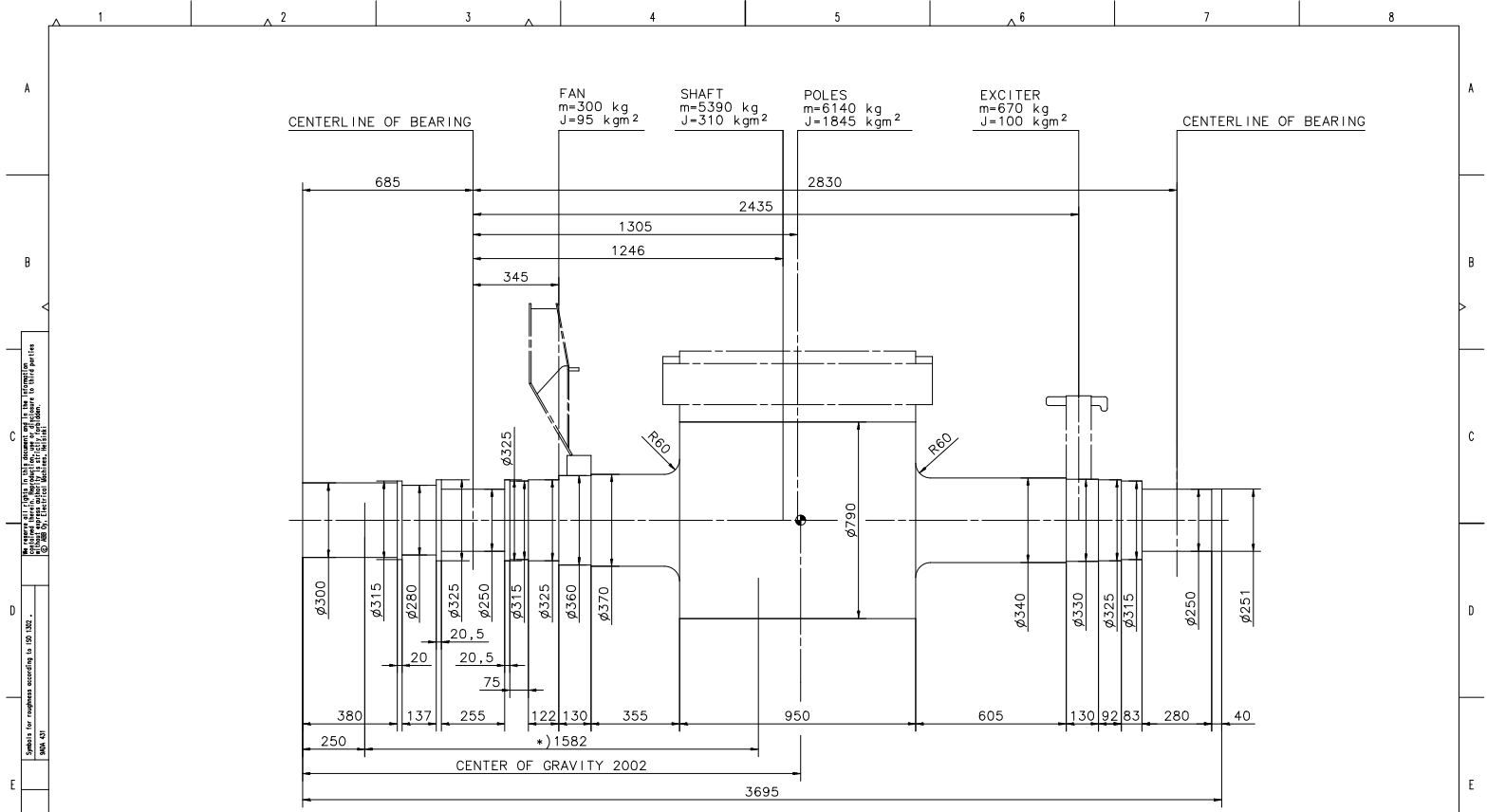
Wartsila Id: DBA801431 -



General dimensions for casting and non-casting machines. Please refer to ISO 1302. Symbols for roughness according to ISO 1302. WÄRTSILÄ OY, FINLAND. ABB OY, SWITZERLAND. ABB OY, MACHINES, HELSINKI, FINLAND. A31.

		© Wärtsilä Finland Oy Power Plants	ET-DIMENSION
		ABB Oy	ABB ref.no.
Product	Generator AC	ACA UNITS	AMG
MADE	2001-01-02 TOKKO	ASLYDMS	WEIGHT
CHGD	2001-01-02 JIKOKKI	SCALE 1:7.5	IC IM IP
APPR	2001-01-02 J.SHEVCHAN	SIZE A2	Proj. no.
		Page No. 1/1	ABB Oy, Machines, Helsinki
		DRG. No. 3AFP	5122341
			A
			Rev.

Wärtsilä id: DBA8801431



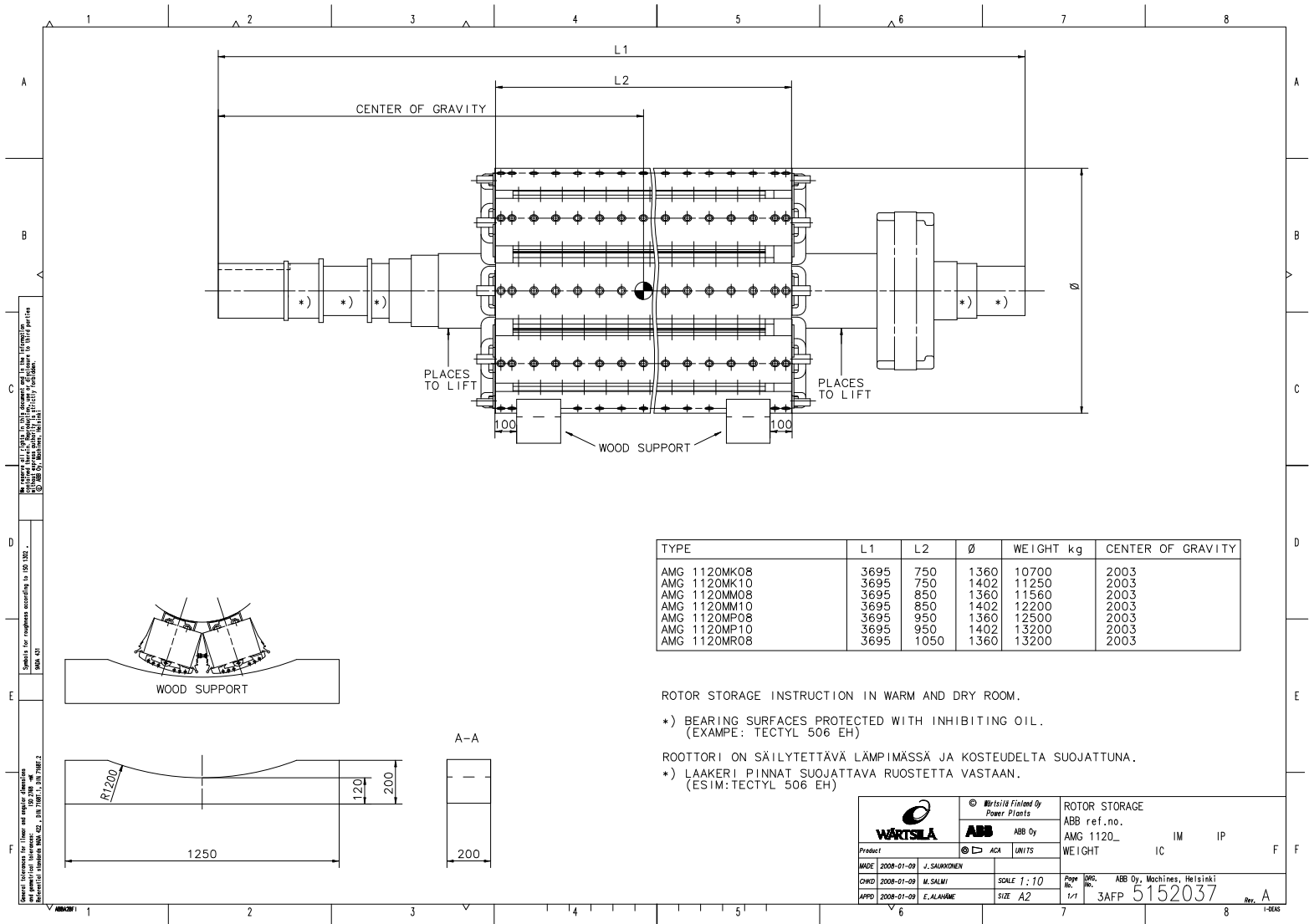
MATERIAL: EN10025-S355J2G3 OPT22

TOTAL WEIGHT 12500 kg
 TOTAL INERTIA 2350 kgm²
 *) TORSIONAL STIFFNESS 50.1 x 10⁶ Nm/rad

		© Wartsila Finland Oy Power Plants ABB Oy		ROTOR DRAWING ABB ref.no. - AMG 1120MPO8_S_ IM IP	
Product Generator AC		<input checked="" type="checkbox"/> ACA UNITS		WEIGHT IC F	
MADE 2005-08-08 CHVD 2005-08-08 APPD 2005-08-08	J. SAURIKONEN J. KOKKI J. KERUSMA		SCALE 1:10 SIZE A2	Page No. 1/1 3AFP	ABB Oy, Electrical Machines, Helsinki 5140664 Dtr. A

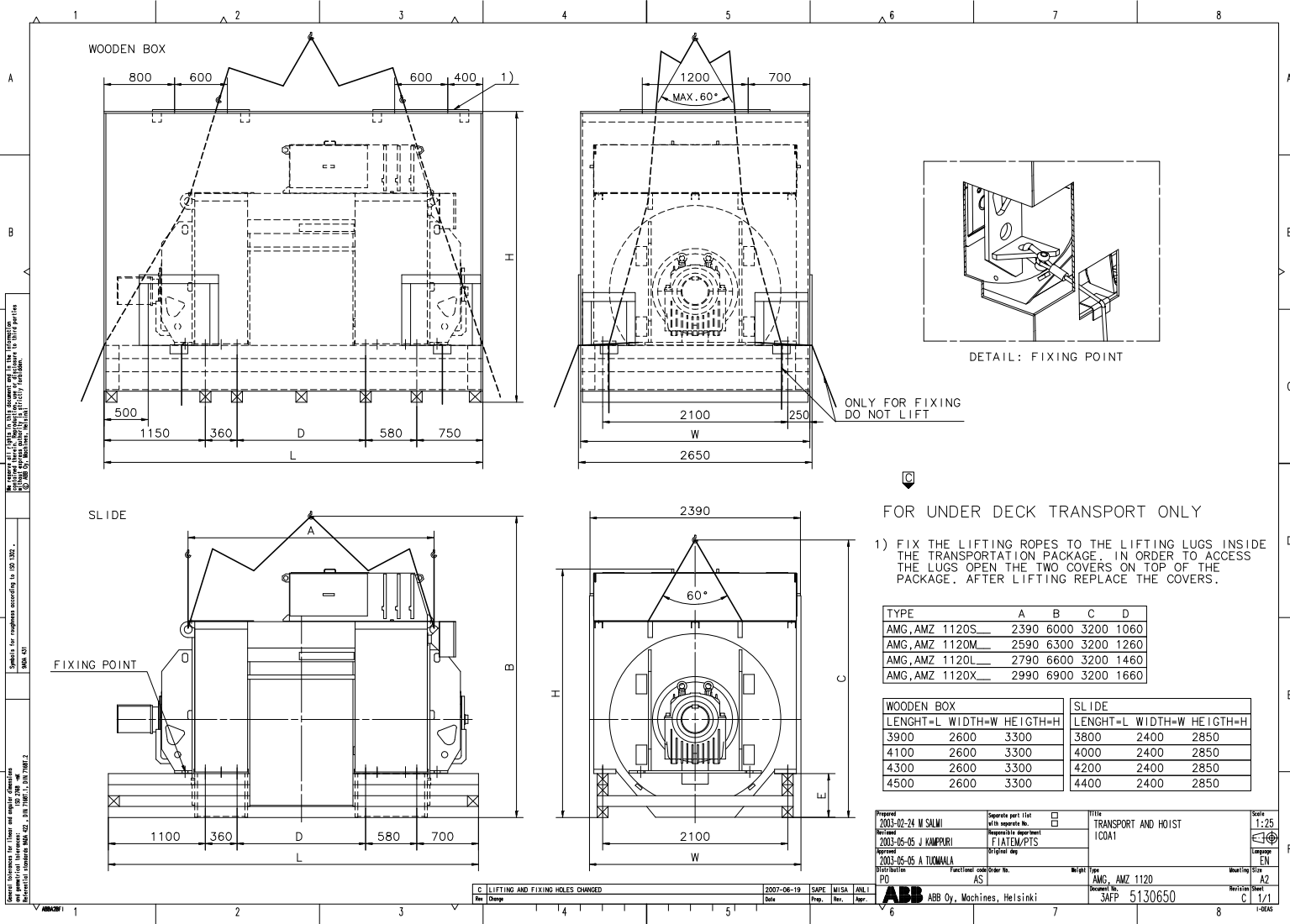
General dimensions for frame and major dimensions for generator bearings according to ISO 1002-1:2002
 Specific for reference according to ISO 1002-1:2002
 SMD 01
 General dimensions for frame and major dimensions for generator bearings according to ISO 1002-1:2002
 Specific for reference according to ISO 1002-1:2002
 SMD 02

Wartsila id: DBAB801431 -



TYPE	L1	L2	Ø	WEIGHT kg	CENTER OF GRAVITY
AMG 1120MK08	3695	750	1360	10700	2003
AMG 1120MK10	3695	750	1402	11250	2003
AMG 1120MM08	3695	850	1360	11560	2003
AMG 1120MM10	3695	850	1402	12200	2003
AMG 1120MP08	3695	950	1360	12500	2003
AMG 1120MP10	3695	950	1402	13200	2003
AMG 1120MR08	3695	1050	1360	13200	2003

ROTOR STORAGE INSTRUCTION IN WARM AND DRY ROOM.
 *) BEARING SURFACES PROTECTED WITH INHIBITING OIL.
 (EXAMPLE: TECTYL 506 EH)
 ROOTTORI ON SÄILYTETTÄVÄ LÄMPIMÄSSÄ JA KOSTEDELTA SUOJATTUNA.
 *) LAAKERI PINNAT SUOJATTAVA RUOSTETTA VASTAAN.
 (ESIM:TECTYL 506 EH)



FOR UNDER DECK TRANSPORT ONLY

- 1) FIX THE LIFTING ROPES TO THE LIFTING LUGS INSIDE THE TRANSPORTATION PACKAGE. IN ORDER TO ACCESS THE LUGS OPEN THE TWO COVERS ON TOP OF THE PACKAGE. AFTER LIFTING REPLACE THE COVERS.

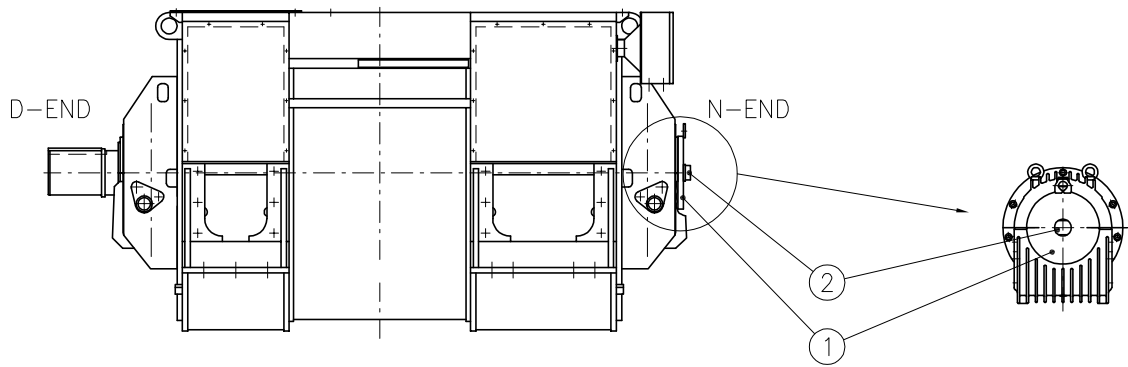
TYPE	A	B	C	D
AMG, AMZ 1120S	2390	6000	3200	1060
AMG, AMZ 1120M	2590	6300	3200	1260
AMG, AMZ 1120L	2790	6600	3200	1460
AMG, AMZ 1120X	2990	6900	3200	1660

WOODEN BOX				SLIDE		
LENGHT=L	WIDTH=W	HEIGHT=H	LENGHT=L	WIDTH=W	HEIGHT=H	
3900	2600	3300	3800	2400	2850	
4100	2600	3300	4000	2400	2850	
4300	2600	3300	4200	2400	2850	
4500	2600	3300	4400	2400	2850	

Original 2003-02-24 M SALMI	Separate part list if it applies to	TRANSPORT AND HOIST	Scale 1:25
Revised 2003-05-05 J KAMPURI	Responsibility agreement FIATEM/PTS	ICDA1	Language EN
Approved 2003-05-05 A TUOMALA	Original day		
Distribution PO	Functional code/Order No. AS	Weight AMG, AMZ 1120	Mounting A2
Prep. Date	2007-06-19	Serial No. 3AFP 5130650	Revision/Sheet C 1/1

General dimensions for design and weight determination
 are given in millimeters unless otherwise stated.
 All dimensions are in millimeters unless otherwise stated.
 Symbols for reference according to ISO 10201-1
 ISO 10201-1
 Symbols for reference according to ISO 10201-2
 ISO 10201-2

Wartsila id: DBAB801431 -



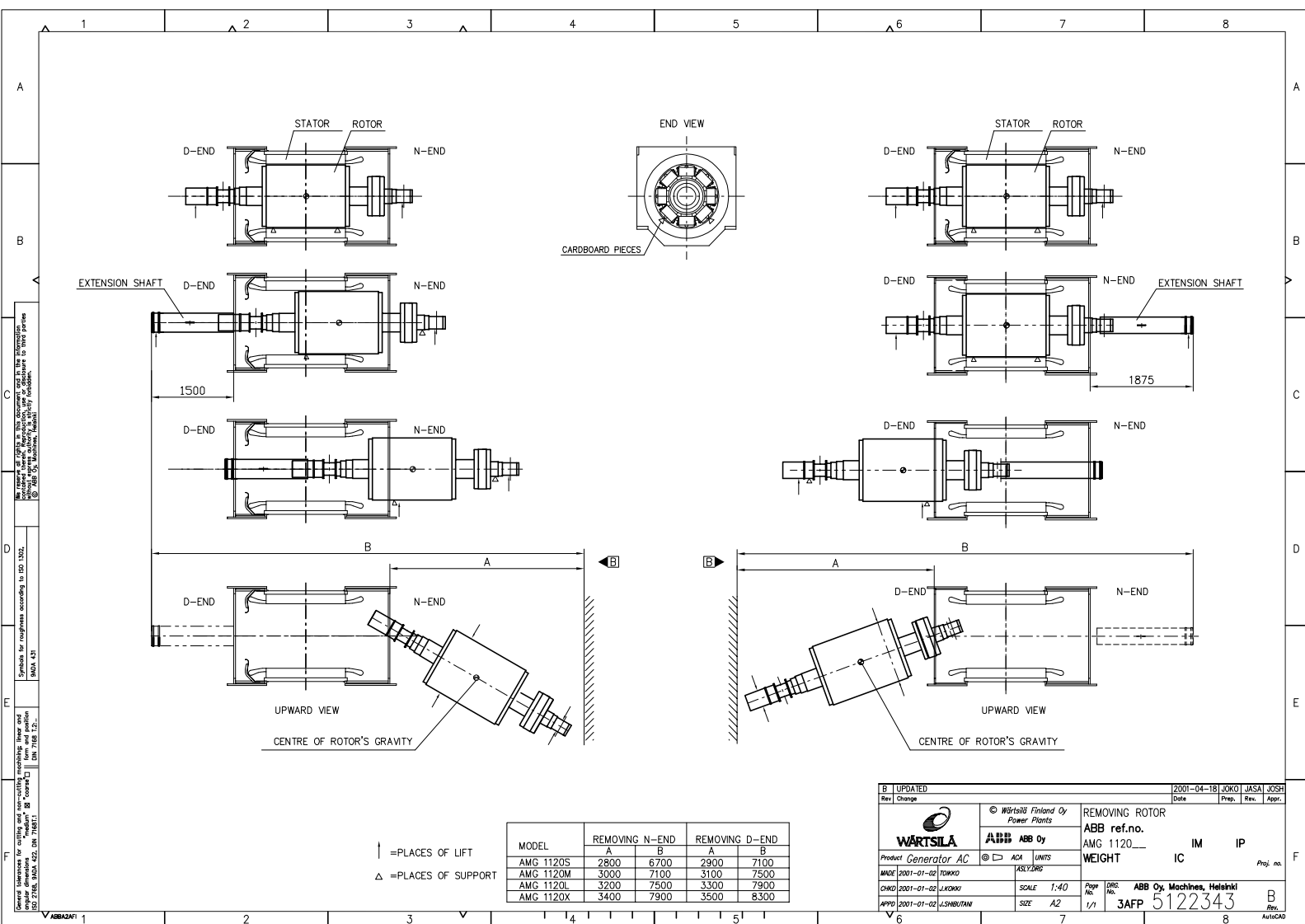
BEFORE COMMISSIONING REMOVE THE MECHANICAL LOCKING DEVICES (PARTS 1 AND 2). REPLACE THE MECHANICAL LOCKING DEVICES WITH ENDPLATE (USE BEARING GASKET PASTE).

1	2	3	4	5	6	7	8
A							A
B							B
C							C
D							D
E							E
F							F

General tolerances for casting and non-casting machining linear and angular dimensions according to ISO 1302.
 Symbols for roughness according to ISO 1302.
 WÄRTSILÄ
 ABB Oy
 ABB Oy, Machines, Helsinki
 FIN-00010
 General tolerances for casting and non-casting machining linear and angular dimensions according to ISO 1302.
 Symbols for roughness according to ISO 1302.
 WÄRTSILÄ
 ABB Oy
 ABB Oy, Machines, Helsinki
 FIN-00010

© Wärtsilä Finland Oy Power Plants		REMOVING OF TRANSPORT LOCKING ABB ref.no. AMG 0710/0900/1120 IM IP	
ABB Oy		WEIGHT IC Proj. no.	
Product	Generator AC	ACA	UNITS
MADE	2001-01-02 TOKKO	ASSEMBLY	
CHNG	2001-01-02 LKOKKI	SCALE	1:15
APPR	2001-01-02 LSHUUTAN	SIZE	A2
		Page No.	1/1
		DRG. No.	ABB Oy, Machines, Helsinki
		3AFP	5122342
			A
			Rev.

Wartsila id: DBAB801431



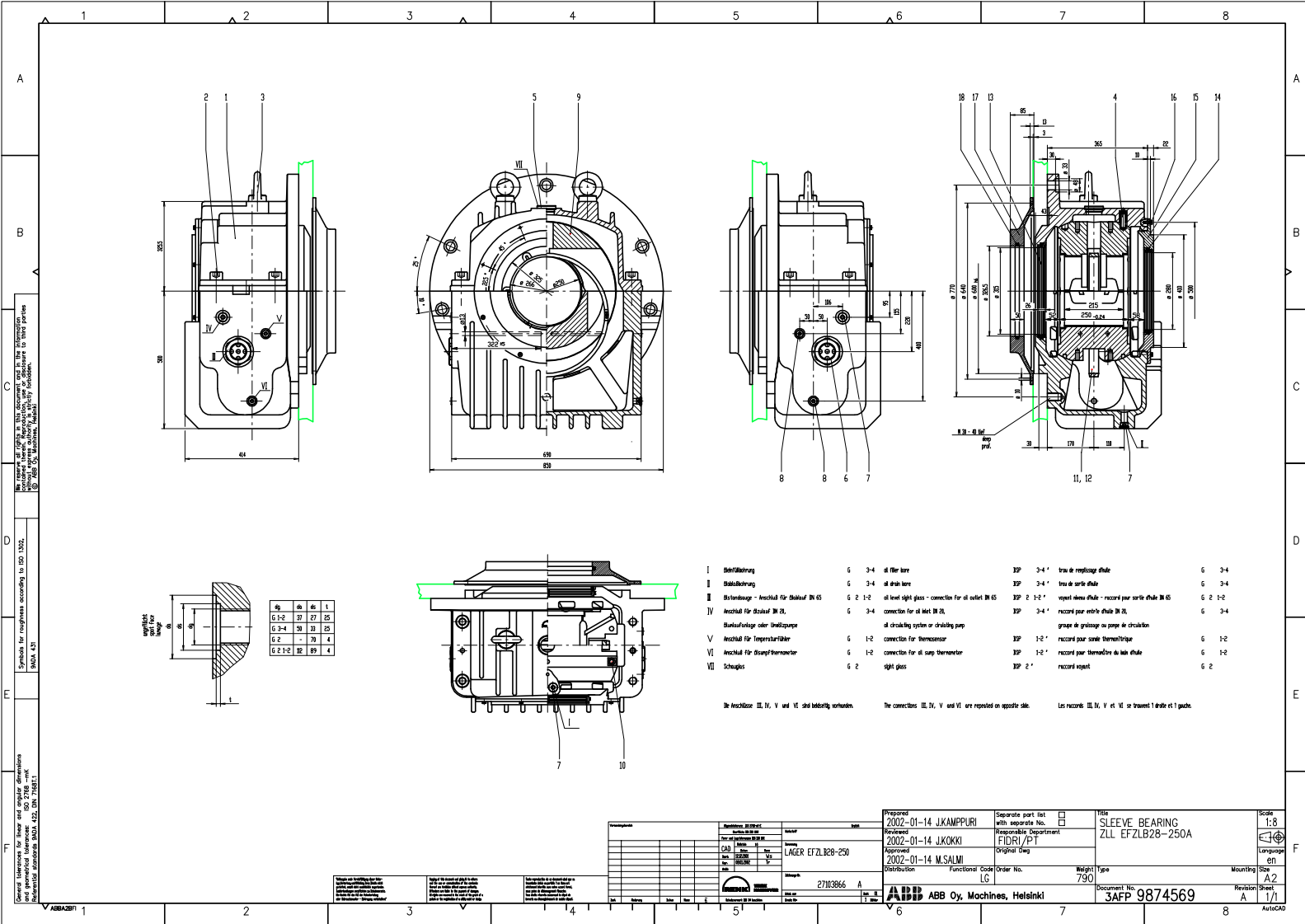
General licenses for cutting and non-cutting machines: linear and rotary axes, ISO 2768, MAZAK A25, DIN 71881, DIN 71875, ISO 1302, Synchro for magnetism according to ISO 1302, MAZAK A21

↑ = PLACES OF LIFT
 △ = PLACES OF SUPPORT

MODEL	REMOVING N-END		REMOVING D-END	
	A	B	A	B
AMG 1120S	2800	6700	2900	7100
AMG 1120M	3000	7100	3100	7500
AMG 1120L	3200	7500	3300	7900
AMG 1120X	3400	7900	3500	8300

B UPDATED		2001-04-18		JOKKO	JASA	JOSHI
Rev. Change		Date	Prep.	Rec.	Appr.	
		© Wärtsilä Finland Oy		REMOVING ROTOR		
		ABB Oy		ABB ref.no.		
Product Generator AC		ASLYDRG		AMG 1120		
MADE 2001-01-02 TOKYO	SCALE 1:40	Page 1/1	DRW. 3AFP	WEIGHT IC IM IP		
CHKD 2001-01-02 J.KOKKI	SIZE A2	1/1	3AFP	Proj. no. 5122343		
APPR 2001-01-02 J.SHEVCHAN				ABB Oy, Machines, Helsinki		
				B		
				REV. 0		

Wartsila Id: DBAB801431



Material: EFZL.B28-250
Part No.: 2710366
Order No.: 9874569

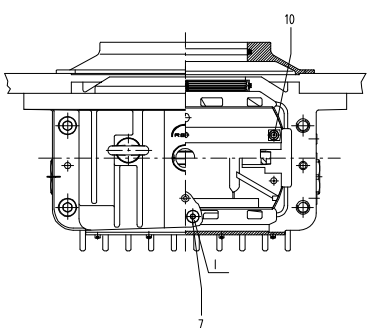
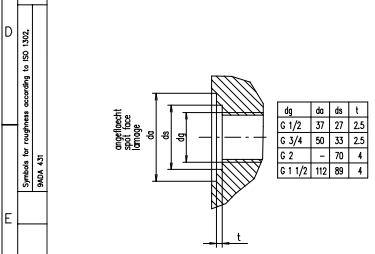
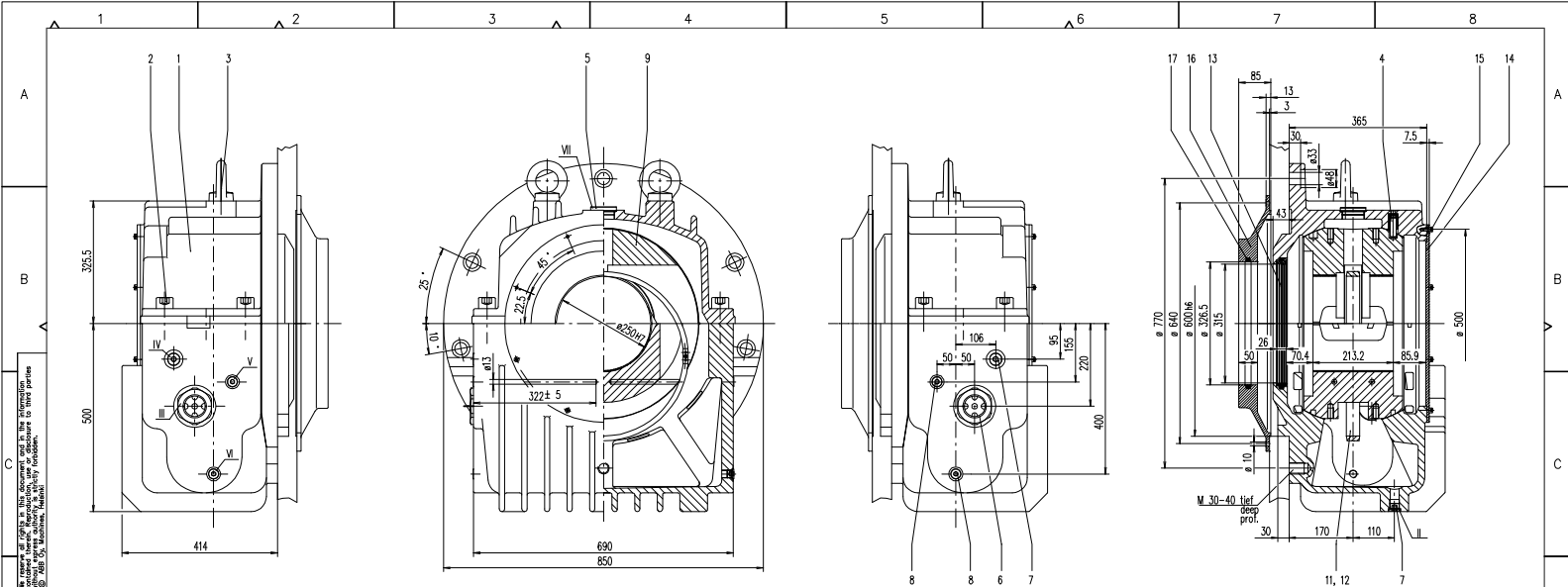
Prepared: 2002-01-14 J.KAMPPURI
Approved: 2002-01-14 J.KOKKI
Approved: 2002-01-14 M.SALMI

Separate part list with separate No.: []
Revision/Department: FIDRI/PT
Original Design: []
Weight: 790
Material: LG
Order No.: []
Document No.: 3AFP 9874569

Scale: 1:8
Language: en
Mounting Size: A2
Revision: 1/1
Sheet: []

ABB Oy, Machines, Helsinki

Matinslia id: DBAB807431



- | | | | | | | |
|-----|--|----------|--|------------|--|----------|
| I | Oleifüllbohrung | G 3/4" | oil filler bore | BSP 3/4" | trou de remplissage d'huile | G 3/4" |
| II | Oleiausbohrung | G 3/4" | oil drain bore | BSP 3/4" | trou de sortie d'huile | G 3/4" |
| III | Oelstangebohrung / Anschluss fuer Oelablauf DN 65 | G 2 1/2" | oil level sight glass / connection for oil outlet DN 65 | BSP 2 1/2" | voyant niveau d'huile / raccord pour sortie d'huile DN 65 | G 2 1/2" |
| IV | Anschluss fuer Oelablauf DN 20, Oelumlaufanlage oder Umwälzpumpe | G 3/4" | connection for oil inlet DN 20, oil circulating system or circulating pump | BSP 3/4" | raccord pour entrée d'huile DN 20, groupe de graissage ou pompe de circulation | G 3/4" |
| V | Anschluss fuer Temperaturfühler | G 1/2" | connection for thermometer | BSP 1/2" | raccord pour sonde thermométrique | G 1/2" |
| VI | Anschluss fuer Oeltempferometer | G 1/2" | connection for oil temp thermometer | BSP 1/2" | raccord pour thermomètre du bain d'huile | G 1/2" |
| VII | Schauglas | G 2" | sight glass | BSP 2" | raccord voyant | G 2" |
- Die Anschlüsse II, IV, V und VI sind beidseitig vorhanden. The connections II, IV, V and VI are repeated on opposite side. Les raccords II, IV, V et VI se trouvent à droite et à gauche.

General dimensions for inner and outer diameters: d_1 , d_2 , d_3 , d_4 , d_5 , d_6 , d_7 , d_8 , d_9 , d_{10} , d_{11} , d_{12} , d_{13} , d_{14} , d_{15} , d_{16} , d_{17} , d_{18} , d_{19} , d_{20} , d_{21} , d_{22} , d_{23} , d_{24} , d_{25} , d_{26} , d_{27} , d_{28} , d_{29} , d_{30} , d_{31} , d_{32} , d_{33} , d_{34} , d_{35} , d_{36} , d_{37} , d_{38} , d_{39} , d_{40} , d_{41} , d_{42} , d_{43} , d_{44} , d_{45} , d_{46} , d_{47} , d_{48} , d_{49} , d_{50} , d_{51} , d_{52} , d_{53} , d_{54} , d_{55} , d_{56} , d_{57} , d_{58} , d_{59} , d_{60} , d_{61} , d_{62} , d_{63} , d_{64} , d_{65} , d_{66} , d_{67} , d_{68} , d_{69} , d_{70} , d_{71} , d_{72} , d_{73} , d_{74} , d_{75} , d_{76} , d_{77} , d_{78} , d_{79} , d_{80} , d_{81} , d_{82} , d_{83} , d_{84} , d_{85} , d_{86} , d_{87} , d_{88} , d_{89} , d_{90} , d_{91} , d_{92} , d_{93} , d_{94} , d_{95} , d_{96} , d_{97} , d_{98} , d_{99} , d_{100} .

Scale: 1:1

File: SLEEVE BEARING ZLL EFZL028-250EP

Document No: 3AFP 9872686

ABB Oy, Machines, Helsinki

Wartsila id: DBAB801437