

Annexure C
VENDOR DETAILS

SL NO	DESCRIPTION	To be filled by bidder
1	VENDOR NAME	
2	QUOTATION REFERENCE	
3	QUOTATION DATE	
4	CONTACT PERSON	
5	FIRM MAIL ID	
6	TELEPHONE / MOBILE NO	
7	OFFICE ADDRESS	
8	ORDER TO BE PLACED ON	
9	ORIGIN OF DISPATCH	
10	PAN NO	
11	GSTIN NO	
12	UDYAM No.	
13	Make & Model of Quoted Item	
14	HSN No. of Quoted Item & GST%	
15	GeM Seller ID	
16	BHEL Vendor Code (If any)	

All Commercial Terms as per GeM GTC and ATC are accepted.

Vendor Seal & Sign

Schedule

1.0	Scope of Supply	Qty	Vendor Comments
1.1	Refurbishment of CPE Main Drive Gearbox with supply of input, intermediate & output shafts, Nominal Input Power: 1900 KW, Input RPM : 750 rpm, Output : 90 rpm as per BHEL Operating manual: SNC2-750S, GA Drg 7148 M2 & Internal Arrangement Drg 64490	2 No's	
2.0	Vendor scope		Vendor Comments
2.1	Dismantling of Gearbox from Base Frame at BHEL site		
2.2	Transportation of Gearbox from BHEL, Trichy to vendor works		
2.3	Complete dismantling of gearbox internals at vendor works		
2.4	Reverse engineering & generation of detailed manufacturing drawing of output coupling		
2.5	Supply of oil seals i)Item No. 49 - B2 360 x 400 x 20 - 2 Nos ii)Item No. 50 - B2 195 x 230 x 15 - 2 Nos Make: SKF / Freudenberg		
2.6	Supply of shafts & other subassemblies as mentioned below i)Input pinion shaft: Item No. 34 - 1 No, Material: 18 CrNiMo7 ii)Intermediate Pinion shaft: Item No . 32 - 1 No, Material: 18 CrNiMo7 iii)Output shaft: Item No. 30 - 1 No, Material: 42 CrMo4 iv)Input shaft spacer: Item No. 17 - 1 No v) Input shaft seal ring: Item No. 18 - 1 No Material composition as mentioned above or equivalent. For equivalent, vendor shall mention specific material grade. Pinion & input shaft seal ring case hardness shall be maintained at 60±2 HRC. Output shaft hardness shall be maintained at 35±2 HRC. Newly supplied pinion shall be ground on CNC profile grinder as per DIN 5/6 accuracy.		

2.7	Bull gears Item No. 31 & 33 shall be reversed, profile ground & matched with new pinions. Gears shall be ground on CNC profile grinder as per DIN 5/6 accuracy..	
2.8	Refurbishment of all bearing seating areas in casing	
2.9	Assembling of all gearbox internals with input & output couplings. Existing coupling shall be used for assembling. Bore machining/correction of couplings shall be in scope of vendor. Blue matching of the mating gears with contact pattern shall be carried out. Contact ratio: 70 % minimum shall be established	
2.10	Trail run with input speed of 750 rpm shall be carried out at vendor works. Lub oil SP 220 oil (100 lpm) shall be used.	
2.11	Transportation of Gearbox from vendor works to BHEL, Trichy	
2.12	Installation of Refurbished Gearbox at BHEL site with Laser Alignment of input coupling, hydraulic torqueing of base bolts, any other facilities required for Erection	
2.13	No Load & Load trials of Gearbox at BHEL site	
3.0	BHEL scope	Vendor Comments
3.1	Supply of all bearings	
3.2	EOT crane, Pneumatic air at 6 bar, Power supply, Oxy-Acetylene cutting & welding machine with consumables	

4.0	Documents to be submitted for approval after PO (All test reports of material shall be from NABL accredited laboratory and NDT reports by Qualified personnel)	Vendor Comments
4.1	Quality Assurance Plan(QAP) i)QAP for the Gearbox Refurbishment shall be submitted	
4.2	Shaft raw material: i)Mill test certificate ii)Chemical composition test report iii)UT test report	
4.3	Reverse Engineering: i)Detailed manufacturing drawing for all sub-assemblies (both in AutoCAD & PDF format)	
4.4	Machined shafts: i)Material hardness report ii)MPI test report for pinion/gear after profile grinding iii)Dimensional inspection report iv)Blue matching Contact pattern report for Pinion/Gear	
4.5	Trial run, No load & Load Tests: i)Test Reports with noise level, temperature & vibration	

Operating Manual



Type: SNC2-750S

DOB Com No.: 111101. 01 + 02

Customer: SMS Meer, Mönchengladbach

Customer Order No.: 2PM-4501434521

Customer Com. No.: 24-401940/0101056-30.000/0010

Code word: BHEL Indien

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1. General information

1.1 Introduction

This operating manual, hereafter called OM, is valid for the gear unit uniquely identified on the cover page, which is provided by Dr. W. Ostermann DOB-Getriebebau GmbH & Co. KG, hereafter called OSTERMANN. The corresponding OM is supplied with each delivery of a gear unit.

It must have been read, understood and observed by all persons assigned with assembly, operation, maintenance and service work.

The operating manual must always be kept within reach.

In addition, the regulations for accident prevention and the rules for safe/professional work in the country of use must be observed.

During the warranty period the gear unit may only be opened by employees of OSTERMANN. If this is not possible, the opening of the gear unit by others requires a written authorization from OSTERMANN, otherwise any further guarantee may not be assumed.

In any case, the gear unit may only be opened by skilled and qualified technicians competent in this type of work, with full knowledge and by reference to the assembly drawing.

In addition, we assume no liability for damages resulting from non-observance of the OM.

The operating instructions from the respective manufacturers must be observed for all attached parts, such as clutches, belt pulleys, components for oil supply, etc.



The **Attention** symbol indicates a warning whose non-observance can put personnel at risk.

2. Safety

2.1 Intended use

The gear unit may only be used under the conditions and power ratings agreed upon in the contract. The technical specifications can be found on the type plate and/or the dimension sheet of the gear unit. These specifications must be observed and adhered to without fail!

Any other use or any use differing from the technical specifications of the gear unit is considered inappropriate. Any damages resulting from such inappropriate use of the gear unit are the sole responsibility of the user/operator. The same applies to any unauthorized modifications to the gears. Intended use also includes observing and adhering to the following instructions:

- for safety,
- for installation,
- for operation,
- for maintenance/repairs

provided in this operating manual.

Moreover, a gear unit of the standard design is not suitable for use in potentially explosive atmospheres.

2.2 General safety instructions

The gear unit has been designed and constructed according to the current state of the art and the generally recognized practices of safety engineering.

The gear unit may only be used as intended, with an awareness of safety and the risks involved, when in proper technical condition and in accordance with the OM!

Any faults, especially those that may affect safety, must be rectified immediately!

All work must be performed with care and with a main focus on "safety".

The gear unit may only be serviced and installed by persons that have fully read and understood the OM.

All work on the gear unit must be performed by authorized, expert personnel. Observe the minimum statutory age!

To prevent inappropriate action, especially in dangerous situations, the responsibilities for the different activities necessary for servicing and repairing the gears must be clearly specified and observed!

Work on the gear unit may only be performed when it is at a complete standstill. The drive assembly must be secured against unintended restarting. This can be done by locking the key-operated switch or by removing the fuse of the power supply. Information signs must be hung on main control device in order to indicate that work is being carried out on this gear unit.

Observe the information provided on the type plates, signs, rotational direction arrows, etc. They must be kept free of paint and dirt and replaced as necessary.

In order to prevent the toothed parts and the bearings from becoming damaged, do not perform any welding work on the gear unit. Furthermore, it may not be used as an earth point for welding!

In addition, the gear unit may not be cleaned with a high-pressure washer, unless all openings are protected from penetration of water, otherwise the shaft seal rings could be damaged and water can penetrate the air filter.



For protection against injuries, rotating and moving parts must be covered with an appropriate safety device to prevent reaching in.

If the removal of safety equipment should be necessary, it must be immediately re-installed and checked after completion of maintenance or repair work!



Individual parts and large assemblies must be fastened and secured using appropriated hoists and load-carrying equipment.

In the case of faults on the gear unit, it must be shut down immediately.

In the case of malfunction of the gear unit, appropriate measures must be taken to ensure that no additional property damage arises.

Maintenance may only be performed using equipment suitable for the corresponding work.

The instructions for service work must be observed for all repairs, maintenance and inspection of the gear unit.

2.3 Danger



The gear unit may have extremely high surface temperatures, depending on the operating conditions.

Caution! Risk of burns!

Hot oil escaping from the gears during oil changes may cause scalding.

2.4 Environmental protection

When changing the oil, make sure that the waste oil is collected in suitable containers and is stored separately from any rust-proofing agents.

Waste oil, rust-proofing agents, oil binding agents and any oil-soaked cleaning cloths must be disposed of in accordance with the applicable environmental regulations.

3. Delivery / Transport / Storage

3.1 Delivery

The gear unit is delivered ready for operation, however without oil filling.

Bearing points with lubricating nipples must be filled with grease.

Attached components, such as oil supply systems, clutches, fittings, etc. are packaged and delivered separately, if applicable.

The scope of delivery is listed on the accompanying delivery note.

The shipment must be inspected for completeness and any transport damage upon receipt.

If applicable, commissioning may not be carried out.

Transport damages and incomplete deliveries must be immediately reported to OSTERMANN in writing.

3.2 Transport



The transport of the gear unit must be carried out with lifting equipment appropriate for the weight and size.

Only the suspension points provided for transport may be used. These suspension points are identified with the corresponding symbol on the gear unit.

It must be ensured that any attachments, such as pipelines or fittings, are not damaged during transport.

3.3 Storage

The gear unit is provided with rust-proofing, both inside and out, for storage in dry, frost-proof halls for up to 15 months.

However, the internal and external rust-proofing must be checked and renewed as necessary for storage times longer than six months. Please contact OSTERMANN in case of questions in this regard.

The fitted breather must be replaced with a plug before storage.

The anti-corrosion protection must not be damaged before storage or during the storage period.

The storage location must be protected against weather influences. The temperature in the immediate area vicinity of the gear unit must lie between 0°C and +20°C.

In case this temperature range can not be met because of environmental conditions, it is absolutely necessary to contact OSTERMANN.

The gear unit must be stored in a location that is clean, free of vibrations and protected against harmful environmental influences (aggressive or condensing air, etc.).

The paint coating must not be damaged!

The gear unit should be rotated every four weeks by hand or by the motor in jog mode in order to change the stationary position of the bearing.

4. Installation

4.1 General information

The installation of the gear unit must be carried out by qualified personnel in observance of the safety instructions.

The installation position, direction of rotation and connecting dimensions can be gathered from the corresponding dimension sheet.

The prescribed installation position may not be changed, otherwise sufficient lubrication cannot be guaranteed.

The foundation must be level and essentially vibration-free. The distortion of the installation surface may not exceed 0.1mm per 1m.

The gear unit must be fastened with fastening screws or nuts with a minimum strength class of 8.8 and tightened to the prescribed torque.

If external forces cause the housing to shift, the gear unit must also be fastened using weld-on blocks.

The gear unit and/or the input and output shafts must be precisely aligned with the drive-side and output-side machines. For this purpose, observe the operating manual of the clutch manufacturer. The input and output shafts may only be subjected to the loads specified on the dimension sheet and/or may only be operated with the operating weights of the clutches specified by OSTERMANN.

The oil supply system and monitoring devices must also be connected, if applicable. All protective and safety-relevant equipment must be installed and functional.

4.2 Fitting clutches

The shaft journals are provided anti-corrosion protection, which must be removed with a cleaning solvent, such as benzene. The shaft seal rings may not come into contact with the solvent, otherwise leakages can arise.

Clutches must be re-fit on the shaft using the threaded centering device on the shaft ends.

In the process, striking or any sort of impact is not permitted, as gear unit parts can be damaged.

If re-lubrication of the mounted clutch is necessary, the injection of lubricant may not take place too rapidly, because excessive axial forces resulting from hydraulic effects damage the gear unit.

When shrink-fitting the clutches, the shaft seal rings must be protected against heating up above 100°C.

The operating manual of the clutch manufacturer must be observed without fail for the installation of device.

Despite the maximum permissible amount of misalignment which the coupling supplier may state as acceptable, the difference to the perfect dynamic alignment conditions should be kept as low as possible to minimize vibrations, bearing loads and wear in the coupling device itself.

5. Commissioning

5.1 Measures

Prior to commissioning, the gear unit must be completely assembled and ready for operation. After storage for longer than six months the gear unit must be checked for rusting both inside and out.

If the threaded holes for the air filter, oil level indicator and oil drain plug are filled with plugs at the time of delivery, they must be replaced with the appropriate accompanying components. The arrangement can be gathered from the dimension sheet.

The gear unit may never be operated without a properly installed air filter, otherwise the internal overpressure will damage the shaft seal rings.

If the gear unit is equipped with a return stop, the rotational direction of the motor must be observed without fail. The rotational direction is labelled on the gear unit with an arrow.

5.2 Filling with oil

The internal parts of the supplied gear unit are rust-proofed in such a way that it is **not** necessary to wash out the gear unit before filling with oil.

Prior to commissioning, the gear unit must be filled with oil through the thread of the air filter, the filling plug or the opening of the inspection hole cover. The marking on the oil dipstick and/or the oil sight glass is decisive for the oil quantity. The oil viscosity is specified on the type plate. The lubricants which we recommend can be gathered from the accompanying selection table (Appendix I.I.).

If the gear unit has an external oil supply system, a sufficient oil supply must be observed. The required flow rate (l/min) can be gathered from the type plate.

The oil level must be checked once more after first-time commissioning of the external oil supply system by means of the oil dipstick and/or oil sight glass.

After filling the gear unit with oil, the air filter or the filling plug must be reinstalled and/or the openings of the inspection hole cover must be closed again and the fastening screws re-tightened.

If the gear unit has an attached oil pump positioned above the oil level, it must be filled with oil prior to commissioning.

Attached oil pumps can run dry after extended downtimes. Therefore, the oil pressure must be monitored prior to each re-commissioning and oil must be filled in the pump as necessary. **The gear unit and the oil pump may not be operated for more than one minute without sufficient oil pressure.**

5.3 Start-up phase

If the gear unit has an external oil supply system, the motor pump must be started prior to starting the gear unit, whereby the rotational direction of the pump must be observed. The oil inlet temperature can be gathered from the dimension sheet.

The oil flow for the gearing and bearings must be checked through the inspection hole cover on the gear unit casing.

Only after the monitoring devices indicate that there is sufficient oil supply and all inspection hole covers have been closed may the gear unit be commissioned.

Oil pressure switches and manometers in the oil supply serve to monitor the oil pressure. The required oil pressure with the corresponding oil temperature can be gathered from the test report. If the oil pressure and oil temperature deviate from the test report, the cause must be investigated and rectified.

After the start-up phase, the gear unit should **not** be run at full load for the first two hours. If the unit runs fault-free, the load can be increased to full load. In the process, the gear unit must be constantly monitored. We recommend checking the bearing temperatures each of the first 12 hours of operation under load. In the process, the bearing temperatures should not exceed 75°C at idle speed and should not exceed 85°C under load.

If the bearing temperature should increase above the permissible threshold and excessive vibrations or abnormal noises are noticeable, the gear unit must be shut down immediately in order to prevent damage.

After the first 12 hours of operation the interior of the gear unit should be inspected through the inspection hole cover while at a standstill.

6. Decommissioning

6.1 General information

When shutting off the gear unit with oil supply system, the motor pump must continue running until the gear unit stops so that the lubrication is provided until the gear unit is at a standstill.

Should the gear unit be decommissioned for an extended period of time, it must be rotated every four weeks by hand or by the motor in jog mode in order to change the stationary position of the bearing. The gear unit must also be checked every four weeks for the formation of rust, because the initial rust-proofing upon delivery is no longer present. In order to counteract rust formation, we recommend running the drive a few minutes each month in order to wet the gear unit interior with lubricant.

If the gear unit is decommissioned for more than six months, it must always be rust-proofed (see Point Storage).

The instructions under **Commissioning** must be performed for the recommissioning.

7. Maintenance / Service

7.1 General information

All maintenance and service work may only be performed by expert personnel with the gear unit at a standstill.

The drive motor must be secured against unintended switching-on.

For this purpose, information signs must be hung where the unit is switched on!

The maintenance work to be performed and the corresponding time intervals can be gathered from the following list.

Maintenance work Inspection	Interval	Comment
Check all screws of the gear unit for firm seating	every 6 months	
Check bearing points for unusual noises and increased temperatures	monthly	max. temperature 85°C
Check toothing for noise changes	daily	
Inspection of the tooth pattern and the tooth flanks	every 6 months	
Check gear unit for leak-tightness	monthly	
Check oil level	monthly	
Check oil temperature	monthly	
Check oil pressure	monthly	
Clean clogged oil injection nozzles	depending on degree of clogging	visual inspection through the inspection hole cover
Check functionality and leak-tightness of the oil supply system	monthly	
1st oil change	after 600 hours of operation	
Further oil changes: - With the use of mineral-based oils: - With the use of synthetic oils:	after max. 6000 hours of operation, or after 18 months at the latest after max. 18.000 hours of operation, or after 36 months at the latest	
Change oil filter	with each oil change	
Clean air filter	every 3 months	
Relubrication with grease of bearings and seals	after max. 3000 hours of operation, or after 6 months at the latest	
Relubrication with grease of spline shafts	every 4 weeks	
Inspection of the entire gear unit	every 6 months	

7.2 Instructions for the oil change

The oil must be drained through the drain hole while at operational temperature immediately after shutting down the gear unit (**Caution: Risk of burns**). For this purpose, unscrew the oil drain plug and thoroughly clean it.

The casing must also be thoroughly cleaned of all residues, such as oil sludge and wear debris. For this purpose, the gear unit interior is rinsed with the oil type used for operation. Please contact OSTERMANN in case of questions in this regard.

After screwing the oil drain plug in again, fill the gear unit with fresh oil through the opening of the inspection hole cover or the threaded hole of the air filter (see Point Filling with oil).

It must be ensured that only oils from the same manufacturer are used. A mixture of different oil types is not permitted.

The mixture of mineral oils with synthetic oils, in particular, is not permitted.

When changing over from mineral oil to synthetic oil, the gear unit must first be thoroughly rinsed out with the new oil type.

7.3 Grease lubrication

If roller bearings, seals or splined shafts are lubricated with grease, they must be re-lubricated in regular intervals through the appropriate devices (such as grease nipples).

Excess grease must be removed and disposed carefully.

If different grease types are mixed together, the compatibility must be ensured.

7.3.1 Grease lubrication of labyrinth seals

If labyrinth seals on the input and output drives are filled with grease, they must be re-lubricated through the grease nipples. Inject grease through the nipple until it emerges between the labyrinth cover and the labyrinth ring. If labyrinth ring and cover are covered by attachment parts, such as caps dismount them before re-lubrication.

8. Faults / Spare parts

8.1 Fault

In case of a fault during the warranty period contact OSTERMANN within 24 hours in order to best determine the cause of the fault and the best possible remedy.

For this purpose please use our e-mail address: info@dob-getriebebau.de.

Faults necessitating a repair during the warranty period should **only** be rectified by OSTERMANN personnel or require written authorization for the repair by others. Otherwise OSTERMANN will assume no further warranty obligations.

In any case, the repair must only be made by skilled and qualified technicians competent in this type of work, with full knowledge and by reference to the assembly drawing.

OSTERMANN reserve the right to withdraw from the obligation of further warranty should they not be satisfied that any repair made by NON - OSTERMANN technicians has not been made in a correct way.

Any parts exchanged must be of an OSTERMANN approved OEM source.

If any parts have been exchanged the setting or re-setting of critical clearances, teeth contact or lubrication criteria must be checked, whereby the value must be inside the permission design ranges, otherwise it may cause damage to the gear unit.






8.2 Spare parts

Spare parts for each OSTERMANN gear unit must be ordered from us according to the parts list. We assume no warranty obligations for damages resulting from the use of spare parts not ordered from us.

I. Appendix

I.I Selection table of recommended lubricants:








Mineral-based gear oils

Viscosity ISO-VG DIN 51519 40°C [mm ² /s]	Designation DIN 51502							
460	CLP 460	ECO GEAR 460 M	Degol BG 460 Plus	Energol GR-XP 460	OPTIGEAR BM 460	Klüberoil GEM 1-460 N	Mobilgear XMP 460	Shell Omala F 460
320	CLP 320	ECO GEAR 320 M	Degol BG 320 Plus	Energol GR-XP 320	OPTIGEAR BM 320	Klüberoil GEM 1-320 N	Mobilgear XMP 320	Shell Omala F 320
220	CLP 220	ECO GEAR 220 M	Degol BG 220 Plus	Energol GR-XP 220	OPTIGEAR BM 220	Klüberoil GEM 1-220 N	Mobilgear XMP 220	Shell Omala F 220
150	CLP 150	ECO GEAR 150 M	Degol BG 150 Plus	Energol GR-XP 150	OPTIGEAR BM 150	Klüberoil GEM 1-150 N	Mobilgear XMP 150	Shell Omala F 150
100	CLP 100	ECO GEAR 100 M	Degol BG 100 Plus	Energol GR-XP 100	OPTIGEAR BM 100	Klüberoil GEM 1-100 N	Mobilgear XMP 100	Shell Omala F 100
68	CLP 68			Energol GR-XP 68	OPTIGEAR BM 68	Klüberoil GEM 1-68 N		
Roller bearing greases		Addilith EP 0	Aralub HL2	Energrease LS3	Molub-Alloy BRB 572	Klüberplex BEM 41-141	Mobilux EP 2	Shell Alvania G3

These oils conform with the minimum requirements according to DIN 51517 part 3

Operating temperature from -10°C to +90°C, short-term +110°C

Synthetic gear oils (poly- α -olefin)¹⁾

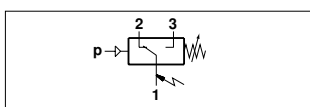
Viscosity ISO-VG DIN 51519 40°C [mm ² /s]	Designation DIN 51502							
460	PAO 460	ECO GEAR 460 S	Degol PAS 460	Energol EP-XF 460	OPTIGEAR Synth. X 460	Klübersynth GEM 4-460 N	Mobil SHC 634	Shell Omala HD 460
320	PAO 320	ECO GEAR 320 S	Degol PAS 320	Energol EP-XF 320	OPTIGEAR Synth. X 320	Klübersynth GEM 4-320 N	Mobil SHC 632	Shell Omala HD 320
220	PAO 220	ECO GEAR 220 S	Degol PAS 220	Energol EP-XF 220	OPTIGEAR Synth. X 220	Klübersynth GEM 4-220 N	Mobil SHC 630	Shell Omala HD 220
150	PAO 150	ECO GEAR 150 S	Degol PAS 150	Energol EP-XF 150	OPTIGEAR Synth. X 150	Klübersynth GEM 4-150 N	Mobil SHC 629	Shell Omala HD 150
100	PAO 100	ECO GEAR 100 S			OPTIGEAR Synth. X 100	Klübersynth GEM 4-100 N		
68	PAO 68					Klübersynth GEM 4-68 N		

These oils are highly resistant to aging

Operating temperature from -20°C to +100°C, short-term +110°C

1) With the use of synthetic oils, you must first consult with OSTERMANN

Operating manual pressure switch 18D
Bedienungsanleitung Druckschalter 18D
Mode d'emploi Pressostat 18D
Instrucciones para el servicio presostato 18D
Istruzioni d'uso pressostato 18D



Connector **DIN 43650**
Steckverbindung DIN 43650
Raccordement DIN 43650
Conector DIN 43650
Connettore DIN 43650

Switching function:
Microswitch SPDT
Terminals 1 - 3: Contacts close on rising pressure
Terminals 1 - 2: Contacts open on rising pressure

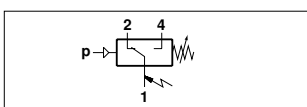
Schaltfunktion:
Ein einpoliger Mikroschalter (Umschalter)
Klemmen 1 - 3: bei steigendem Regelwert Kontakt schließend,
Klemmen 1 - 2: bei steigendem Regelwert Kontakt öffnend

Schéma de branchement du micro-contact (inverseur unipolaire)
Bornes 1 - 3: le contact ferme lorsque la pression monte
Bornes 1 - 2: le contact ouvre lorsque la pression monte

Funciones de conmutación:
Un microrruptor unipolar (2 contactos conmutadores)
Función 1 - 3: si sube el valor, regulador cierra
Función 1 - 2: si sube el valor, regulador abre

Funzione di commutazione:
Microinterruttore SPDT
Terminali 1 - 3: Chiusura dei contatti all'aumento della pressione
Terminali 1 - 2: Apertura dei contatti all'aumento della pressione

For detailed information please see the corresponding data sheet 5.11.021 + 5.11.020.
Weitere Details entnehmen Sie bitte der Schrift 75.11.021 + 5.11.020.
Pour obtenir plus d'information s.v.p. consulter documentation 5.11.021 + 5.11.020.
Para más información por favor consulte la hoja técnica 5.11.021 + 5.11.020.
Per informazioni più dettagliate consultare il catalogo specifico 5.11.021 + 5.11.020.



Connector **M 12 x 1**
Steckverbindung M 12 x 1
Raccordement M 12 x 1
Conector M 12 x 1
Connettore M 12 x 1

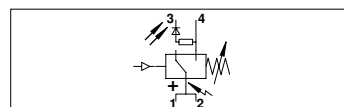
Switching function*:
Microswitch SPDT
Terminals 1 - 4: Contacts close on rising pressure
Terminals 1 - 2: Contacts open on rising pressure
*0880149 Switching function reversed

Schaltfunktion*:
Ein einpoliger Mikroschalter (Umschalter)
Klemmen 1 - 4: bei steigendem Regelwert Kontakt schließend,
Klemmen 1 - 2: bei steigendem Regelwert Kontakt öffnend
*0880149 Schaltfunktion umgekehrt

Schéma de branchement du micro-contact (inverseur unipolaire)*
Bornes 1 - 4: le contact ferme lorsque la pression monte
Bornes 1 - 2: le contact ouvre lorsque la pression monte
*0880149 Fonction de commutation inversée

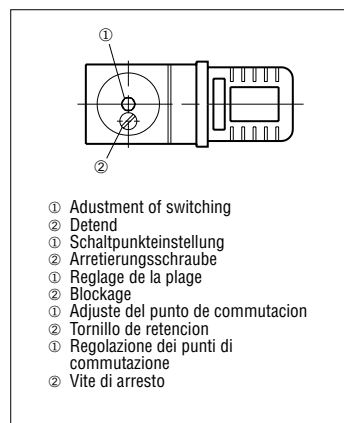
Funciones de conmutación*:
Un microrruptor unipolar (2 contactos conmutadores)
Función 1 - 4: si sube el valor, regulador cierra
Función 1 - 2: si sube el valor, regulador abre
*0880149 Funciones de conmutación invertido

Funzione di commutazione*:
Microinterruttore SPDT
Terminali 1 - 4: Chiusura dei contatti all'aumento della pressione
Terminali 1 - 2: Apertura dei contatti all'aumento della pressione
*0880149 Funzione di commutazione invertita



Connector **M 12 x 1**
Steckverbindung M 12 x 1
Raccordement M 12 x 1
Conector M 12 x 1
Connettore M 12 x 1

DESINA



SWITCH SELECTION

The switching points should normally be in about the middle of the adjustable range.

Do not exceed electrical ratings.

Torque: connector screw 0.7 Nm; screws for CETOP flange 5 Nm.

Electrical connection in accordance with local regulations. For outdoor installation sufficient protection has to be provided for. Critical conditions are: Aggressive atmosphere, drastic changes in temperature, solar radiation, salt bearing atmosphere.

In case of sudden pressure changes and/or pressure peaks with liquid fluids, install surge damper, Cat. No. 0574773.

With flanged design (peak-to-valley height of flanged surface $R_t \leq 12$ mm), O-ring 5 x 1.5, Cat. No. 0664098, is enclosed in the delivery. Load-bearing length of thread is min. 7.5 mm. Max. diameter of pressure port is 3 mm.

AUSWAHL UND EINBAUINWEISE

Bereichsauswahl: optimal, wenn die Schaltpunkte in der Mitte des Schalldruckbereiches liegen.

Elektrischer Anschluß: Verdrahtung gemäß VDE Vorschriften.

Anzugsdrehmoment: Steckdose 0,7 Nm; Schrauben CETOP Flansch 5 Nm.

Montage im Freien nur bei ausreichendem Schutz gegen kritische Umgebungsbedingungen (z.B. aggressive Atmosphäre, salzhaltige Atmosphäre, starke Temperaturschwankungen).

Beim Auftreten schlagartiger Druckänderungen und Druckspitzen bei flüssigen Fluiden ist eine Dämpfungsvorkammer vorzubauen. Best.-Nr. 0574773.

Bei seitlichem Flansch (Rauttiefe der Flanschfläche $R_t \leq 12$ mm) gehört der O-Ring 5 x 1,5, Bestell-Nr. 0664098 zum Lieferumfang.

Tragende Gewindelänge min. 7,5 mm. Max. Durchmesser der

Druckanschlußbohrung 3 mm.

SETTING OF SWITCHING POINTS

Adjust either upper or the lower switching point. The opposite one is then determined by the fixed switching pressure difference. Use pressure gauge for adjustment.

The switching points may be set even during operation. Proceed as follows:

1. Loosen stop screw.
2. Adjust switching points by means of a 5 mm hexagon spanner.
Depending on the sense of rotation the switching points move upwards (clockwise rotation) or downwards (counterclockwise rotation).
3. Retighten stop screw.

EINSTELLUNG DER SCHALTPUNKTE

Eingestellt wird entweder der obere Schaltpunkt p_{ob} oder der untere Schaltpunkt p_{un} . Der andere ergibt sich jeweils aus der festliegenden Schalldruckdifferenz. Zum Einstellen der Schaltpunkte ist ein Manometer zu Hilfe zu nehmen.

Die Schaltpunkte können auch während des Betriebes wie folgt eingestellt oder verändert werden:

1. Arretierungsschraube lösen (wenn vorhanden).
2. Schaltpunkteinstellung mit einem 5 mm, bzw. 6 mm - Sechskantschraubendreher vornehmen.
Erhöhung oder Reduzierung der Schaltpunkte erfolgt durch Rechts- bzw. Linksdrehen des Gewindestückes.
3. Arretierungsschraube festdrehen (wenn vorhanden).

CHOIX ET INSTRUCTIONS DE MONTAGE

Les points de fonctionnement doivent normalement se situer aux environs du milieu de la plage de réglage.

Le raccordement électrique doit être conforme aux normes en vigueur.

Couple de serrage: Connecteur 0,7 Nm; Vis de flasque CETOP 5 Nm.

En cas de montage à l'extérieur, il faut prévoir une protection suffisante contre d'éventuelles mauvaises conditions ambiantes (par exemple : atmosphères agressives, salines, avec de fortes variations de températures etc...).

Dans le cas de liquides avec des pointes de pression ou en cas de variations très rapides de la pression, il faut monter une vis d'amortissement 0574773.

Dans le cas d'exécution flasquable (aspérité du plan de pose bride

$R_t \leq 12$ mm), le joint O-Ring 5 x 1,5, 0664098, est inclus dans la livraison.

RÉGLAGE DES POINTS DE FONCTIONNEMENT

Il convient de régler le point de fonctionnement supérieur p_{ob} ou inférieur p_{un} . Le second point est alors déterminé par la fourchette de retour fixe.

L'utilisation d'un manomètre est recommandée pour un réglage précis. Il est possible de régler ou de modifier le réglage pendant le fonctionnement de l'appareil.

1. Dévisser le bouton moleté.
2. Régler le point de fonctionnement avec une clé 6-pans de 5 mm. Le déplacement vers le haut ou le bas du point de fonctionnement est obtenu en tournant le bouton de réglage vers la droite ou vers la gauche.
3. Revisser le bouton moleté.

SELECCION DE LOS VALORES DE FUNCIONAMIENTO

Se recomienda ajustar los valores de funcionamiento alrededor de la mitad del campo de ajuste.

Las conexiones eléctricas se han de efectuar según normas VDE.

Par de apriete: Conector 0,7 Nm; Tornillos de brida CETOP 5 Nm.

Si se montan al aire libre, los aparatos deben protegerse suficientemente contra las condiciones ambientales (atmósfera agresiva, temperaturas extremas o variaciones fuertes de estas, etc.).

En caso de líquidos con puntas de presión hay que anteponer al presostato la cámara de amortiguación no. 0574773.

En la versión con brida (profundidad de rugosidad de la brida $R_t \leq 12$ mm) el O-ring 5 x 1,5, no. 0664098, es parte del envío. Longitud de la rosca soportante min. 5mm. Diámetro de perforación de la conexión de presión 3mm.

AJUSTE DE LOS VALORES DE FUNCIONAMIENTO

Se ha de ajustar o el punto de conmutación superior p_{vo} o el punto de conmutación inferior. El otro será dado por el propio diferencial fijo. Para un ajuste preciso se recomienda el uso de un manómetro. Los puntos de conmutación también se pueden ajustar durante el funcionamiento:

1. Soltar el tornillo de retención.
2. Ajustar los puntos de conmutación con un macho hexagonal de 5mm.
3. Fijar el ajuste con el tornillo de retención.

SCelta DEL PRESSOSTATO

I punti di commutazione dovrebbero venire a trovarsi normalmente al centro del campo di regolazione. Non superare mai i limiti elettrici.

Coppia di serraggio: Connettore 0,7 Nm; Vite di flangia CETOP 5 Nm.

Eseguire i collegamenti elettrici nel rispetto delle norme. Provvedere adeguata protezione in caso di impiego all'esterno. Condizioni critiche sono: Ambiente aggressivo forti variazioni di temperatura, esposizione al sole, atmosfera salina.

In caso di variazioni repentine o picchi di pressione con fluidi liquidi, installare un soppressore di picchi, Codice 0574773. Per le versioni a flangia (finitura superficiale $R_t \leq 12$ mm) è compreso nella fornitura un OR x 1,5, codice 0664098. La lunghezza di filettatura utile deve essere minimo 7,5 mm. Il diametro massimo della connessione della pressione è 3 mm.

IMPOSTAZIONE DEI PUNTI DI COMMUTAZIONE

Impostare il punto superiore o quello inferiore. L'altro punto viene determinato automaticamente dallo scarto differenziale fisso. Usare un manometro per fare la regolazione. I punti di commutazione possono essere impostati anche in servizio.

Procedere come segue:

1. Allentare la vite di arresto.
2. Impostare i punti di commutazione usando una chiave esagonale da 5 mm. A seconda del senso di rotazione i punti si muovono in su (rotazione in senso orario) o in giù (rotazione in senso antiorario).
3. Serrare nuovamente la vite di arresto.
4. Istruzioni per l'uso del Pressostato tipo 18 D.



**NORGREN
HERION**

IMI Norgren-Herion Fluidtronic GmbH & Co. KG

Stuttgarter Straße 120, D-70736 Fellbach

Telefon: +49 (0)7 11 - 52 09-0, / Fax: +49 (0)7 11 - 52 09-6 14

Distributed by:

Pressure Gauges

Examples:



Model 213.40

Model 432.36,
Overpressure safety
up to 400 bar

Model 732.14,
Overpressure safety
up to 400 bar



Notes in accordance with Pressure Equipment Directive 97/23/EC

- The pressure gauges are "pressure accessories" in accordance with Article 1, Paragraph 2.1.4
- The volume of the pressure bearing housings of WIKA pressure gauges is < 0.1 L
- The pressure gauges carry CE marking for Fluid Group 1G in accordance with Annex 2, Table 1 when their permissible working pressure exceeds 200 bar

Pressure gauges that do not carry the CE mark are manufactured in accordance with Article 3, Paragraph 3 "Sound engineering practice".

Applied standards

- EN 837-1 Bourdon tube pressure gauges, dimensions, metrology, requirements and testing
- EN 837-2 Selection and installation recommendations for pressure gauges
- EN 837-3 Diaphragm and capsule pressure gauges, dimensions, metrology, requirements and testing

Specifications: see data sheet on www.wika.de

Subject to technical modifications.

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www.wika.de

2408976.03 02/2010

1. Safety



WARNING!

Before installation, commissioning and operation, ensure that the appropriate pressure gauge has been selected in terms of measuring range, design and suitable wetted material (corrosion) for the specific measuring conditions. In order to guarantee the measuring accuracy and long-term stability specified, the corresponding load limits must be observed.

Only qualified persons authorised by the plant manager are permitted to install, maintain and service the pressure gauges.

For hazardous media such as oxygen, acetylene, flammable or toxic gases or liquids, and refrigeration plants, compressors, etc., in addition to all standard regulations, the appropriate existing codes or regulations must also be followed.

After an external fire, pressure media can leak out, particularly at soft solder joints. All gauges must be checked and, if necessary, replaced before recommissioning the plant.

Non-observance of the respective regulations can result in serious injury and/or damage to equipment.

2. Mechanical connection

In accordance with the general technical regulations for pressure gauges (e.g. EN 837-2). When screwing the gauges in the force required for this must not be applied through the case or terminal box, rather only through the spanner flats provided for this purpose (using a suitable tool).

Mounting with
spanner



Correct sealing of pressure gauge connections with parallel threads ① must be made using suitable sealing rings, sealing washers or WIKA profile seals. The sealing of tapered threads (e.g. NPT threads) is made by providing the thread ② with additional sealing material such as, for example, PTFE tape (EN 837-2).



The torque depends on the seal used. Connecting the gauge using a clamp socket or a union nut is recommended, so that it is easier to orientate the gauge correctly. When a blow-out

device is fitted to a pressure gauge, it must be protected against being blocked by debris and dirt. With safety pressure gauges (see dial symbol Ⓢ) it must be ensured that the free space behind the blow-out back is at least 15 mm.



After mounting, set the compensating valve (if available) from CLOSE to OPEN.

With models 4 and 7, do not open the flange mounting screws.

Requirements for the installation point

If the line to the gauge is not sufficiently rigid for vibration-free mounting, a pipe-support bracket should be used to secure it (possibly via a flexible capillary). If vibration cannot be prevented through suitable installation, liquid-filled gauges should be used. The instruments should be protected against coarse dirt and wide fluctuations in ambient temperature.

3. Permissible ambient and operating temperatures

When mounting the pressure gauge it must be ensured that, taking into consideration the influence of convection and heat radiation, no deviation above or below the permissible ambient and medium temperatures can occur. The influence of temperature on the display accuracy must be observed.

4. Storage

The pressure gauge should be kept in its original packing until installation. The gauge should be protected from external damage during storage. Storage temperature range: -40 ... +70 °C. Protect the gauges from humidity and dust.

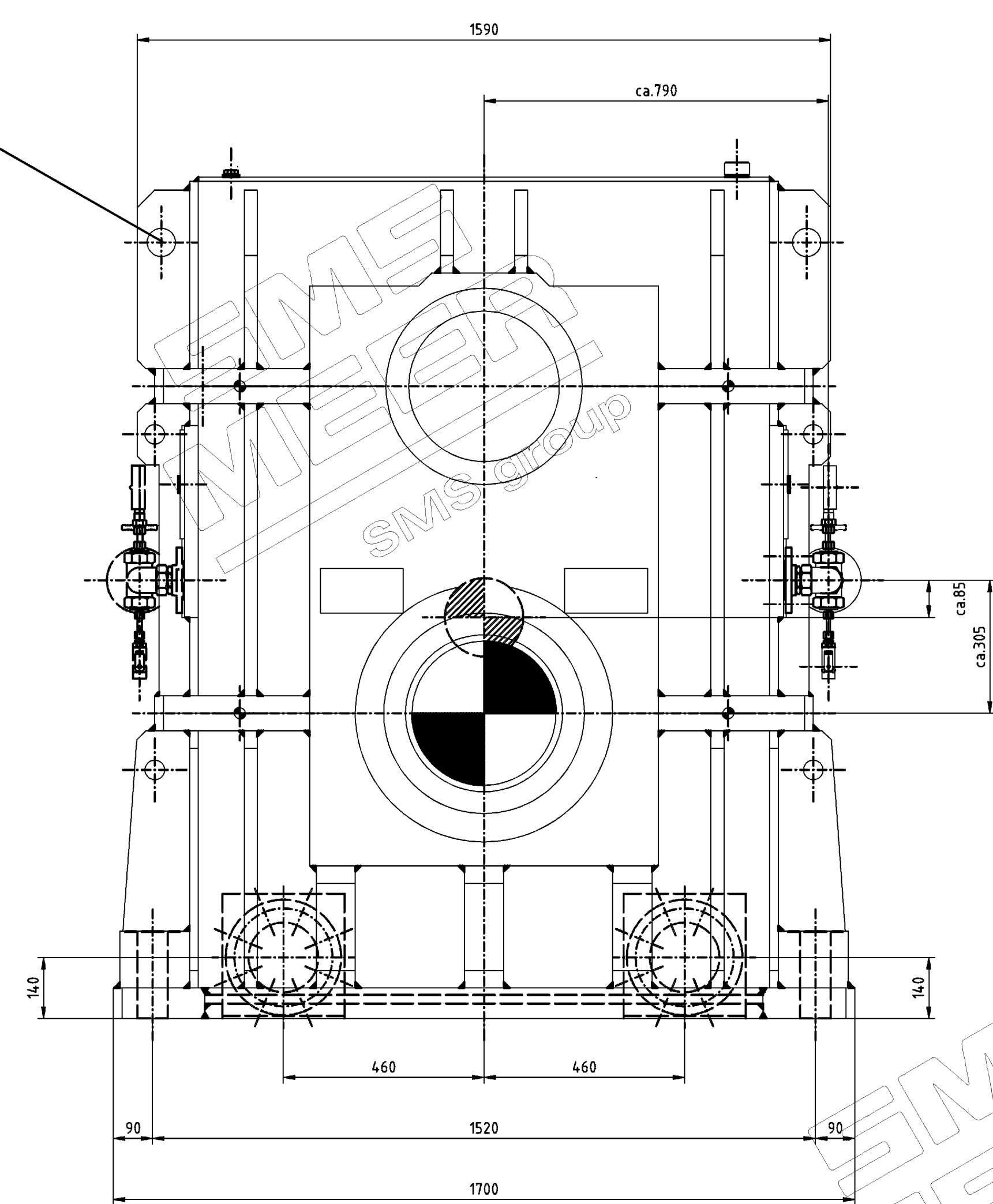
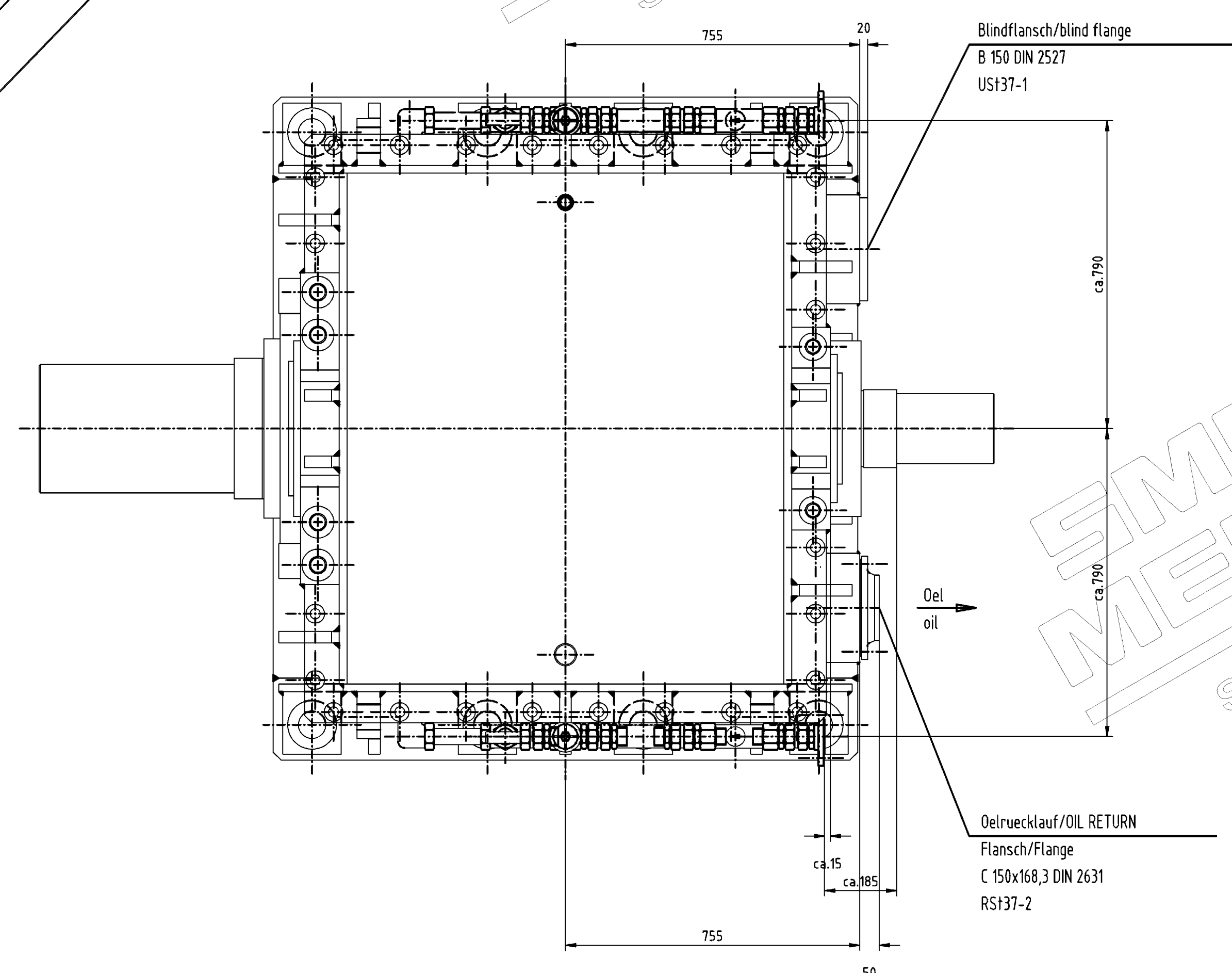
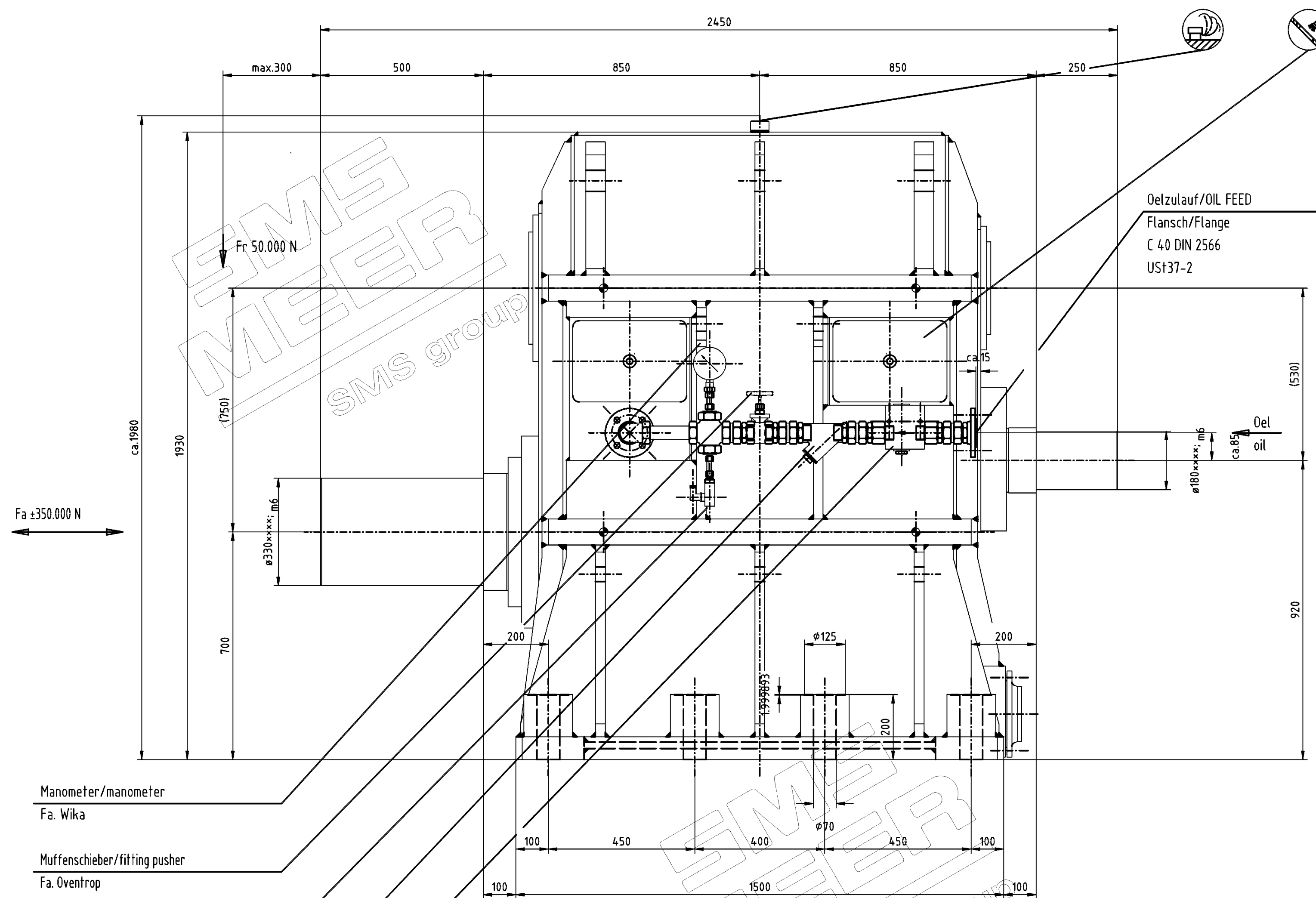
5. Maintenance / Repairs

The instruments are maintenance-free. Checks should be carried out on a regular basis to ensure the measuring accuracy of the pressure gauge. The checks or recalibrations must be carried out by qualified skilled personnel with the appropriate equipment. When dismounting, close the compensating valve (if available).

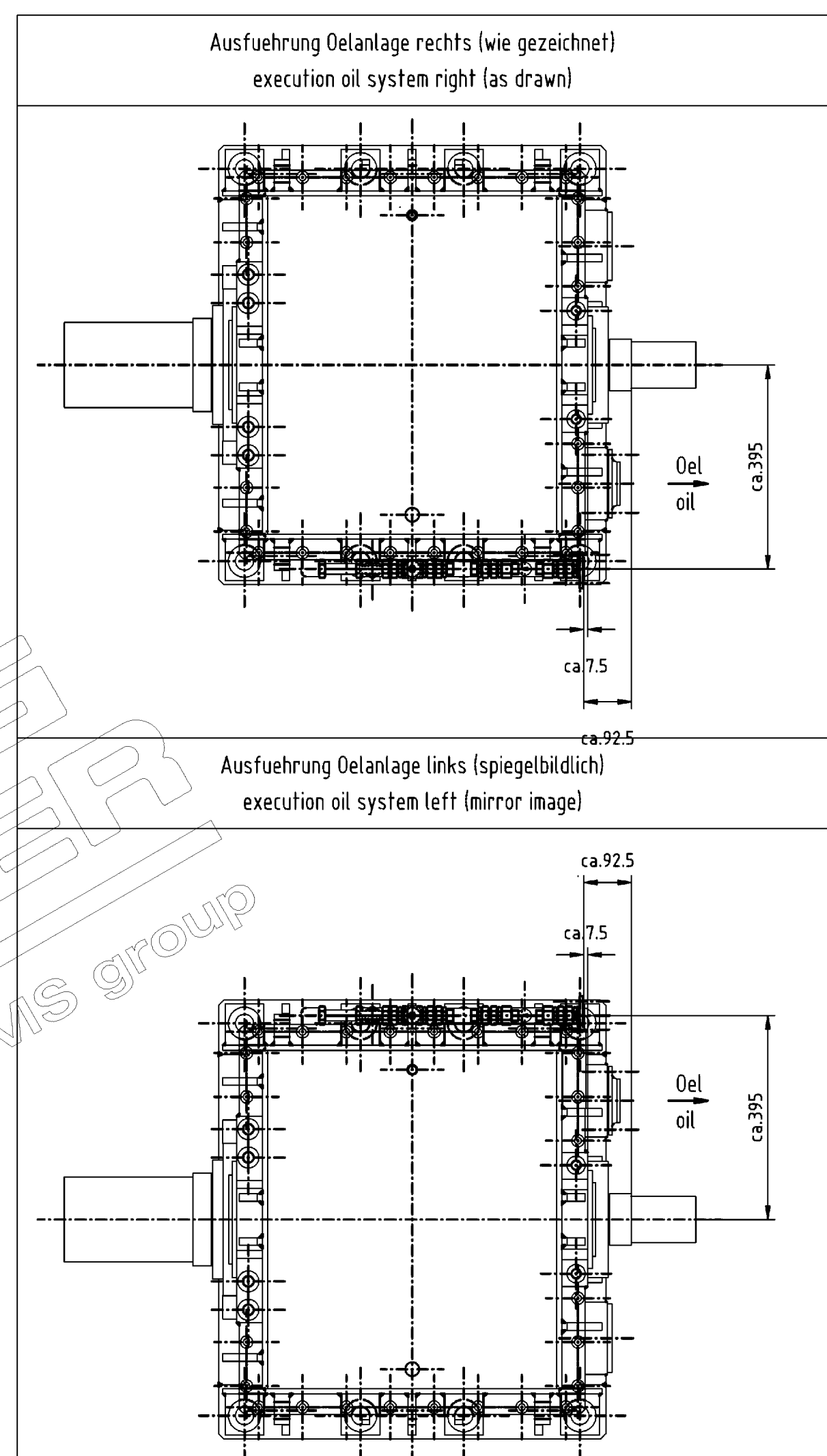



WARNING!

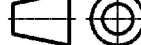

Residual media in dismantled pressure gauges can result in a risk to personnel, the environment and equipment. Take sufficient precautionary measures.

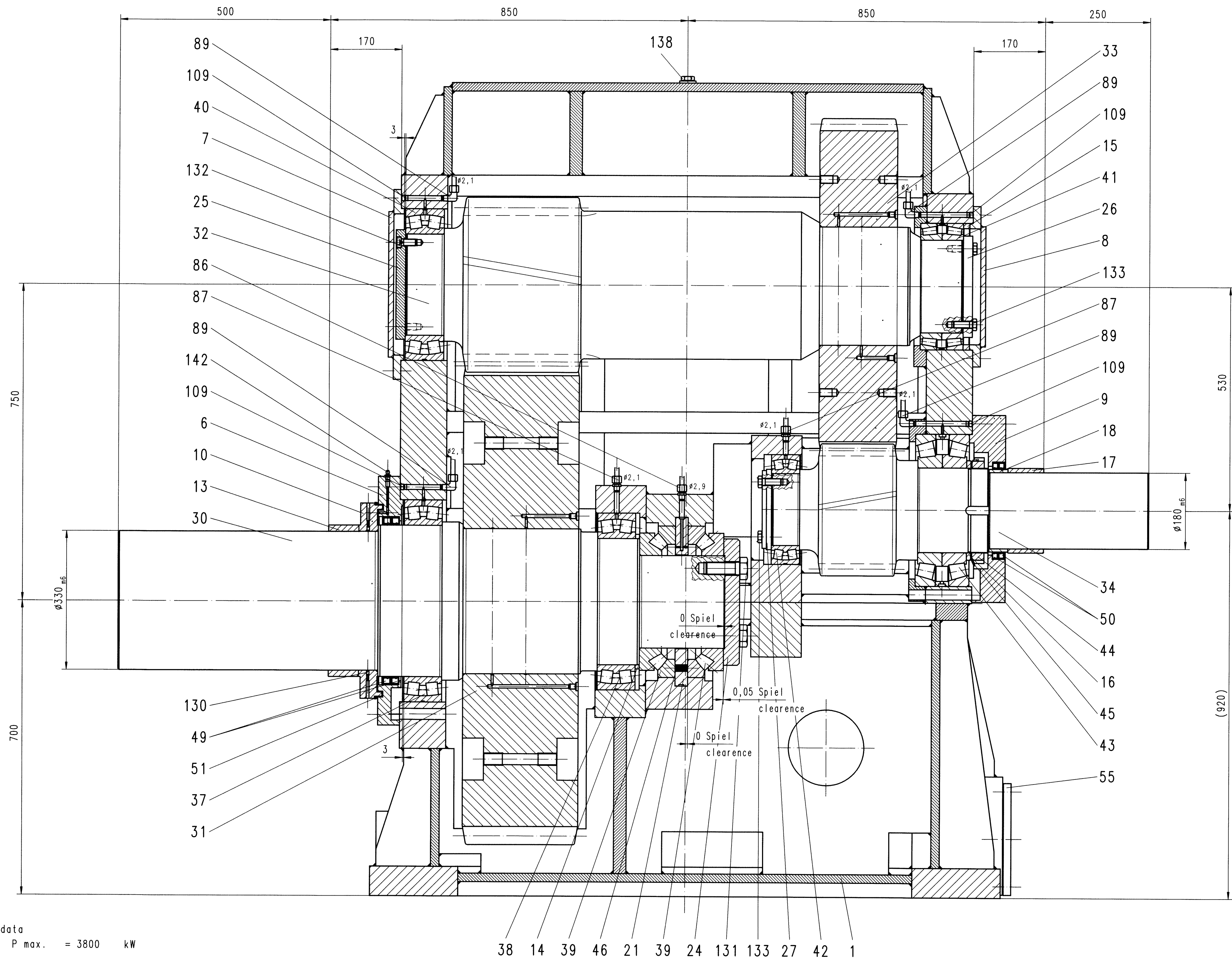


Technische Daten/technical data	
P _{nenn} = 1900 kW;	P _{max.} = 3800 kW
P _{eff} = 1130,5 kW	
n ₁ = 750 1/min	
T _{1nenn} = 24.200 Nm;	T _{1max.} = 48.400 Nm
i _{soll} = 8,427	
i _{ist} = 8,3543	
n ₂ = 89,77 1/min	
T _{2nenn} = 202.200 Nm;	T _{2max.} = 404.400 Nm
F _a = ±350.000 N;	F _r = 50.000 N



Pos.-Item --	Stack - place 1x1	Dispo Nr. - dispo no. 64490	Auftrags Nr. - order no. 1110101	/02	Baumt - type SNC2-Z750S
Masstab - scale 1:10		Gewicht - weight [kg]		Benennung - designation	
Werkstoff - material St		Modell - pattern		Massblatt	
Nicht tolerierte Masse DIN 7568 m		220	Datum	Name	SNC 2-750 S
		Bearb.	19.11.	new	
		Gepr.			
				Zeichnungs Nr. - drawing no.	
		D-2200 Wuppertal		7147M1	
				von Zeichn. - from drawing	
				Ort - place : 1110101WICKEL	
				Blatt-page 1	
				von-of 1	
Index	Änder. - modif.	Datum	Name		

Fertigungsvorschriften Manufacturing Instructions				Ursprung / Origin				Fertigsgewicht Finished weight 14.000 kg		Modell-Nr. Part-Num.			
SN 200								Werksstoff / Material				 Projektionsmethode 1 First angle projection method 1	
					Datum Date	Name		Typ Type	Maßstab Scale				
				Bearb. Drawn	06.06.11	F. Rehag		Benennung	1:10				
				Geprüft Checked	09.06.11	6816 FR		Titel	STIRNRADGETRIEBE				
				Norm Stand				spur gearbox	Sach-Nr.	Drawing-No.	Blatt Sheet		
									0101056-30.010		2 Blät 2 Sheets		
Ausg. Issue	Änderung Revision	Datum Date	Name					Ersatz fun./Supersedes:	Ersetzt durch/Supersedes by:				
													
								SMS group					



Technische Daten/technical data

P_{nenn} = 1900 kW; P_{max.} = 3800 kW
P_{eff} = 1130,5 kW
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i_{soll} = 8,427
i_{ist} = 8,3543
n₂ = 89,77 1/min
T_{2 nenn} = 202.200 Nm; T_{2 max.} = 404.400 Nm
F_a = ±350.000 N; F_r = 50.000 N

Schmierung/lubrication

Zentralschmierung/central lubrication

Öl/oil = CLP 220
Ölmenge/oil quantity = 100 l/min
Öldruck/oil pressure = ca. 2 bar
Ölzulauftemperatur/oil input temperature = ca. 40 °C

Pos.- item	Stueck - piece	Dispo Nr.- dispo no.	Auftrags Nr.- order no.	Bauart - type
	1 + 1		111101.01/02	SNC2-750S
Masstab - scale	1:5	Gewicht - weight	Benennung - designation	
Werkstoff - material		Modell - pattern	Disposition	
Nicht tolerierte Masse DIN 7168 m		2010 Datum Name	SNC 2-750 S	
		Bearb. 18.11. ert	Zeichnungs Nr.- drawing no.	
		Gepr.	64490	
			von Zeichng.- from drawing:	
			Ort - place : 11110101\ER5WC380	
Index/ender.- modif. Datum	Name			



Dr. W. Ostermann
DOB-Getriebebau

Bill of material

Order-no.: 111101.01

Drawing-no.: 64490

Page: 1 / 11

Unit: SNC2-750S

kg/piece:

Piece: 1

Customer: SMS Meer, Mönchengladbach

Date: 3.11.2011

Name: ama

Item	Piece	Object	Drawing-no./norm	Material	kg/piece	Code	Remarks
1	1	HOUSING	64491A	St 52-3		1	
2	4	INSPECTION COVER Gr. 9	WN 108	RSt 37-2	6,8	2	
3	4	FLAT PACKING Gr. 9	WN 110	Tesnid Uni blau	0,1	2	
4							
5							
6	1	LABYRINTH COVER ø590/380x59	64550	St 52-3	58,0	1	
7	1	SEALING COVER ø450x37	64551	St 52-3 St 37-2	20,0	1	
8	1	SEALING COVER ø380x40	64552	St 52-3 St 37-2	15,0	1	
9	1	SEALING COVER ø450/210x88	64553	St 52-3	65,0	1	
10	1	LABYRINTH RING ø464/330x56	64554	St 52-3	28,0	1	
11							
12							
13	1	DISTANCE SLEEVE ø360/330x72	64555 DIN 2448	St 52 Rohr/ TUBE 368x22,2	9,2	1	
14	1	DISTANCE SLEEVE ø320/300x9,5	64556 DIN 2448	St 52 Rohr/TUBE 330x17,5	0,7	1	



Dr. W. Ostermann
DOB-Getriebebau

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Page: 2 / 11

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kg/piece:

Piece: 1

Customer: SMS Meer, Mönchengladbach

Date: 3.11.2011

Name: ama

Item	Piece	Object	Drawing-no./norm	Material	kg/piece	Code	Remarks
15	1	DISTANCE SLEEVE ø300/275x15	64557 DIN 2448	St 52 Rohr/ TUBE 305x17,5	1,3	1	
16	1	DISTANCE SLEEVE ø235/200x10	64558 DIN 2448	St 52 Rohr/ TUBE 244,5x25	0,9	1	
17	1	DISTANCE SLEEVE ø200/180x85	64559 DIN 2448	St 52 Rohr/ TUBE 203x25	3,9	1	
18	1	INTERNAL RING IR 180x195x45 EGS		St	1,6	3	Fa. INA
19							
20							
21	1	DISK ø400/223x32	64560	42 CrMo 4	21,0	1	
22							
23							
24	1	END DISK ø300x40	64561	42 CrMo 4	19,0	1	
25	1	END DISK ø260x22	077.240.01	St 60	9,1	1	
26	1	END DISK ø240x22	077.220.00	St 60	7,8	1	
27	1	END DISK ø190/184x22	WN 117 ø170	St 60	5,3	2	
28							



Dr. W. Ostermann
DOB-Getriebebau

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Page: 3 / 11

Unit: SNC2-750S

kg/piece:

Piece: 1

Customer: SMS Meer, Mönchengladbach

Date: 3.11.2011

Name: ama

Item	Piece	Object	Drawing-no./norm	Material	kg/piece	Code	Remarks
29							
30	1	EXIT SHAFT ø376x1443	64562	42 CrMo 4	925,0	1	
31	1	SPUR WHEEL ø1157/345x275 No of teeth-61, Aprox width-280 mm	64563 750-3,050	18CrNiMo7-	1720,0	1	
32	1	PINION SHAFT ø415x1323 No of teeth-20 Aprox width-280 mm	64564A 750-3,050	18CrNiMo7-	848,0	1	
33	1	SPUR WHEEL ø795/280x185 No of teeth- 63,Aprox width-190 mm	64565 530-2,739	18CrNiMo7-	580,0	1	
34	1	INPUT PINION SHAFT ø313x895 No of teeth-23, Aprox width-190 mm	64566 530-2,739	18CrNiMo7-	245,0	1	
35							
36							
37	1	SPHERICAL ROLLER BEA 23972 CC/W33	DIN 635	St with steel cage	46,0	3	
38	1	SPHERICAL ROLLER BEA 23960 CC/W33	DIN 635	St with steel cage	39,5	3	
39	2	THRUST-SPERICAL BEA. 29344 E	DIN 616	St with steel cage	33,5	3	
40	1	SPHERICAL ROLLER BEA 23048 CC/W33	DIN 635	St with steel cage	33,5	3	
41	1	MAT.TAPER ROLLER BEA 32944/DF	DIN 720	St with steel cage	21,0	3	
42	1	SPHERICAL ROLLER BEA 23034 CC/W33	DIN 635	St with steel cage	13,0	3	



Dr. W. Ostermann
DOB-Getriebebau

Bill of material

Order-no.: 111101.01

Drawing-no.: 64490

Page: 4 / 11

Unit: SNC2-750S

kg/piece:

Piece: 1

Customer: SMS Meer, Mönchengladbach

Date: 3.11.2011

Name: ama

Item	Piece	Object	Drawing-no./norm	Material	kg/piece	Code	Remarks
43	1	MAT.TAPER ROLLER BEA 30240 J2/DF	DIN 720	St with steel cage	52,0	3	
44	1	LOCK NUTS KM 40 M200x3	DIN 981	St	3,4	3	
45	1	LOCKING WASHER MB 40 ø262/200x2,5	DIN 5406	St	0,3	3	
46	12	PRESSURE SPRING Da= 15, d= ø2,8 Lo= 38	Bestell-Nr. 1954	F-St	0,1	3	Fa. Uwe Hopp
47							
48							
49	2	ROTARY SHAFT SEAL B2 360x400x20	DIN 3760	72 NBR 902	1,1	3	
50	2	ROTARY SHAFT SEAL B2 195x230x15	DIN 3760	72 NBR 902	0,4	3	
51	1	V-WASHERS CR 404502 ø418/405x10,5	style VR3	NBR	0,2	3	Fa. SKF
52							
53							
54	1	FLANGE C 150x168,3	DIN 2631 PN 6	RSt 37-2	5,2	3	
55	1	BLIND FLANGE B 150	DIN 2527 PN 6	USt 37-1	7,5	3	
56	2	THREAD FLANGE C 40	DIN 2566 PN 16	USt 37-1	1,8	3	



Dr. W. Ostermann
DOB-Getriebebau

Bill of material

Order-no.: 111101.01

Drawing-no.: 64490

Page: 5 / 11

Unit: SNC2-750S

kg/piece:

Piece: 1

Customer: SMS Meer, Mönchengladbach

Date: 3.11.2011

Name: ama

Item	Piece	Object	Drawing-no./norm	Material	kg/piece	Code	Remarks
57	2	FLAT PACKING DN 150	DIN 2690 PN 6	ItOe	0,1	3	
58	1	FLAT PACKING DN 40	DIN 2690 PN 40	ItOe	0,1	3	
59	1	FLOW LIMITER Typ : SP/SMB 6/2/0/1 without electr. Sign	270 aler for	St	5,8	3	Fa. Voqe
		kabel installation for 100 l/min, CLP order no.: 24-2706	connection 220 and 40° -1270	G 1 1/4 C			
60	1	MUD FLAP DN 40, PN 16, G1 1/2 strainer inset 0,6	art.-no. 112 00 12 100 mesh	Rq per cm ²	1,0	3	Fa. Oventrop
61	1	SLIDER DN 40, PN 16, G1 1/2 with handwheel	Art.-Nr. 104 10 12 DIN 3352	Rq/Ms	1,2	3	Fa. Oventrop
62	1	PRESSURE SWITCH type = 18 D conn. = G 1/4	order no. 0880300 p = 0,5-8,0	St Oel CLP220 bar	0,2	3	Fa. Herion
		adjusted at 1 bar voltage 24 V incl. Plug	falling DC at DIN 43	650			
		type = 0523056, 90°	without cabel				
63	1	MANOMETER glycerinfilled conn. = G 1/2 at	D 100 DIN 16064 below	p = 0-16 b	1,0	3	Fa. Wika
64	7	SCREW JOINT GE 42-PLR		St	0,6	3	Fa. EO
65	4	SCREW JOINT GZ 42-L		St	0,7	3	Fa. EO
66	2	SCREW JOINT RI 1 1/4 x 1 1/2		St	0,6	3	Fa. EO
67	1	SCREW JOINT K 42-PL		St	1,8	3	Fa. EO



Dr. W. Ostermann
DOB-Getriebebau

Bill of material

Order-no.: 111101.01

Drawing-no.: 64490

Page: 6 / 11

Unit: SNC2-750S

kg/piece:

Piece: 1

Customer: SMS Meer, Mönchengladbach

Date: 3.11.2011

Name: ama

Item	Piece	Object	Drawing-no./norm	Material	kg/piece	Code	Remarks
68	1	SCREW JOINT EW 42-PLR-ED		St	1,2	3	Fa. EO
69	1	SCREW JOINT KOR 42/12-PL		St	0,5	3	Fa. EO
70	1	SCREW JOINT KOR 42/10-PL		St	0,5	3	Fa. EO
71	1	SCREW JOINT GE 10-PLR		St	0,1	3	Fa. EO
72	1	SCREW JOINT MAV 12-PSR		St	0,1	3	Fa. EO
73							
74							
75	1	LUBRICATION PLAN	64567	St		1	
76	4	DISTRIBUTOR ø38x6x300	WN 511/3 DIN 2448	St 37 gebeizt	1,4	3/1	
77	2	SCREW JOINT EW 42-PLR-ED		St	1,2	3	Fa. EO
78	2	SCREW JOINT W 42-PL		St	1,1	3	Fa. EO
79	2	SCREW JOINT K 42-PL		St	1,8	3	Fa. EO
80	1	SCREW JOINT T 42-PL		St	1,4	3	Fa. EO
81	4	SCREW JOINT KOR 42/28-PL		St	0,5	3	Fa. EO



Dr. W. Ostermann
DOB-Getriebebau

Bill of material

Order-no.: 111101.01

Drawing-no.: 64490

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Unit: SNC2-750S

kg/piece:

Piece: 1

Customer: SMS Meer, Mönchengladbach

Date: 3.11.2011

Name: ama

Item	Piece	Object	Drawing-no./norm	Material	kg/piece	Code	Remarks
82	4	SCREW JOINT EVGE 28-PLR-ED		St	0,5	3	Fa. EO
83	1	SCREW JOINT KOR 42/18-PL		St	0,5	3	Fa. EO
84	1	SCREW JOINT K 18-PL		St	0,5	3	Fa. EO
85	3	SCREW JOINT KOR 18/10-PL		St	0,1	3	Fa. EO
86	1	SCREW JOINT GE 10-PL/R1/4 keq. with blend ø2,9	54886 DIN 551	St	0,1	3/1	Fa. EO
87	2	SCREW JOINT GE 10-PL/R1/4 keq. with blend ø2,1	54886 DIN 551	St	0,1	3/1	Fa. EO
88	4	SCREW JOINT GE 10-PLR keq.		St	0,1	3	Fa. EO
89	4	SCREW JOINT WE 10-PLR with blend ø2,1	54886 DIN 551	St	0,1	3/1	Fa. EO
90	8	SCREW JOINT GE 12-PL/R1/4 keq.		St	0,1	3	Fa. EO
91	2	SCREW JOINT RI 1 x 3/4		St	0,3	3	Fa. EO
92	2	SCREW JOINT GE 22-PLR		St	0,2	3	Fa. EO
93	2	SCREW JOINT W 22-PL		St	0,3	3	Fa. EO
94	2	SCREW JOINT T 22-PL		St	0,4	3	Fa. EO
95	4	SCREW JOINT KOR 22/12-PL		St	0,2	3	Fa. EO



Dr. W. Ostermann
DOB-Getriebebau

Bill of material

Order-no.: 111101.01

Drawing-no.: 64490

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Unit: SNC2-750S

kg/piece:

Piece: 1

Customer: SMS Meer, Mönchengladbach

Date: 3.11.2011

Name: ama

Item	Piece	Object	Drawing-no./norm	Material	kg/piece	Code	Remarks
96	12	SCREW JOINT W 12-PL		St	0,1	3	Fa. EO
97	6	FLAT JET NOZZLE FU 1 Type 652. 766. 30 Q = 8,0 l/min		Ms 58	0,1	2	Fa. Lechler
98	4	FLAT JET NOZZLE FU 1 Type 652. 726. 30 Q = 6,3 l/min		Ms 58	0,1	2	Fa. Lechler
99	2	FLAT JET NOZZLE FU 1 Type 652. 646. 30 Q = 4,0 l/min		Ms 58	0,1	2	Fa. Lechler
100	1	PIPE ø42x2		St	0,1	3	Fa. EO
101	1	PIPE ø22x1,5		St	0,1	3	Fa. EO
102	1	PIPE ø18x1,5		St	0,1	3	Fa. EO
103	1	PIPE ø12x1		St	0,1	3	Fa. EO
104	1	PIPE ø10x1		St	0,1	3	Fa. EO
105	1	LOCKING SCREW G 1 1/2	WN 505 DIN 910	St	0,4	2	
106	4	LOCKING SCREW G 1	WN 505 DIN 910	St	0,2	2	
107	1	WASHER A 48x55x2	DIN 7603	Cu	0,1	3	
108	4	WASHER A 33x39x2	DIN 7603	Cu	0,1	3	
109	4	LOCKING SCREW G 1/4	DIN 906	St	0,1	3	



Dr. W. Ostermann
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Bill of material

Order-no.: 111101.01

Drawing-no.: 64490

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Unit: SNC2-750S

kg/piece:

Piece: 1

Customer: SMS Meer, Mönchengladbach

Date: 3.11.2011

Name: ama

Item	Piece	Object	Drawing-no./norm	Material	kg/piece	Code	Remarks
110							
111							
112	2	HEXAGON SCREW M42 x 460	DIN 931	8.8	5,5	3	Pos./Ite 1
113	2	HEXAGON SCREW M42 x 340	DIN 931	8.8	4,2	3	Pos./Ite 1
114	2	HEXAGON SCREW M42 x 320	DIN 931	8.8	3,9	3	Pos./Ite 1
115	4	HEXAGON SCREW M42 x 300	DIN 931	8.8	3,7	3	Pos./Ite 1
116	2	ADJUSTING SCREW M42 x 300	DIN 939	8.8	3,7	3	Pos./Ite 1
117	2	HEXAGON NUT M42	DIN 934	8	0,6	3	Pos./Ite 1
118	12	DISK 43	DIN 6916	C 45	0,2	3	Pos./Ite 1
119	2	HEXAGON SCREW M36 x 240	DIN 931	8.8	2,2	3	Pos./Ite 1
120	2	DISK 37	DIN 6916	C 45	0,1	3	Pos./Ite 1
121	52	HEXAGON SCREW M24 x 110	DIN 931	8.8	0,5	3	Pos./Ite 1
122	2	HEXAGON SCREW M24 x 70	DIN 933	8.8	0,3	3	Pos./Ite 1
123	52	HEXAGON NUT M24	DIN 934	8	0,1	3	Pos./Ite 1



Dr. W. Ostermann
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Bill of material

Order-no.: 111101.01

Drawing-no.: 64490

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Unit: SNC2-750S

kg/piece:

Piece: 1

Customer: SMS Meer, Mönchengladbach

Date: 3.11.2011

Name: ama

Item	Piece	Object	Drawing-no./norm	Material	kg/piece	Code	Remarks
124	54	DISK 25	DIN 6916	C 45	0,1	3	Pos./Ite 1
125	16	CYLINDRICAL PIN ø25m6 x 50	DIN 7979 Form D	St 50k	0,2	3	Pos./Ite 1
126	24	HEXAGON SCREW M10 x 20	DIN 933	8.8	0,1	3	Pos./Ite 2
127	10	HEXAGON SCREW M24 x 80	DIN 931	8.8	0,4	3	Pos./Ite 6
128	16	HEXAGON SCREW M20 x 50	DIN 933	8.8	0,2	3	Pos./Ite 7,8
129	8	HEXAGON SCREW M20 x 110	DIN 931	8.8	0,3	3	Pos./Ite 9
130	2	THREADED PIN M6 x 12	DIN 914	45H	0,1	3	Pos./Ite 10
131	7	HEXAGON SCREW M30 x 80	DIN 931	10.9	0,6	3	Pos./Ite 24
132	6	CHEESE HEAD SCREW M16 x 35	DIN 6912	8.8	0,1	3	Pos./Ite 25
133	10	HEXAGON SCREW M16 x 45	DIN 933	8.8	0,1	3	Pos./Ite 26,27
134	16	HEXAGON SCREW M16 x 40	DIN 933	8.8	0,1	3	Pos./Ite 54,55
135	4	HEXAGON SCREW M16 x 35	DIN 933	8.8	0,1	3	Pos./Ite 56
136							
137							



Dr. W. Ostermann
DOB-Getriebebau

Bill of material

Order-no.: 111101.01

Drawing-no.: 64490

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Unit: SNC2-750S

kg/piece:

Piece: 1

Customer: SMS Meer, Mönchengladbach

Date: 3.11.2011

Name: ama

Item	Piece	Object	Drawing-no./norm	Material	kg/piece	Code	Remarks
138	1	LOCKING SCREW G 1	WN 505 DIN 910	St	0,2	2	
139	4	LOCKING SCREW G 1	DIN 908	St	0,2	3	
140	6	WASHER A 33x39x2	DIN 7603	Cu	0,1	3	
141	1	BREATHER GN 552-57-G 1 A-1	WN 507	K-St	0,1	3	Fa. elesa/ GANter
142	1	LUBRICATION NIPPLE G 1/8	H1	St	0,1	3	Fa. Tecalemi
143	1	TYPE PLATE DOB 105x105 deutsch/englisch	WN 518/2	Al	0,1	2	
144							
145							
146	1	CARDAN SHAFT HUB output		St		4	
147	1	COUPLING input		St		4	



Dr. W. Ostermann
DOB-Getriebebau

Bill of material

Order-no.: 111101.02

Drawing-no.: 64490

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Unit: SNC2-750S

kg/piece:

Piece: 1

Customer: SMS Meer, Mönchengladbach

Date: 3.11.2011

Name: ama

Item	Piece	Object	Drawing-no./norm	Material	kg/piece	Code	Remarks
1	1	HOUSING	64491A	St 52-3		1	
2	4	INSPECTION COVER Gr. 9	WN 108	RSt 37-2	6,8	2	
3	4	FLAT PACKING Gr. 9	WN 110	Tesnid Uni blau	0,1	2	
4							
5							
6	1	LABYRINTH COVER ø590/380x59	64550	St 52-3	58,0	1	
7	1	SEALING COVER ø450x37	64551	St 52-3 St 37-2	20,0	1	
8	1	SEALING COVER ø380x40	64552	St 52-3 St 37-2	15,0	1	
9	1	SEALING COVER ø450/210x88	64553	St 52-3	65,0	1	
10	1	LABYRINTH RING ø464/330x56	64554	St 52-3	28,0	1	
11							
12							
13	1	DISTANCE SLEEVE ø360/330x72	64555 DIN 2448	St 52 Rohr/ TUBE 368x22,2	9,2	1	
14	1	DISTANCE SLEEVE ø320/300x9,5	64556 DIN 2448	St 52 Rohr/TUBE 330x17,5	0,7	1	



Dr. W. Ostermann
DOB-Getriebebau

Bill of material

Order-no.: 111101.02

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Unit: SNC2-750S

kg/piece:

Piece: 1

Customer: SMS Meer, Mönchengladbach

Date: 3.11.2011

Name: ama

Item	Piece	Object	Drawing-no./norm	Material	kg/piece	Code	Remarks
15	1	DISTANCE SLEEVE ø300/275x15	64557 DIN 2448	St 52 Rohr/ TUBE 305x17,5	1,3	1	
16	1	DISTANCE SLEEVE ø235/200x10	64558 DIN 2448	St 52 Rohr/ TUBE 244,5x25	0,9	1	
17	1	DISTANCE SLEEVE ø200/180x85	64559 DIN 2448	St 52 Rohr/ TUBE 203x25	3,9	1	
18	1	INTERNAL RING IR 180x195x45 EGS		St	1,6	3	Fa. INA
19							
20							
21	1	DISK ø400/223x32	64560	42 CrMo 4	21,0	1	
22							
23							
24	1	END DISK ø300x40	64561	42 CrMo 4	19,0	1	
25	1	END DISK ø260x22	077.240.01	St 60	9,1	1	
26	1	END DISK ø240x22	077.220.00	St 60	7,8	1	
27	1	END DISK ø190/184x22	WN 117 ø170	St 60	5,3	2	
28							



Dr. W. Ostermann
DOB-Getriebebau

Bill of material

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Unit: SNC2-750S

kg/piece:

Piece: 1

Customer: SMS Meer, Mönchengladbach

Date: 3.11.2011

Name: ama

Item	Piece	Object	Drawing-no./norm	Material	kg/piece	Code	Remarks
29							
30	1	EXIT SHAFT ø376x1443	64562	42 CrMo 4	925,0	1	
31	1	SPUR WHEEL ø1157/345x275	64563 750-3,050	18CrNiMo7-	1720,0	1	
32	1	PINION SHAFT ø415x1323	64564A 750-3,050	18CrNiMo7-	848,0	1	
33	1	SPUR WHEEL ø795/280x185	64565 530-2,739	18CrNiMo7-	580,0	1	
34	1	INPUT PINION SHAFT ø313x895	64566 530-2,739	18CrNiMo7-	245,0	1	
35							
36							
37	1	SPHERICAL ROLLER BEA 23972 CC/W33	DIN 635	St with steel cage	46,0	3	
38	1	SPHERICAL ROLLER BEA 23960 CC/W33	DIN 635	St with steel cage	39,5	3	
39	2	THRUST-SPERICAL BEA. 29344 E	DIN 616	St with steel cage	33,5	3	
40	1	SPHERICAL ROLLER BEA 23048 CC/W33	DIN 635	St with steel cage	33,5	3	
41	1	MAT.TAPER ROLLER BEA 32944/DF	DIN 720	St with steel cage	21,0	3	
42	1	SPHERICAL ROLLER BEA 23034 CC/W33	DIN 635	St with steel cage	13,0	3	



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DOB-Getriebebau

Bill of material

Order-no.: 111101.02

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Unit: SNC2-750S

kg/piece:

Piece: 1

Customer: SMS Meer, Mönchengladbach

Date: 3.11.2011

Name: ama

Item	Piece	Object	Drawing-no./norm	Material	kg/piece	Code	Remarks
43	1	MAT.TAPER ROLLER BEA 30240 J2/DF	DIN 720	St with steel cage	52,0	3	
44	1	LOCK NUTS KM 40 M200x3	DIN 981	St	3,4	3	
45	1	LOCKING WASHER MB 40 ø262/200x2,5	DIN 5406	St	0,3	3	
46	12	PRESSURE SPRING Da= 15, d= ø2,8 Lo= 38	Bestell-Nr. 1954	F-St	0,1	3	Fa. Uwe Hopp
47							
48							
49	2	ROTARY SHAFT SEAL B2 360x400x20	DIN 3760	72 NBR 902	1,1	3	
50	2	ROTARY SHAFT SEAL B2 195x230x15	DIN 3760	72 NBR 902	0,4	3	
51	1	V-WASHERS CR 404502 ø418/405x10,5	style VR3	NBR	0,2	3	Fa. SKF
52							
53							
54	1	FLANGE C 150x168,3	DIN 2631 PN 6	RSt 37-2	5,2	3	
55	1	BLIND FLANGE B 150	DIN 2527 PN 6	USt 37-1	7,5	3	
56	2	THREAD FLANGE C 40	DIN 2566 PN 16	USt 37-1	1,8	3	



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DOB-Getriebebau

Bill of material

Order-no.: 111101.02

Drawing-no.: 64490

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Unit: SNC2-750S

kg/piece:

Piece: 1

Customer: SMS Meer, Mönchengladbach

Date: 3.11.2011

Name: ama

Item	Piece	Object	Drawing-no./norm	Material	kg/piece	Code	Remarks
57	2	FLAT PACKING DN 150	DIN 2690 PN 6	ItOe	0,1	3	
58	1	FLAT PACKING DN 40	DIN 2690 PN 40	ItOe	0,1	3	
59	1	FLOW LIMITER Typ : SP/SMB 6/2/0/1 without electr. Sign	270 aler for	St	5,8	3	Fa. Voqe
		kabel installation for 100 l/min, CLP order no.: 24-2706	connection 220 and 40° -1270	G 1 1/4 C			
60	1	MUD FLAP DN 40, PN 16, G1 1/2 strainer inset 0,6	art.-no. 112 00 12 100 mesh	Rq per cm ²	1,0	3	Fa. Oventrop
61	1	SLIDER DN 40, PN 16, G1 1/2 with handwheel	Art.-Nr. 104 10 12 DIN 3352	Rq/Ms	1,2	3	Fa. Oventrop
62	1	PRESSURE SWITCH type = 18 D conn. = G 1/4	order no. 0880300 p = 0,5-8,0	St Oel CLP220 bar	0,2	3	Fa. Herion
		adjusted at 1 bar voltage 24 V incl. Plug	falling DC at DIN 43	650			
		type = 0523056, 90°	without cabel				
63	1	MANOMETER glycerinfilled conn. = G 1/2 at	D 100 DIN 16064 below	p = 0-16 b	1,0	3	Fa. Wika
64	7	SCREW JOINT GE 42-PLR		St	0,6	3	Fa. EO
65	4	SCREW JOINT GZ 42-L		St	0,7	3	Fa. EO
66	2	SCREW JOINT RI 1 1/4 x 1 1/2		St	0,6	3	Fa. EO
67	1	SCREW JOINT K 42-PL		St	1,8	3	Fa. EO



Dr. W. Ostermann
DOB-Getriebebau

Bill of material

Order-no.: 111101.02

Drawing-no.: 64490

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Unit: SNC2-750S

kg/piece:

Piece: 1

Customer: SMS Meer, Mönchengladbach

Date: 3.11.2011

Name: ama

Item	Piece	Object	Drawing-no./norm	Material	kg/piece	Code	Remarks
68	1	SCREW JOINT EW 42-PLR-ED		St	1,2	3	Fa. EO
69	1	SCREW JOINT KOR 42/12-PL		St	0,5	3	Fa. EO
70	1	SCREW JOINT KOR 42/10-PL		St	0,5	3	Fa. EO
71	1	SCREW JOINT GE 10-PLR		St	0,1	3	Fa. EO
72	1	SCREW JOINT MAV 12-PSR		St	0,1	3	Fa. EO
73							
74							
75	1	LUBRICATION PLAN	64567	St		1	
76	4	DISTRIBUTOR ø38x6x300	WN 511/3 DIN 2448	St 37 gebeizt	1,4	3/1	
77	2	SCREW JOINT EW 42-PLR-ED		St	1,2	3	Fa. EO
78	2	SCREW JOINT W 42-PL		St	1,1	3	Fa. EO
79	2	SCREW JOINT K 42-PL		St	1,8	3	Fa. EO
80	1	SCREW JOINT T 42-PL		St	1,4	3	Fa. EO
81	4	SCREW JOINT KOR 42/28-PL		St	0,5	3	Fa. EO



Dr. W. Ostermann
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Bill of material

Order-no.: 111101.02

Drawing-no.: 64490

Page: 7 / 11

Unit: SNC2-750S

kg/piece:

Piece: 1

Customer: SMS Meer, Mönchengladbach

Date: 3.11.2011

Name: ama

Item	Piece	Object	Drawing-no./norm	Material	kg/piece	Code	Remarks
82	4	SCREW JOINT EVGE 28-PLR-ED		St	0,5	3	Fa. EO
83	1	SCREW JOINT KOR 42/18-PL		St	0,5	3	Fa. EO
84	1	SCREW JOINT K 18-PL		St	0,5	3	Fa. EO
85	3	SCREW JOINT KOR 18/10-PL		St	0,1	3	Fa. EO
86	1	SCREW JOINT GE 10-PL/R1/4 keq. with blend ø2,9	54886 DIN 551	St	0,1	3/1	Fa. EO
87	2	SCREW JOINT GE 10-PL/R1/4 keq. with blend ø2,1	54886 DIN 551	St	0,1	3/1	Fa. EO
88	4	SCREW JOINT GE 10-PLR keq.		St	0,1	3	Fa. EO
89	4	SCREW JOINT WE 10-PLR with blend ø2,1	54886 DIN 551	St	0,1	3/1	Fa. EO
90	8	SCREW JOINT GE 12-PL/R1/4 keq.		St	0,1	3	Fa. EO
91	2	SCREW JOINT RI 1 x 3/4		St	0,3	3	Fa. EO
92	2	SCREW JOINT GE 22-PLR		St	0,2	3	Fa. EO
93	2	SCREW JOINT W 22-PL		St	0,3	3	Fa. EO
94	2	SCREW JOINT T 22-PL		St	0,4	3	Fa. EO
95	4	SCREW JOINT KOR 22/12-PL		St	0,2	3	Fa. EO



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Bill of material

Order-no.: 111101.02

Drawing-no.: 64490

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Unit: SNC2-750S

kg/piece:

Piece: 1

Customer: SMS Meer, Mönchengladbach

Date: 3.11.2011

Name: ama

Item	Piece	Object	Drawing-no./norm	Material	kg/piece	Code	Remarks
96	12	SCREW JOINT W 12-PL		St	0,1	3	Fa. EO
97	6	FLAT JET NOZZLE FU 1 Type 652. 766. 30 Q = 8,0 l/min		Ms 58	0,1	2	Fa. Lechler
98	4	FLAT JET NOZZLE FU 1 Type 652. 726. 30 Q = 6,3 l/min		Ms 58	0,1	2	Fa. Lechler
99	2	FLAT JET NOZZLE FU 1 Type 652. 646. 30 Q = 4,0 l/min		Ms 58	0,1	2	Fa. Lechler
100	1	PIPE ø42x2		St	0,1	3	Fa. EO
101	1	PIPE ø22x1,5		St	0,1	3	Fa. EO
102	1	PIPE ø18x1,5		St	0,1	3	Fa. EO
103	1	PIPE ø12x1		St	0,1	3	Fa. EO
104	1	PIPE ø10x1		St	0,1	3	Fa. EO
105	1	LOCKING SCREW G 1 1/2	WN 505 DIN 910	St	0,4	2	
106	4	LOCKING SCREW G 1	WN 505 DIN 910	St	0,2	2	
107	1	WASHER A 48x55x2	DIN 7603	Cu	0,1	3	
108	4	WASHER A 33x39x2	DIN 7603	Cu	0,1	3	
109	4	LOCKING SCREW G 1/4	DIN 906	St	0,1	3	



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Bill of material

Order-no.: 111101.02

Drawing-no.: 64490

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Unit: SNC2-750S

kg/piece:

Piece: 1

Customer: SMS Meer, Mönchengladbach

Date: 3.11.2011

Name: ama

Item	Piece	Object	Drawing-no./norm	Material	kg/piece	Code	Remarks
110							
111							
112	2	HEXAGON SCREW M42 x 460	DIN 931	8.8	5,5	3	Pos./Ite 1
113	2	HEXAGON SCREW M42 x 340	DIN 931	8.8	4,2	3	Pos./Ite 1
114	2	HEXAGON SCREW M42 x 320	DIN 931	8.8	3,9	3	Pos./Ite 1
115	4	HEXAGON SCREW M42 x 300	DIN 931	8.8	3,7	3	Pos./Ite 1
116	2	ADJUSTING SCREW M42 x 300	DIN 939	8.8	3,7	3	Pos./Ite 1
117	2	HEXAGON NUT M42	DIN 934	8	0,6	3	Pos./Ite 1
118	12	DISK 43	DIN 6916	C 45	0,2	3	Pos./Ite 1
119	2	HEXAGON SCREW M36 x 240	DIN 931	8.8	2,2	3	Pos./Ite 1
120	2	DISK 37	DIN 6916	C 45	0,1	3	Pos./Ite 1
121	52	HEXAGON SCREW M24 x 110	DIN 931	8.8	0,5	3	Pos./Ite 1
122	2	HEXAGON SCREW M24 x 70	DIN 933	8.8	0,3	3	Pos./Ite 1
123	52	HEXAGON NUT M24	DIN 934	8	0,1	3	Pos./Ite 1



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DOB-Getriebebau

Bill of material

Order-no.: 111101.02

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Unit: SNC2-750S

kg/piece:

Piece: 1

Customer: SMS Meer, Mönchengladbach

Date: 3.11.2011

Name: ama

Item	Piece	Object	Drawing-no./norm	Material	kg/piece	Code	Remarks
124	54	DISK 25	DIN 6916	C 45	0,1	3	Pos./Ite 1
125	16	CYLINDRICAL PIN ø25m6 x 50	DIN 7979 Form D	St 50k	0,2	3	Pos./Ite 1
126	24	HEXAGON SCREW M10 x 20	DIN 933	8.8	0,1	3	Pos./Ite 2
127	10	HEXAGON SCREW M24 x 80	DIN 931	8.8	0,4	3	Pos./Ite 6
128	16	HEXAGON SCREW M20 x 50	DIN 933	8.8	0,2	3	Pos./Ite 7,8
129	8	HEXAGON SCREW M20 x 110	DIN 931	8.8	0,3	3	Pos./Ite 9
130	2	THREADED PIN M6 x 12	DIN 914	45H	0,1	3	Pos./Ite 10
131	7	HEXAGON SCREW M30 x 80	DIN 931	10.9	0,6	3	Pos./Ite 24
132	6	CHEESE HEAD SCREW M16 x 35	DIN 6912	8.8	0,1	3	Pos./Ite 25
133	10	HEXAGON SCREW M16 x 45	DIN 933	8.8	0,1	3	Pos./Ite 26,27
134	16	HEXAGON SCREW M16 x 40	DIN 933	8.8	0,1	3	Pos./Ite 54,55
135	4	HEXAGON SCREW M16 x 35	DIN 933	8.8	0,1	3	Pos./Ite 56
136							
137							



Dr. W. Ostermann
DOB-Getriebebau

Bill of material

Order-no.: 111101.02

Drawing-no.: 64490

Page: 11 / 11

Unit: SNC2-750S

kg/piece:

Piece: 1

Customer: SMS Meer, Mönchengladbach

Date: 3.11.2011

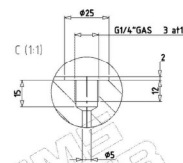
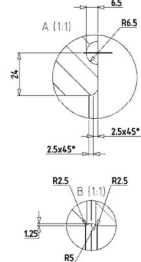
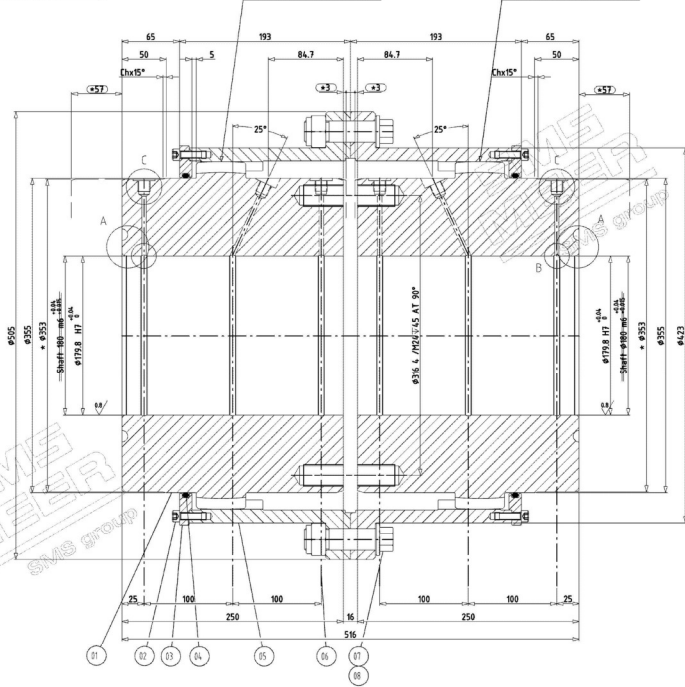
Name: ama

Item	Piece	Object	Drawing-no./norm	Material	kg/piece	Code	Remarks
138	1	LOCKING SCREW G 1	WN 505 DIN 910	St	0,2	2	
139	4	LOCKING SCREW G 1	DIN 908	St	0,2	3	
140	6	WASHER A 33x39x2	DIN 7603	Cu	0,1	3	
141	1	BREATHER GN 552-57-G 1 A-1	WN 507	K-St	0,1	3	Fa. elesa/ GANter
142	1	LUBRICATION NIPPLE G 1/8	H1	St	0,1	3	Fa. Tecalemi
143	1	TYPE PLATE DOB 105x105 deutsch/englisch	WN 518/2	Al	0,1	2	
144							
145							
146	1	CARDAN SHAFT HUB output		St		4	
147	1	COUPLING input		St		4	

* TRATTI DA ASPORTARE
AI MOZZI PISOLUNGATI

Asportare 0.15mm al Dia.Est.

Asportare 0.15mm al Dia.Est.



TECHNOLOGICAL DATA

MATERIAL	SHAFT: CAS TF - UNI 7874 SLEEVE: CAS TD - UNI 7874
GEAR TREATMENT	HARDENED & TEMPERED
TOOTHING DIN CLASS	8
LUBRICANT TYPE	GREASE
LUBRICANT QUANTITY	0.27 kg
LUBRICANT TYPE	EP GREASE - DIN51818 NLGI GRADE = 0

TECHNICAL DATA

NOMINAL OF COUPLING - G6-11A	NOMINAL OF DRIVE
Rated Torque T_k	2035 [kNm]
Max Peak Torque T_T	4884 [kNm]
Max Speed n_{max}	1800 [RPM]
Max Dynamic Angle Dyn*	0°10'
Max Design Angle Des*	1°00'
Service Factor S_F	

SHRINK-FIT DATA

Max Interference on $\Phi 90$	0.240 [mm]
Min Interference on $\Phi 90$	0.175 [mm]
Min Slipping Torque	112.260 [kNm]
Temperature for Shrinking	194 [°C]
Max Stress at Hot Bore-Edge	2317 [N/mm ²]
Max Pressure at Shaft	70 [N/mm ²]
Axial Force for Dismounting	178 [kN]

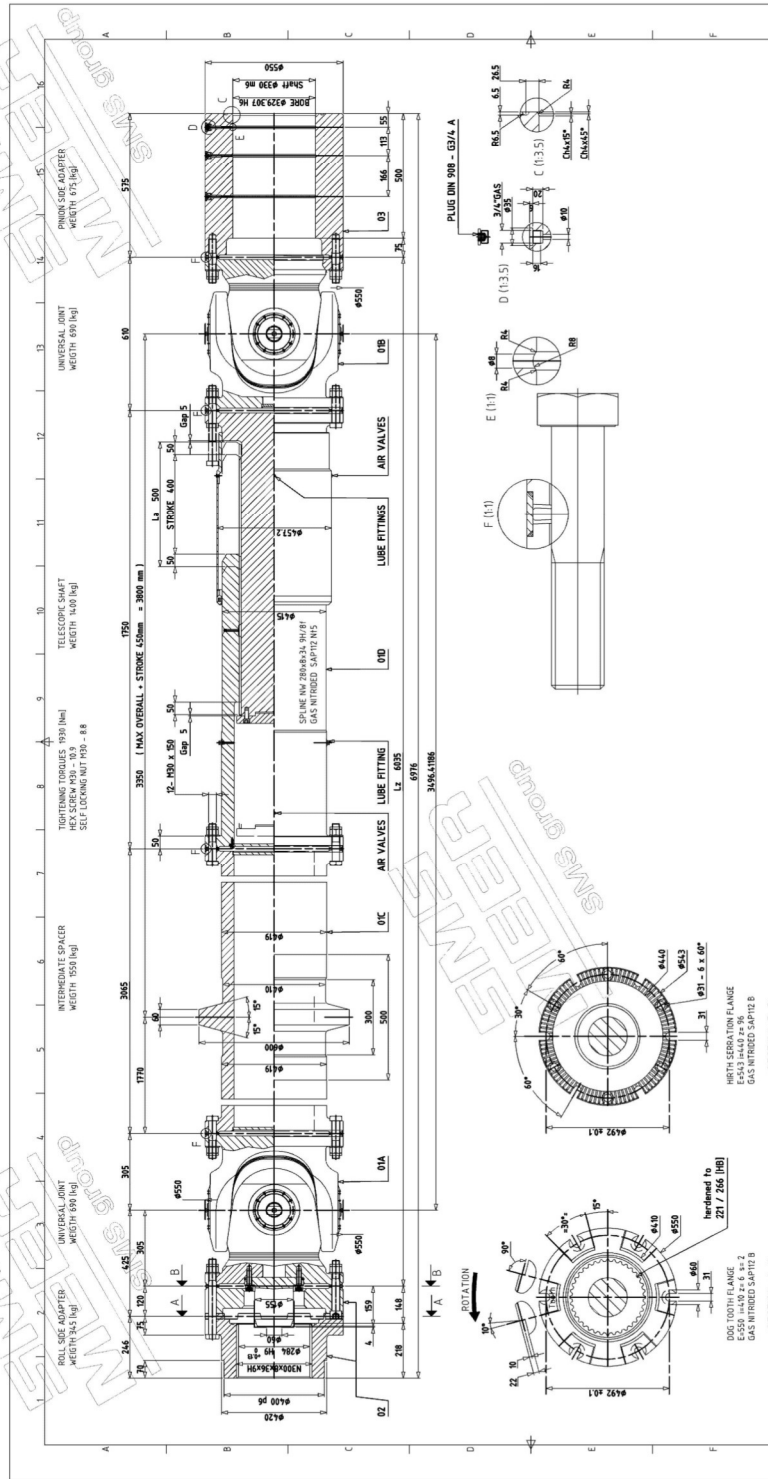
INSPECTION CERTIFICATE: - COMPLIANCE WITH THE ORDER and DIMENSIONAL

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Q99	1	ISO 9001 CERTIFICATION / Impresa S.p.A. 100°	03/04/2016
Q100	1	ISO 9001 CERTIFICATION / Impresa S.p.A. 100°	03/04/2016

Questo disegno è di PROPRIETA' ESCLUSIVA di MAINA S.p.A. Al termine di legge essa vieta di riprodurlo o comunicarlo a ditte concorrenti o a terzi senza la sua preventiva ed esplicita autorizzazione

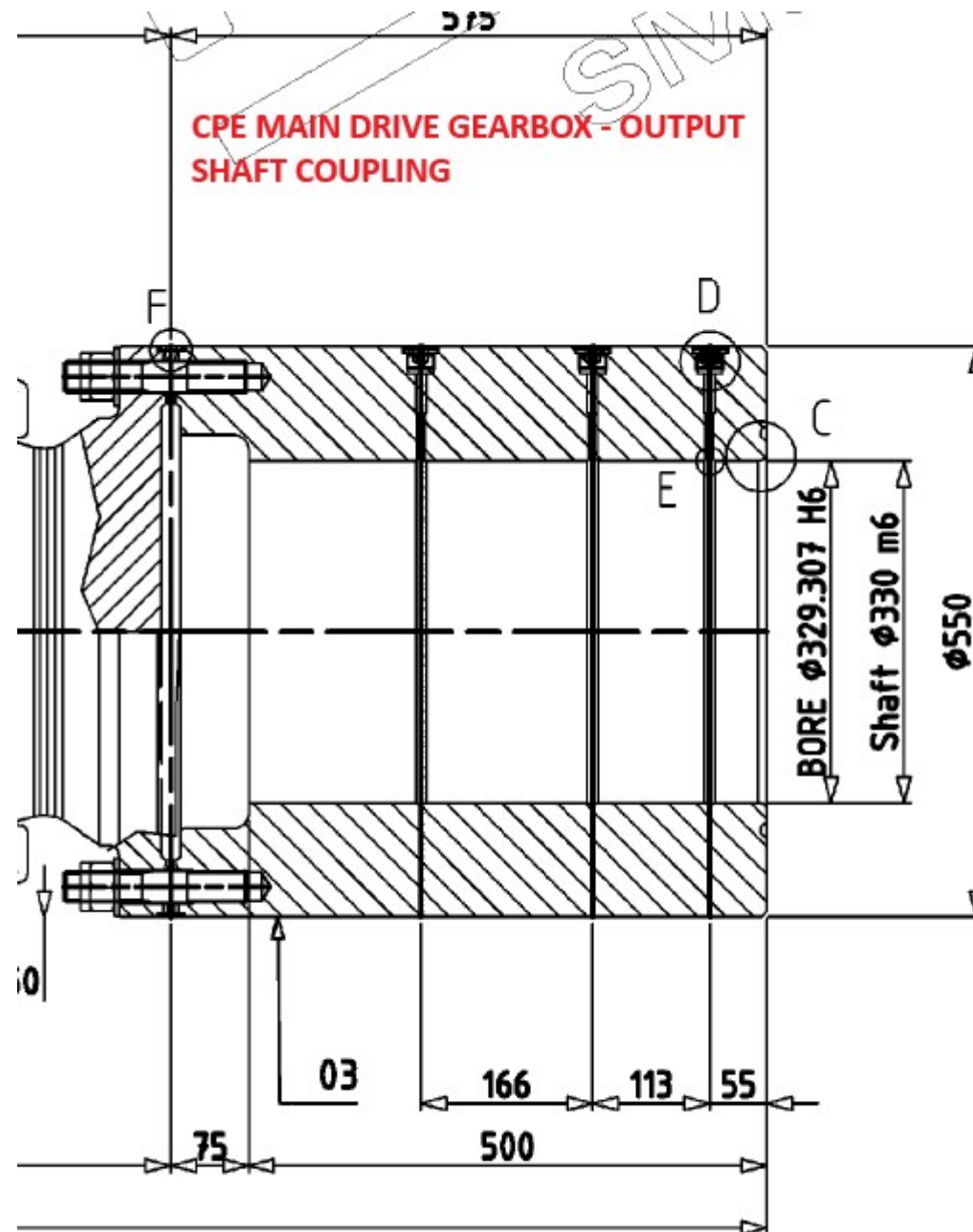
Freigegeben Released

Zeichnungsnummer SN 200	Erstellung / Design 04/05/2016	Gezeichnet / Drawn 405	Geprüft / Checked 12
Produktionsauftrag 1 First production order			
KUPPLUNG coupling			
0101056-30.015			
SMS MEER			

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Buyer Added Bid Specific Additional Terms & Conditions (ATC)

1. PRE QUALIFICATION CRITERIA:

1.1. Technical:

S.no.	Description	Vendor response
1.	Only vendors having Gearbox manufacturing facility in Tamil Nadu, Kerala, Karanataka & Andra Pradesh shall participate in this tender(Copy of Udyam/registration certificate or equivalent documents shall be submitted)	
2.	Vendor shall have experience in manufacture or reconditioning of Gearbox with input power 750 kW(minimum) to any Central, State, Public Sector, Public Listed Industries, executed after March 2015. (Experience proof from BHEL shall contain PO copy and experience proof from other than BHEL shall contain PO copy along with Invoice/Delivery Challan. PO copy shall be supported with drawings & technical details)	
3.	Average annual financial turnover for any of the three years during the last seven financial years, shall be at least 750 Lakhs for the vendor. Documents to Prove Financial Soundness of the Firm (in any of the following manner given below) for any three Financial years out of seven years i.e. 2017-18, 2018-19, 2019-20, 2020-21, 2021-22, 2022-23, 2023-24 (Assessment Year 2018-19,2019-20, 2020-21, 2021-22, 2022-23, 2023-24 ,2024-25)	
4.	Vendor shall have valid ISO 9001:2015 certification (Copy to be attached)	
5.	Vendor shall provide list of Industrial machineries available in their works to meet tender requirements .	
6.	Vendor shall visit site for inspection of gearbox (2 nos) in running condition through inspection windows for detailed understanding of scope of work and site requirements. Site visit certification by BHEL executing department shall be attached.	
7.	Delivery period shall be 12 weeks from date of PO (6 weeks for shaft manufacture & 6 weeks for dismantling, refurbishment & installation of gear box)	
8.	Vendor shall provide bank guarantee of Rs 5,00,000 (Rupees Five Lakhs only) for taking gearboxes (2 nos) to their works	

1.2. Financial:

Average annual financial turnover for any of the three years during the last seven financial years, shall be at least 750 Lakhs for the vendor.

Documents to Prove Financial Soundness of the Firm (in any of the following manner given below) for any three Financial years out of seven years i.e. 2017-18, 2018-19, 2019-20, 2020-21, 2021-22, 2022-23, 2023-24 (Assessment Year 2018-19,2019-20, 2020-21, 2021-22, 2022-23, 2023-24 ,2024-25)

1.3.Submission of Integrity Pact duly signed (*applicable for estimate \geq 2 Cr*)

1.4.Bidder must not be admitted under Corporate Insolvency Resolution Process or Liquidation as on date, by NCLT or any adjudicating authority/authorities, , and shall submit undertaking (Annexure-4) to this effect.

2. SCOPE OF SUPPLY

Supply of **CPE GEARBOX REFURBISHMENT** to Seamless Steel Tube Plant, BHEL Trichy, on F.O.R. Destination Basis. Specification is as follows:

Supply of **CPE GEARBOX REFURBISHMENT**. Unloading of materials at Destination/ Site shall be in BHEL's scope.

3. PRICE BASIS

Price in INR should be quoted for FOR Destination Basis delivery to Stores Officer, BHEL, Seamless Steel Tube Plant, BHEL Boiler Plant Project, P.O., Tiruchirapalli - 620014, Tamilnadu, India.

GSTIN/UIN : 33AAACB4146P2ZL

4. TAXES & DUTIES

4.1. The Supplier/Vendor shall pay all (save the specific exclusions as enumerated in this clause) taxes, fees, license, charges, deposits, duties, tools, royalty, commissions, other charges, etc. which may be levied on the input goods & services consumed and output goods & services delivered in course of his operations in executing the contract. In case BHEL is forced to pay any of such taxes/duties, BHEL shall have the right to recover the same from his bills or otherwise as deemed fit along with the applicable overheads @5% and interest on the total value (i. e. amount paid by BHEL + overhead).However, provisions regarding **GST** on output supply (goods/service) and TDS/TCS as per Income Tax Act shall be as per following clauses.

4.2.GST (Goods and Services Tax)

4.2.1. GST as applicable on output supply (goods/services) are excluded from Supplier/Vendor's scope; therefore, contractor's price/rates shall be **exclusive** of GST. Reimbursement of GST is subject to compliance of following terms and conditions. BHEL shall have the right to deny payment of GST and to recover any loss to BHEL on account of tax, interest, penalty etc. for non-compliance of any of the following condition.

4.2.2. The admissibility of GST, taxes and duties referred in this chapter or elsewhere in the contract shall be limited to direct transactions between BHEL & its Supplier/Vendor. BHEL shall not consider GST on any transaction other than the direct transaction between BHEL & its Supplier/Vendor.

4.2.3. Supplier/Vendor shall obtain prior written consent of BHEL before billing the amount towards such taxes. Where the GST laws permit more than one option or methodology for discharging the liability of tax/levy/duty, BHEL shall have the right to adopt the appropriate one considering the amount of tax liability on BHEL/Client as well as procedural simplicity with regard to assessment of the liability. The option chosen by BHEL shall be binding on the Contractor for discharging the obligation of BHEL in respect of the tax liability to the Supplier/Vendor.

4.2.4. Supplier/Vendor has to submit GST registration certificate of the concerned state. Supplier/Vendor also needs to ensure that the submitted GST registration certificate should be in active status during the entire contract period.

- 4.2.5. Supplier/Vendor has to issue Invoice/Debit Note/Credit Note indicating HSN/SAC code, Description, Value, Rate, applicable tax and other particulars in compliance with the provisions of relevant GST Act and Rules made thereunder.
- 4.2.6. Supplier/Vendor has to submit GST compliant invoice within the due date of invoice as per GST Law. In case of delay, BHEL reserves the right of denial of GST payment if there occurs any hardship to BHEL in claiming the input thereof. In case of goods, Supplier/Vendor has to provide scan copy of invoice & GR/LR/RR to BHEL before movement of goods starts to enable BHEL to meet its GST related compliances. Special care should be taken in case of month end transactions.
- 4.2.7. Supplier/Vendor has to ensure that invoice in respect of such services which have been provided/completed on or before end of the month should not bear the date later than last working day of the month in which services are performed.
- 4.2.8. Subject to other provisions of the contract, GST amount claimed in the invoice shall be released on fulfilment of all the following conditions by the Supplier/Vendor: -
- a) Supply of goods and /or services have been received by BHEL
 - b) Original Tax Invoice has been submitted to BHEL
 - c) Supplier/Vendor has submitted all the documents required for processing of bill as per contract/ purchase order/ work order.
 - d) In cases where e-invoicing provision is applicable, Supplier/Vendor is required to submit invoice in compliance with e-invoicing provisions of GST Act and Rules made thereunder.
 - e) Supplier/Vendor has filed all the relevant GST return (e.g. GSTR-1, GSTR-3B, etc.) pertaining to the invoice submitted and submit the proof of such return along with immediate subsequent invoice. In case of final invoice/ bill, contractor has to submit proof of such return within fifteen days from the due date of relevant return.
 - f) Respective invoice has appeared in BHEL's GSTR - 2A for the month corresponding to the month of invoice and in GSTR-2B of the month in which such invoices has been reported by the contractor along with status of ITC availability as "YES" in GSTR-2B. Alternatively, BG of appropriate value may be furnished which shall be valid at least one month beyond the due date of confirmation of relevant payment of GST on GSTN portal or sufficient security is available to adjust the financial impact in case of any default by the Supplier/Vendor.
 - g) Supplier/Vendor has to submit an undertaking confirming the payment of all due GST in respect of invoices pertaining to BHEL.
- 4.2.9. Any financial loss arises to BHEL on account of failure or delay in submission of any document as per contract/purchase order/work order at the time of submission of Tax invoice to BHEL, shall be deducted from Supplier/Vendor's bill or otherwise as deemed fit.
- 4.2.10. TDS as applicable under GST law shall be deducted from Supplier/Vendor's bill.
- 4.2.11. Supplier/Vendor shall comply with the provisions of e-way bill wherever applicable. Further wherever provisions of GST Act permits, all the e-way bills, road permits etc. required for transportation of goods needs to be arranged by the contractor.
- 4.2.12. Supplier/Vendor shall be solely responsible for discharging his GST liability according to the provisions of GST Law and BHEL will not entertain any claim of GST/interest/penalty or any other liability on account of failure of Supplier/Vendor in complying the provisions of GST Law or discharging the GST liability in a manner laid down thereunder.
- 4.2.13. In case declaration of any invoice is delayed by the vendor in his GST return or any invoice is subsequently amended/alterd/deleted on GSTN portal which results in any adverse financial implication on BHEL, the financial impact thereof including interest/penalty shall be recovered from the Supplier/Vendor's due payment.
- 4.2.14. Any denial of input credit to BHEL or arising of any tax liability on BHEL due to non-compliance of GST Law by the Supplier/Vendor in any manner, will be recovered along with

liability on account of interest and penalty (if any) from the payments due to the Supplier/Vendor.

4.2.15. In the event of any ambiguity in GST law with respect to availability of input credit of GST charged on the invoice raised by the contractor or with respect to any other matter having impact on BHEL, BHEL's decision shall be final and binding on the Supplier/Vendor.

4.2.16. **Variation in Taxes & Duties:** Any upward variation in GST shall be considered for reimbursement provided supply of goods and services are made within schedule date stipulated in the contract or approved extended schedule for the reason solely attributable to BHEL. However downward variation shall be subject to adjustment as per actual GST applicability. In case the Government imposes any new levy/tax on the output service/goods after price bid opening, the same shall be reimbursed by BHEL at actual. The reimbursement under this clause is restricted to the direct transaction between BHEL and its Supplier/Vendor only and within the contractual delivery period only. In case any new tax/levy/duty etc. becomes applicable after the date of Bidder's offer but before opening of the price Bid, the Bidder/ Supplier/Vendor must convey its impact on his price duly substantiated by documentary evidence in support of the same before opening of price bid. Claim for any such impact after opening the price bid will not be considered by BHEL for reimbursement of tax or reassessment of offer.

4.3. Income Tax:

TDS/TCS as applicable under Income Tax Act, 1961 or rules made thereunder shall be deducted/collected from Supplier/Vendor's bill.

5. MATERIAL DISPATCH CLEARANCE CERTIFICATE (MDCC):

MDCC shall be issued by BHEL. No material shall be dispatched by supplier unless and until Material Dispatch Clearance Certificate (MDCC) issued by BHEL Tiruchirappalli. In case any material is dispatched without MDCC and any loss is incurred by Supplier/Vendor for any reason whatsoever, BHEL shall not be responsible in any manner to compensate the supplier in this regard.

6. INSPECTION/INSPECTION & TESTING AT SUPPLIER WORKS:

BHEL reserves the right to inspect the material during manufacturing and also to get tested the material under dispatch from third party. The test results of third party test shall be final and binding on the Supplier/Vendor.

BHEL will reserve the right to inspect/test the material during/after manufacturing at suppliers' works, and/or at BHEL Site. In case of rejection at any stage, Supplier/Vendor shall be liable to replace the materials at his own cost.

7. DELIVERY:

Supply of materials shall be made within **84 days** from the date of Purchase Order.

NOTE:

a). If the delivery of supply as detailed above gets delayed beyond the delivery period, the Supplier/Vendor shall request for a delivery extension and BHEL at its discretion may extend the Contract. However, if any 'Delivery extension' is granted to the Supplier/Vendor for completion of supply, due to backlog attributable to the Supplier/Vendor, then it shall be without prejudice to the rights of BHEL to impose LD for the delays attributable to the Supplier/Vendor.

b). In case BHEL increase the quantity during currency of the contract in line with quantity variation clause (sl.no1.Generic of GeM bid), delivery extension on pro-rata basis shall be given for supply of these additional quantity.

8. TRANSIT INSURANCE:

Transit Insurance is in Supplier/Vendor's scope. Supplier/Vendor shall insure the material at their cost for Transportation.

9. PAYMENT TERMS:

- a) FOR NON MSME Bidders, 100% payment shall be released within 90 days from the date of acknowledged receipt & acceptance of material at site and submission of billing documents as mentioned in sl. no. 10 below.
- b) FOR MSME (micro and small Manufacturing) Bidders, 100% payment shall be released within 45 days from the date of acknowledged receipt & acceptance of material at site and submission of billing documents as mentioned in sl. no. 10 below.
- c) FOR MEDIUM ENTERPRISES Bidders, 100% payment shall be released within 60 days upon receipt & acceptance of material at site and submission of billing documents as mentioned in sl. no. 10 below.

However, GST amount shall be reimbursed in line with compliance to Cl. No. 4 (Taxes & Duties) above. No interest shall be payable on the security deposit or any other money due to the contractor”.

10. DOCUMENTS REQUIRED ALONG WITH DISPATCH OF MATERIAL/BILLING DOCUMENTS:

The following documents are required to be sent with material dispatch/Billing Documents:

- 1) Original Tax Invoice (As per Cl. No. 4 above).
- 2) Copy of LR or Delivery Challan.
- 3) Warranty Certificate (If applicable).
- 4) GST declaration (to be given separately or to be included in invoice)
- 5) E-way bill (Applicable as per invoice value)

BHEL has launched **SUVIDHA – Unified Supplier Portal** to streamline the processing of supply payments to all vendors. **Portal Link:** <https://suvidha.bhel.in/suvidha/index1.jsp>

- 1) **Mandatory Registration of Invoices**
 - a) All supply invoices, regardless of the invoice amount, must be registered in the BHEL SUVIDHA portal.
- 2) **For Net Invoice Amount Exceeding ₹5 Lakhs (Including Taxes):**
 - a) Upload of a **Class 3 Digitally Signed Tax Invoice (Class 3 Digital Signature Certificate issued by a licensed Certifying Authority)** is mandatory.
 - b) All other documents as per the Purchase Order (PO) checklist must also be uploaded.
 - c) If any other digitally signed document is specified in the PO checklist, it must be uploaded with a Class 3 Digital Signature.
- 3) **For Net Invoice Amount Up to ₹5 Lakhs (Including Taxes):**
 - a) Upload of all documents as per the PO checklist is mandatory.
 - b) Documents can be uploaded without a digital signature.
 - c) However, if a digitally signed document is specified in the PO checklist and a non-digitally signed version is uploaded, a hard copy must be submitted.

11. BANK DETAILS FOR EMD & PERFORMANCE SECURITY SUBMISSION:

For Electronic Fund Transfer the details are as below:

- a) Name of the Beneficiary: Bharat Heavy Electricals Limited
- b) Bank Particulars:

Name of the Company - BHARAT HEAVY ELECTRICALS LTD.

Address of the company – Seamless Steel Tube Plant, BHEL Tiruverumbur, Tiruchirappalli, Tamil Nadu- 620014

Name of the bank – State Bank of India
Bank branch – Heavy Electricals Kailasapuram BRANCH
City - Tiruchirappalli
Branch code - 01363
Account Number – 10891588977
Account type - CC
IFSC code – SBIN0001363
MICR code – 620002004

12. EMD: Applicable/Not Applicable

12.1. Every tender must be accompanied by the prescribed amount of Earnest Money Deposit (EMD) in the manner described herein.

i. EMD shall be furnished before tender opening / along with the offer in full as per the amount indicated in the NIT.

ii. The EMD up to an amount of Rs. is to be paid only in the following forms:

a) Electronic Fund Transfer credited in BHEL account (before tender opening).

b) Banker's cheque/ Pay order/ Demand draft, in favour of 'Bharat Heavy Electricals Limited' and payable at Regional HQ issuing the tender (along with offer).

c) Fixed Deposit Receipt (FDR) issued by Scheduled Banks/ Public Financial Institutions as defined in the Companies Act (FDR should be in the name of the Contractor, a/c BHEL marking lien in favour of BHEL) (along with offer). The Fixed Deposit in such cases shall be valid for a period of 45 (forty-five) days beyond the final bid validity period.

d) Bank Guarantee from any of the Scheduled Banks. In such cases shall be valid for a period of 45 (forty-five) days beyond the final bid validity period.

e) Insurance Surety Bonds.

In case the EMD is more than Rs. Two lakh and in case of foreign bidders, it may be in the form of a bank guarantee (in equivalent Foreign Exchange amount, in case of foreign bidders) issued/ confirmed from any of the scheduled commercial bank in India in the prescribed format. The EMD shall remain valid for a period of 45 (forty-five) days beyond the final bid validity period.

iii. No other form of EMD remittance shall be acceptable to BHEL.

12.2. EMD by the Bidder will be forfeited as per NIT conditions, if:

i. The bidder withdraws or amends its/his tender or impairs or derogates from the tender in any respect within the period of validity of the tender or if the successful bidder fails to furnish the required performance security within the specified period mentioned in the Tender.

ii. EMD by the Bidder shall be withheld in case any action on the tenderer is envisaged under the provisions of extant "Guidelines on Suspension of business dealings with suppliers/ contractors" and shall be forfeited in case of suspension

12.3. Subject to Clause 12.2 above, EMD of the unsuccessful bidders shall be returned at the earliest after expiry of the final bid validity period and latest by the 30th day after the award of the contract. However, in case of two packet or two stage bidding, EMD of unsuccessful bidders during first stage i.e., technical evaluation etc. shall be returned within 30 days of declaration of result of first stage i.e. technical evaluation etc.

- 12.4. EMD of successful Bidder shall be refunded on conclusion of the order/ receipt of a performance security as mentioned in NIT.
- 12.5. EMD shall not carry any interest
- 12.6. Micro and Small Enterprises(MSEs) or startups as recognized by the Department of Promotion of Industry and Internal Trade(DPIIT) shall be exempted from the payment of EMD.

13. PERFORMANCE SECURITY: ~~Applicable~~/Not Applicable

- 13.1. Successful bidder awarded the contract should deposit **10% of the contract value** as performance security towards fulfilment of all contractual obligations, including warranty obligations.
- 13.2. Performance Security is to be furnished within 14 days after issuance of Contract/PO and should remain valid for a period of 60 (sixty) days beyond the date of completion of all contractual obligations of the Supplier/Vendor, including warranty obligations. (total period: 1 year and 60 days).
- 13.3. Modes of Deposit:
- a) Performance security may be furnished in the following forms:
 - i. Local cheques of Scheduled Banks (subject to realization)/ Pay Order/Demand Draft/ Electronic Fund Transfer in favour of 'Bharat Heavy Electricals Limited' and payable at Regional HQ
 - ii. Bank Guarantee from Scheduled Banks / Public Financial Institutions as defined in the Companies Act. The Bank Guarantee should be in the prescribed format of BHEL.
 - iii. Fixed Deposit Receipt (FDR) issued by Scheduled Banks / Public Financial Institutions as defined in the Companies Act (FDR should be in the name of the Contractor, a/c BHEL).
 - iv. Securities available from Indian Post offices such as National Savings Certificates, Kisan Vikas Patras etc. (held in the name of Contractor furnishing the security and duly endorsed/ hypothecated/ pledged, as applicable, in favour of BHEL).
 - v. Insurance Surety Bond.
- Note: BHEL will not be liable or responsible in any manner for the collection of interest or renewal of the documents or in any other matter connected therewith.
- b) In case of GTE tenders, the performance security should be in the same currency as the contract and must conform to Uniform Rules for Demand Guarantees (URDG 758) - an international convention regulating international securities.
- 13.4. The performance security will be forfeited and credited to BHEL's account in the event of a breach of contract by the Supplier/Vendor as provided herein or elsewhere in the Contract/PO..
- 13.5. Performance Security shall be refunded to the Supplier/Vendor without interest, after the Supplier/Vendor duly performs and completes the contract in all respects but not later than 60(sixty) days of completion of all such obligations including the warranty under the contract.
- 13.6. The Performance Security shall not carry any interest.
- 13.7. There is no exemption of Performance security deposit submission for MSE Vendors

14. BREACH OF CONTRACT, REMEDIES AND TERMINATION:

- 14.1. The following shall amount to breach of contract:
- I. Non-supply of material/ non-completion of work by the Supplier/Vendor within scheduled delivery/ completion period as per contract or as extended from time to time.

II. The Supplier/Vendor fails to perform as per the activity schedule and there are sufficient reasons even before expiry of the delivery/ completion period to justify that supplies shall be inordinately delayed beyond contractual delivery/ completion period.

III. The Supplier/Vendor delivers equipment/ material not of the contracted quality.

IV. The Supplier/Vendor fails to replace the defective equipment/ material/ component as per guarantee clause.

V. Withdrawal from or abandonment of the work by the Supplier/Vendor before completion as per contract.

VI. Assignment, transfer, subletting of Contract by the Supplier/Vendor without BHEL's written permission resulting in termination of Contract or part thereof by BHEL.

VII. Non-compliance to any contractual condition or any other default attributable to Supplier/Vendor.

VIII. Any other reason(s) attributable to Vendor towards failure of performance of contract. In case of breach of contract, BHEL shall have the right to terminate the Purchase Order/ Contract either in whole or in part thereof without any compensation to the Supplier/Vendor.

IX. Any of the declarations furnished by the contractor at the time of bidding and/ or entering into the contract for supply are found untruthful and such declarations were of a nature that could have resulted in non-award of contract to the contractor or could expose BHEL and/ or Owner to adverse consequences, financial or otherwise.

X. Supplier/Vendor is convicted of any offence involving corrupt business practices, antinational activities or any such offence that compromises the business ethics of BHEL, in violation of the Integrity Pact entered into with BHEL has the potential to harm the overall business of BHEL/ Owner.

Note-Once BHEL considers that a breach of contract has occurred on the part of Supplier/Vendor, BHEL shall notify the Supplier/Vendor by way of notice in this regard. Contractor shall be given an opportunity to rectify the reasons causing the breach of contract within a period of 14 days.

In case the contractor fails to remedy the breach, as mentioned in the notice, to the satisfaction of BHEL, BHEL shall have the right to take recourse to any of the remedial actions available to it under the relevant provisions of contract.

14.2. Remedies in case of Breach of Contract:

i. Wherein the period as stipulated in the notice issued under clause 14.1 has expired and Supplier/Vendor has failed to remedy the breach, BHEL will have the right to terminate the contract on the ground of "Breach of Contract" without any further notice to contractor.

ii. Upon termination of contract, BHEL shall be entitled to recover an amount equivalent to 10% of the Contract Value for the damages on account of breach of contract committed by the Supplier/Vendor. This amount shall be recovered by way of encashing the security instruments like performance bank guarantee etc available with BHEL against the said contract. In case the value of the security instruments available is less than 10% of the contract value, the balance amount shall be recovered from other financial remedies (i.e. available bills of the Supplier/Vendor, retention amount, from the money due to the Supplier/Vendor etc. with BHEL) or the other legal remedies shall be pursued.

iii. Wherever the value of security instruments like performance bank guarantee available with BHEL against the said contract is 10% of the contract value or more, such security instruments to the extent of 10% contract value will be encashed. In case no security instruments are available or the value of the security instruments available is less than

10% of the contract value, the 10% of the contract value or the balance amount, as the case may be, will be recovered in all or any of the following manners:

- iv. In case the amount recovered under sub clause (a) above is not sufficient to fulfil the amount recoverable then; a demand notice to deposit the balance amount within 30 days shall be issued to Supplier/Vendor.
- v. If Supplier/Vendor fails to deposit the balance amount within the period as prescribed in demand notice, following action shall be taken for recovery of the balance amount:
 - a) from dues available in the form of Bills payable to defaulted Supplier/Vendor against the same contract.
 - b) If it is not possible to recover the dues available from the same contract or dues are insufficient to meet the recoverable amount, balance amount shall be recovered from any money(s) payable to Supplier/Vendor under any contract with other Units of BHEL including recovery from security deposits or any other deposit available in the form of security instruments of any kind against Security deposit or EMD.
- vi. In-case recoveries are not possible with any of the above available options, Legal action shall be initiated for recovery against defaulted supplier/Vendor.
- vii. It is an agreed term of contract that this amount shall be a genuine pre-estimate of damages that BHEL would incur in completion of balance contractual obligation of the contract through any other agency and BHEL will not be required to furnish any other evidence to the Supplier/Vendor for the purpose of estimation of damages.
- viii. In addition to the above, imposition of liquidated damages, debarment, termination, de-scoping, short-closure, etc., shall be applied as per provisions of the contract.

Note:

1) The defaulting Supplier/Vendor shall not be eligible for participation in any of the future enquiries floated by BHEL to complete the balance work. The defaulting contractor shall mean and include:

- (a) In case defaulted Supplier/Vendor is the Sole Proprietorship Firm, any Sole Proprietorship Firm owned by same Sole Proprietor.
- (b) In case defaulted Supplier/Vendor is The Partnership Firm, any firm comprising of same partners/ some of the same partners ; or sole proprietorship firm owned by any partner(s) as a sole proprietor.

LD against delay in executed supply in case of Termination of Contract:

LD against delay in executed supply shall be calculated in line with LD clause no. 18.0 below, for the delay attributable to Supplier/Vendor. For limiting the maximum value of LD, contract value shall be taken as Executed Value of supply till termination of contract.

Method for calculation of "LD against delay in executed supply in case of termination of contract" is given below.

- i. Let the time period from scheduled date of start of supply till termination of contract excluding the period of Hold (if any) not attributable to contractor = T1
- ii. Let the value of executed supply till the time of termination of contract= X
- iii. Let the Total Executable Value of supply for which inputs/fronfs were made available to Supplier/Vendor and were planned for execution till termination of contract = Y
- iv. Delay in executed supply attributable to Supplier/Vendor i.e. $T2 = [1 - (X/Y)] \times T1$
- v. LD shall be calculated in line with LD clause (clause 18.0) of the Contract for the delay attributable to Supplier/Vendor taking "X" as Contract Value and "T2" as period of delay attributable to Supplier/Vendor.

15. BILL TO/ SHIP TO ADDRESS:

Bill to: Bharat Heavy Electricals Limited,
Seamless Steel Tube Plant,
Boiler Plant Project P.O., Tiruchirappalli,
Tamil Nadu – 620014
GSTN: 33AAACB4146P2ZL

Ship to: Bharat Heavy Electricals Limited,
Stores-ST85,
Seamless Steel Tube Plant,
Boiler Plant Project P.O., Tiruchirappalli,
Tamil Nadu – 620014

16. GUARANTEE/WARRANTY:

Guarantee period for Supply of **CPE GEARBOX REFURBISHMENT** shall be **12** calendar months from the date of last dispatch.

17. MICRO AND SMALL ENTERPRISES (MSE):

Any Bidder falling under MSE category shall furnish the following details & submit documentary evidence/ Govt. Certificate etc. in support of the same along with their techno-commercial offer.

Type Under MSE	SC/ST Owned	Women Owned	Others(Excluding SC/ST & Women Owned
Micro			
Small			

Note: If the bidder does not furnish the above, offer shall be processed construing that the bidder is not falling under MSE category

a) MSE suppliers can avail the intended benefits in respect of the procurements related to the Goods and Services only (Definition of Goods and Services as enumerated by Govt. of India vide Office Memorandum F. No. 21(8)/2011-MA dtd. 09/11/2016 office of AS & DC, MSME) only if they submit along with the offer, attested copies of either Udyam Registration. Date to be reckoned for determining the deemed validity will be the last date of Technical Bid submission. Non-submission of supporting document in GeM portal will lead to consideration of their bids at par with other bidders. No benefits shall be applicable for this enquiry if the above required documents are not uploaded at the time of bid submission. Documents submitted by the bidder shall be verified by BHEL for rendering the applicable benefits.

18. LIQUIDATED DAMAGES:

Liquidated Damages, wherever referred under this Tender/Agreement, shall mean and refer to the damages, not in the nature of penalty, which the contractor agrees to pay in the event of delay in delivery of supplies, breach of contract etc. as the case may be.

Liquidated Damages leviable upon the Supplier/Vendor is a sum which is agreed by the parties as a reasonable and genuine pre-estimate of damages which will be suffered by BHEL on account of delay/breach on the part of the Supplier/Vendor. If the Seller/Service Provider fails to deliver any or all of the Goods/Services within the original/re-fixed delivery period(s) specified in the contract/PO, the Buyer/BHEL will be entitled to deduct/recover the Liquidated Damages for the delay, unless covered under Force Majeure conditions aforesaid, @ 0.5% of the contract value of delayed quantity per week or part of the week of delayed period as pre-estimated damages not exceeding 10% of the contract value of delayed quantity without any controversy/dispute of any sort whatsoever.

19. INTEGRITY PACT: NOT APPLICABLE

a) IP is a tool to ensure that activities and transactions between the Company and its Bidders/ Supplier/Vendor are handled in a fair, transparent and corruption free manner. Following Independent External Monitors (IEMs) on the present panel have been appointed by BHEL with the approval of CVC to oversee implementation of IP in BHEL.

Sl.No.	IEM	Email
1	Shri Bishwamitra Pandey	iem2@bhel.in
2	Shri Mukesh Mittal	iem3@bhel.in

b) The IP as enclosed with the tender is to be submitted (duly signed by authorized signatory) along with techno-commercial bid (Part-I, in case of two/ three part bid). Only those bidders who have entered into such an IP with BHEL would be competent to participate in the bidding. In other words, entering into this Pact would be a preliminary qualification.

c) Please refer Section-8 of IP for Role and Responsibilities of IEMs. In case of any complaint arising out of the tendering process, the matter may be referred to any of the above IEM(s). All correspondence with the IEMs shall be done through email only.

Note:

No routine correspondence shall be addressed to the IEM (phone/ post/ email) regarding the clarifications, time extensions or any other administrative queries, etc. on the tender issued. All such clarification/ issues shall be addressed directly to the tender issuing (procurement) department's officials whose contact details are as per Clause no. 21 below.

20. PREFERENCE TO MAKE IN INDIA:

For this procurement, the local content to categorize a Supplier/Vendor as a Class I local supplier/ Class II local Supplier/Non-Local Supplier and purchase preferences to Class I local supplier, is as defined in Public Procurement (Preference to Make in India), Order 2017 dated 04.06.2020 issued by DPIIT. In case of subsequent orders issued by the nodal ministry, changing the definition of local content for the items of the GeM Bid, the same shall be applicable even if issued after issue of this GeM Bid, but before opening of Part-II bids against this GeM Bid.

20.1. Compliance to restrictions under Rule 144(xi) of GFR 2017:

I. Any bidder from a country which shares a land border with India will be eligible to bid in this tender only if the bidder is registered with the Competent Authority. The Competent Authority for the purpose of this Clause shall be the Registration Committee constituted by the Department for Promotion of Industry and Internal Trade (DPIIT).

II. "Bidder" (including the term 'tenderer', 'consultant' or 'service provider' in certain contexts) means any person or firm or company, including any member of a consortium or joint venture (that is an association of several persons, or firms or companies), every artificial juridical person not falling in any of the descriptions of bidders stated hereinbefore, including any agency branch or office controlled by such person, participating in a procurement process.

III. "Bidder from a country which shares a land border with India" for the purpose of this Clause means:-

- a. An entity incorporated established or registered in such a country; or
- b. A subsidiary of an entity incorporated established or registered in such a country; or

- c. An entity substantially controlled through entities incorporated, established or registered in such a country; or
- d. An entity whose beneficial owner is situated in such a country; or
- e. An Indian (or other) agent of such an entity; or
- f. A natural person who is a citizen of such a country; or
- g. A consortium or joint venture where any member of the consortium or joint venture falls under any of the above.

IV. The beneficial owner for the purpose of (III) above will be as under:

1. In case of a company or Limited Liability Partnership, the beneficial owner is the natural person(s), who, whether acting alone or together or through one or more juridical person, has a controlling ownership interest or who exercises control through other means.

a. "Controlling ownership interest" means ownership of or entitlement to more than twenty-five per cent of shares or capital or profits of the company.

b. "Control" shall include the right to appoint majority of the directors or to control the management or policy decisions including by virtue of their shareholding or management rights or shareholder's agreements or voting agreements.

2. In case of a partnership firm, the beneficial owner is the natural person(s) who, whether acting alone or together, or through one or more juridical person, has ownership or entitlement to more than fifteen percent of capital or profits of the partnership.

3. In case of an unincorporated association or body of individuals, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person has ownership or entitlement to more than fifteen percent of the property or capital or profits of the such association or body of individuals.

4. Where no natural person is identified under (1) or (2) or (3) above, the beneficial owner is the relevant natural person who holds the position of senior managing official;

5. In case of a trust, the identification of beneficial owner(s) shall include identification of the author of the trust, the trustee, the beneficiaries with fifteen percent or more interest in the trust and any other natural person exercising ultimate effective control over the trust through a chain of control or ownership.

V. An agent is a person employed to do any act for another, or to represent another in dealings
(i) The bidder shall provide undertaking for their compliance to this Clause, in the format provided in Annexure-13.

(ii) Registration of the bidder with Competent Authority should be valid at the time of submission of bids and at the time of acceptance of the bids.

21. SETTLEMENT OF DISPUTE:

If any dispute or difference of any kind whatsoever shall arise between BHEL and the Supplier/Vendor, arising out of the contract for the performance of the work whether during the progress of contract termination, abandonment or breach of the contract, it shall in the first place referred to Designated Engineer for amicable resolution by the parties. Designated Engineer (to be nominated by BHEL for settlement of disputes arising out of the contract) who within 60 days after being requested shall give written notice of his decision to the contractor. Save as hereinafter provided, such decision in respect of every matter so referred shall forthwith be given effect to by the Supplier/Vendor who shall proceed with the work with all due diligence, whether he or BHEL desires to resolve the dispute as hereinafter provided or not.

If after the Designated Engineer has given written notice of this decision to the party and no intention to pursue the dispute has been communicated to him by the affected party within

30 days from the receipt of such notice, the said decision shall become final and binding on the parties. In the event the Supplier/Vendor being dissatisfied with any such decision or if amicable settlement cannot be reached then all such disputed issues shall be resolved through conciliation in terms of the BHEL Conciliation Scheme 2018 as per Clause 21.1

21.1. Conciliation:

Any dispute, difference or controversy of whatever nature howsoever arising under or out of or in relation to this Agreement (including its interpretation) between the Parties, and so notified in writing by either Party to the other Party (the "Dispute") shall, in the first instance, be attempted to be resolved amicably in accordance with the conciliation procedure as per BHEL Conciliation Scheme 2018. The proceedings of Conciliation shall broadly be governed by Part-III of the Arbitration and Conciliation Act 1996 or any statutory modification thereof and as provided in - "Procedure for conduct of conciliation proceedings" (as available in www.bhel.com)).

Note: Ministry of Finance has issued OM reference No. 1/2/24 dated 03.06.2024 regarding "Guidelines for Arbitration and Mediation in Contracts of Domestic Public Procurement. In the said OM it has been recommended that Government departments/ Entities/agencies are to encourage mediation under the Mediation Act. 2023. The said Act has not yet been notified by the Government. Therefore, the clause "Settlement of Disputes" shall be modified accordingly as and when the Mediation Act 2023 gets notified.

21.2. ARBITRATION:

- 21.2.1. Except as provided elsewhere in this Contract, in case Parties are unable to reach amicable settlement (whether by Conciliation to be conducted as provided in Clause 21.1 herein above or otherwise) in respect of any dispute or difference; arising out of the formation, breach, termination, validity or execution of the Contract; or, the respective rights and liabilities of the Parties; or, in relation to interpretation of any provision of the Contract; or, in any manner touching upon the Contract (hereinafter referred to as the 'Dispute'), then, either Party may, refer the disputes to Arbitral Institution and such dispute to be adjudicated by Sole Arbitrator appointed in accordance with the Rules of said Arbitral Institution.
- 21.2.2. A party willing to commence arbitration proceeding shall invoke Arbitration Clause by giving notice to the other party in terms of section 21 of the Arbitration & Conciliation Act, 1996 (hereinafter referred to as the 'Notice') before referring the matter to arbitral institution. The Notice shall be addressed to the Head of the Region, Power Sector/ Unit, BHEL, executing the Contract and shall contain the particulars of all claims to be referred to arbitration with sufficient detail and shall also indicate the monetary amount of such claim including interest, if any.
- 21.2.3. After expiry of 30 days from the date of receipt of aforesaid notice, the party invoking the Arbitration shall submit that dispute to the Arbitral Institutions and that dispute shall be adjudicated in accordance with their respective Arbitration Rules. The matter shall be adjudicated by a Sole Arbitrator who shall necessarily be a Retd Judge having considerable experience in commercial matters to be appointed/nominated by the respective institution. The cost/expenses pertaining to the said Arbitration shall also be governed in accordance with the Rules of the respective Arbitral Institution. The decision of the party invoking the Arbitration for reference of dispute to a specific Arbitral institution for adjudication of that dispute shall be final and binding on both the parties and shall not be subject to any change thereafter. The institution once selected at the time of invocation of dispute shall remain unchanged.

- 21.2.4. The fee and expenses shall be borne by the parties as per the Arbitral Institutional rules.
- 21.2.5. The Arbitration proceedings shall be in English language and the seat and venue of Arbitration shall be Tiruchirappalli.
- 21.2.6. Subject to the above, the provisions of Arbitration & Conciliation Act 1996 and any amendment thereof shall be applicable. All matters relating to this Contract and arising out of invocation of Arbitration clause are subject to the exclusive jurisdiction of the Court(s) situated at Tiruchirappalli.
- 21.2.7. Notwithstanding any reference to the Designated Engineer or Conciliation or Arbitration herein, a. the parties shall continue to perform their respective obligations under the Contract unless they otherwise agree. Settlement of Dispute clause cannot be invoked by the Contractor, if the Contract has been mutually closed or 'No Demand Certificate' has been furnished by the Contractor or any Settlement Agreement has been signed between the Employer and the Contractor.
- 21.2.8. It is agreed that Mechanism of resolution of disputes through arbitration shall be available only in the cases where the value of the dispute is less than Rs. 10 Crores.
- 21.2.9. In case the disputed amount (Claim, Counter claim including . interest is Rs. 10 crores and above, the parties shall be within their rights to take recourse to remedies other than Arbitration, as may be available to them under the applicable laws after prior intimation to the other party. Subject to the aforesaid conditions, provisions of the Arbitration and Conciliation Act, 1996 and any statutory modifications or re-enactment thereof as amended from time to time, shall apply to the arbitration proceedings under this clause.
- 21.2.10. In case, multiple arbitrations are invoked (whether sub-judice or arbitral award passed) by any party to under this contract, then the cumulative value of claims (including interest claimed or awarded) in all such arbitrations shall be taken in account while arriving at the total claim in dispute for the subject contract for the purpose of clause 21.2.9. Disputes having cumulative value of less than 10 crores shall be resolved through arbitration and any additional dispute shall be adjudicated by the court of competent jurisdiction.
- 21.3. In case of contract with Public Sector Enterprise (PSE) or a Government Department, the following shall be applicable:

In the event of any dispute or difference relating to the interpretation and application of the provisions of commercial contract(s) between Central Public Sector Enterprises (CPSEs)/ Port Trusts inter se and also between CPSEs and Government Departments/Organizations (excluding disputes concerning Railways, Income Tax, Customs & Excise Departments), such dispute or difference shall be taken up by either party for resolution through AMRCD (Administrative Mechanism for Resolution of CPSEs Disputes) as mentioned in DPE OM No. 05/0003/2019-FTS-10937 dated 14-12-2022 as amended from time to time.

22. JURISDICTION

Subject to clause 21 of this contract, the Civil Court having original Civil Jurisdiction in Tiruchirappalli shall alone have exclusive jurisdiction in regard to all matters in respect of the Contract.

GOVERNING LAWS

The contract shall be governed by the Law for the time being in force in the Republic of India.

23. FORCE MAJEURE:

23.1. "Force Majeure" shall mean circumstance which is:

- a) beyond control of either of the parties to contract,
- b) either of the parties could not reasonably have provided against the event before entering into the contract,
- c) having arisen, either of the parties could not reasonably have avoided or overcome, and
- d) is not substantially attributable to either of the parties

And

Prevents the performance of the contract,

Such circumstances include but shall not be limited to:

- i. War, hostilities, invasion, act of foreign enemies.
- ii. Rebellion, terrorism, revolution, insurrection, military or usurped power, or civil war.
- iii. Riot, commotion or disorder by persons other than the contractor's personnel and other employees of the contractor and sub-contractors.
- iv. Strike or lockout not solely involving the contractor's personnel and other employees of the contractor and sub-contractors.
- v. Encountering munitions of war, explosive materials, ionizing radiation or contamination by radio-activity, except as may be attributable to the contractor's use of such munitions, explosives, radiation or radio- activity.
- vi. Natural catastrophes such as earthquake, tsunami, volcanic activity, hurricane or typhoon, flood, fire, cyclones etc.
- vii. Epidemic, pandemic etc.

23.2. The following events are explicitly excluded from Force Majeure and are solely the responsibilities of the non-performing party: a) any strike, work-to-rule action, go-slow or similar labour difficulty (b) late delivery of equipment or material (unless caused by Force Majeure event) and (c) economic hardship.

23.3 If either party is prevented, hindered or delayed from or in performing any of its obligations under the Contract by an event of Force Majeure, then it shall notify the other in writing of the occurrence of such event and the circumstances thereof within 15 (fifteen) days after the occurrence of such event.

23.4 The party who has given such notice shall be excused from the performance or punctual performance of its obligations under the Contract for so long as the relevant event of Force Majeure continues and to the extent that such party's performance is prevented, hindered or delayed. The Time for Completion shall be extended by a period of time equal to period of delay caused due to such Force Majeure event.

23.5 Delay or non-performance by either party hereto caused by the occurrence of any event of Force Majeure shall not

v) Constitute a default or breach of the Contract.

vi) Give rise to any claim for damages or additional cost expense occasioned thereby, if and to the extent that such delay or non-performance is caused by the occurrence of an event of Force Majeure.

23.6 BHEL at its discretion may consider short closure of contract after 1 year of imposition of Force Majeure in line with extant guidelines. In any case, Supplier/Vendor cannot consider deemed short-closure after 1 year of imposition of Force Majeure.

24. NON-DISCLOSURE AGREEMENT:

The bidders shall enter into the Non-disclosure agreement separately. (Format attached).

25. CARTEL FORMATION:

The Bidder declares that they will not enter into any illegal or undisclosed agreement or understanding, whether formal or informal with other Bidder(s). This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process. In case, the Bidder is found having indulged in above activities, suitable action shall be taken by BHEL as per extant policies/ guidelines.

26. FRAUD PREVENTION POLICY:

Bidder along with its associate /collaborators /sub-contractors /sub-vendors / consultants / service providers shall strictly adhere to BHEL Fraud Prevention Policy displayed on BHEL website <http://www.bhel.com> and shall immediately bring to the notice of BHEL Management about any fraud or suspected fraud as soon as it comes to their notice.

27. SUSPENSION OF BUSINESS DEALINGS WITH SUPPLIERS / CONTRACTORS:

The offers of the bidders who are under suspension as also the offers of the bidders, who engage the services of the banned firms / principal / agents, shall be rejected. The list of banned firms is available on BHEL web site www.bhel.com.

If any bidder / supplier / contractor during pre-tendering / tendering / post tendering / award / execution / post-execution stage indulges in any act, including but not limited to, mal-practices, cheating, bribery, fraud or and other misconduct or formation of cartel so as to influence the bidding process or influence the price or tampers the tendering process or acts or omits in any manner which tantamount to an offence punishable under any provision of the Indian Penal Code, 1860(Bhartiya Nyaya Samhita 2023) or any other law in force in India, or does anything which is actionable under the Guidelines for Suspension of Business dealings, action may be taken against such bidder / supplier / contractor as per extant guidelines of the company available on www.bhel.com and / or under applicable legal provisions. Guidelines for suspension of business dealings is available in the webpage:

http://www.bhel.com/vender_registration/vender.php.

28. CONTACT DETAILS:

Bid should be free from correction, overwriting, using corrective fluid, etc. Any interlineation, cutting, erasure or overwriting shall be valid only if they are attested under full signature(s) of person(s) signing the bid else bid shall be liable for rejection. In the event of any Technical or Commercial queries, the same may please be addressed to the following BHEL concerned before Part I opening-

N SUJITH, MANAGER/ MM / SSTP, BHEL Tiruchirappalli Email: nsujith@bhel.in Ph: 04312578518	R RAGHUVVEER SR MANAGER/MM/SSTP, BHEL Tiruchirappalli Email: raghuv@bhel.in Ph: 04312578468
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29.ORDER OF PRECEDENCE:

In the event of any ambiguity or conflict between the Tender Documents, the order of precedence shall be in the order below:

1. Amendments/Clarifications/Corrigenda/Errata etc. issued in respect of the tender documents by BHEL.
2. Buyer Added Bid Specific ATC
3. GeM Bid Technical Conditions of Contract (TCC)
4. GeM GTC

30.NOTE:

1. In the event of our customer order covering this tender being cancelled /placed on hold /otherwise modified, BHEL would be constrained to accordingly cancel / hold / modify the tender at any stage of execution.
2. BHEL may negotiate the L1 rate, if not meeting our budget / estimated cost. BHEL may re-float the tender opened, if L1 price is not acceptable to BHEL even after negotiation.

Any deviation from the conditions specified in TECHNO-COMMERCIAL TERMS AND CONDITIONS - Annexure-A, will lead to rejection of offer.

3. Any change in applicable rates of Tax or any other statutory levies (Direct / Indirect) or any new introduction of any levy by means of statute and its corresponding liability for the deliveries beyond the agreed delivery date for reasons not attributable to BHEL will be to vendors account. BHEL will not reimburse the same and any subsequent claim in this respect will be summarily rejected.
4. BHEL reserves its right to reject an offer due to unsatisfactory past performance by the respective Vendor in the execution of any contract to any BHEL project / Unit.
5. The offers of the bidders who are under suspension and also the offers of the bidders, who engage the services of the banned firms /principal/agents, shall be rejected. The list of banned firms is available on BHEL web site www.bhel.com.
6. Recovery / deduction as applicable as per Direct and Indirect taxes as notified by Govt. Of India from time to time will be made and information/certificate for such deduction/recoveries shall be provided by BHEL to the vendor.

31. ENCLOSURE:

- Annexure-1: Check List.
- Annexure-2: Offer forwarding letter / tender submission letter
- Annexure-3: No Deviation Certificate
- Annexure-4: Declaration regarding Insolvency/ Liquidation/ Bankruptcy Proceedings
- Annexure-5: Declaration by Authorized Signatory
- Annexure-6: Declaration by Authorized Signatory regarding Authenticity of submitted Documents
- Annexure-7: Non-Disclosure Certificate
- Annexure-8: Integrity Pact
- Annexure-9: Declaration confirming knowledge about Site Conditions
- Annexure-10: Declaration reg. Related Firms & their areas of Activities
- Annexure-11: Declaration for relation in BHEL
- Annexure- 12: Declaration reg. minimum local content in line with revised public procurement

Annexure- 13: Declaration regarding compliance to Restrictions under Rule 144 (xi) of GFR 2017

Annexure-14: Bank Account Details for E-Payment

Annexure-15: Power of Attorney for submission of tender.

Annexure-16: Proforma of Bank Guarantee for Earnest Money.

Annexure-17: Proforma of Bank Guarantee for Performance Security.

Annexure-18: List of Consortium Bank.

ANNEXURE 1: CHECKLIST

NOTE: - Suppliers are required to fill in the following details in their Letterhead and no column should be left blank

A	Name & Address of the Supplier		
B	GSTN No. the supplier (Place of Execution of Contract / Purchase order)		
C	Details of the contact person for this tender		
D	EMD Details		
E	DESCRIPTION	Applicability (By BHEL)	Enclosed by Bidder (Yes/No)
i	Whether Pre - Qualification Criteria is understood and provided proper supporting documents.	Applicable/ Not Applicable	Yes / No
ii	Whether all pages of the Tender documents including annexures, appendices etc are read and understood	Applicable/ Not Applicable	Yes / No
iii	Audited Balance Sheet and profit & Loss Account for the last three years	Applicable/ Not Applicable	Yes / No
iv	Copy of PAN Card & GST registration	Applicable/ Not Applicable	Yes / No
v	Submission of MSE certificate as specified in Tender	Applicable/ Not Applicable	Yes / No
vi	Offer forwarding letter / tender submission letter as per Annexure – 2	Applicable/ Not Applicable	Yes / No
vii	Submission of Certificate of No Deviation as per Annexure – 3	Applicable/ Not Applicable	Yes / No
viii	Declaration regarding Insolvency/ Liquidation/ Bankruptcy Proceedings as per Annexure – 4	Applicable/ Not Applicable	Yes / No
ix	Declaration by Authorized Signatory as per Annexure – 5	Applicable/ Not Applicable	Yes / No
x	Declaration by Authorized Signatory regarding Authenticity of submitted Documents Annexure – 6	Applicable/ Not Applicable	Yes / No
xi	Submission of Non-Disclosure Certificate as per Annexure – 7	Applicable/ Not Applicable	Yes / No
xii	Submission of Integrity Pact as specified in Tender as per Annexure – 8	Applicable/ Not Applicable	Yes / No
xiii	Declaration confirming knowledge about Site Conditions as per Annexure – 9	Applicable/ Not Applicable	Yes / No
xiv	Declaration reg. Related Firms & their areas of Activities as per Annexure – 10	Applicable/ Not Applicable	Yes / No
xv	Declaration for relation in BHEL as per Annexure – 11	Applicable/ Not Applicable	Yes / No
xvi	Declaration reg. minimum local content in line with revised public procurement as per Annexure – 12	Applicable/ Not Applicable	Yes / No

xvii	Declaration regarding compliance to Restrictions under Rule 144 (xi) of GFR 2017 as per Annexure – 13	Applicable/ Not Applicable	Yes / No
xviii	Bank Account Details for E-Payment as per Annexure – 14	Applicable/ Not Applicable	Yes / No
xix	Power of Attorney for submission of tender as per Annexure – 15	Applicable/ Not Applicable	Yes / No
xx	Proforma of Bank Guarantee for Earnest Money as per Annexure – 16	Applicable/ Not Applicable	Yes / No
xxi	Bank guarantee for performance security as per annexure - 17	Applicable/ Not Applicable	Yes / No

NOTE: Strike off 'YES' or 'NO', as applicable. Tender not accompanied by the prescribed **above applicable documents** are liable to be summarily rejected.

Date:

Sign of the Authorised Signatory

ANNEXURE 2: OFFER FORWARDING LETTER / TENDER SUBMISSION LETTER

(To be typed and submitted in the Letter Head of the Company/Firm of Bidder)

Offer Reference No:

DT:

To,

(Write Name & Address of Officer of BHEL inviting the Tender)

Dear Sir,

Sub: Submission of Offer against GeM Bid No.: _____

Having examined the tender documents against your GeM Bid No. _____ dated _____ and having understood the provisions of the said tender documents and having thoroughly studied the requirements of BHEL related to the work tendered for, in connection with Seamless Steel Tube Plant, BHEL Trichy, we hereby submit our offer for the proposed work in accordance with terms and conditions mentioned in the tender documents, at the prices quoted by us and as per the indicated delivery schedule.

Should our Offer be accepted by BHEL for Award, I/we further agree to furnish 'Performance Security' for the work as provided for in the Tender Conditions within the stipulated time as may be indicated by BHEL.

I/We further agree to execute all the works referred to in the said Tender documents upon the terms and conditions contained or referred to therein and as detailed in the appendices annexed thereto.

I/We have deposited herewith the requisite Earnest Money Deposit (EMD) as per details furnished in the Check List.

Authorised Representative of the bidder

Signature:

Name:

Address:

Place:

Date:

ANNEXURE 3: CERTIFICATE OF NO DEVIATION

(To be Typed & submitted in the Letter Head of the Company/Firm of Bidder)

To,

(Write Name & Address of Officer of BHEL inviting the Tender)

Dear Sir,

Subject: No Deviation Certificate

Ref: 1) GeM Bid No:,

2) All other pertinent issues till date

We hereby confirm that we have not changed/ modified/materially altered any of the tender documents as downloaded from the website/ issued by BHEL and in case of such observance at any stage, it shall be treated as null and void.

We also hereby confirm that we have neither set any Terms and Conditions and nor have we taken any deviation from the Tender conditions together with other references applicable for the above referred GeM Bid.

We further confirm our unqualified acceptance to all Terms and Conditions, unqualified compliance to Tender Conditions.

We confirm to have submitted offer in accordance with tender instructions and as per aforesaid references.

Thanking you,

Yours Faithfully,

(Signature, date & seal of authorized
Representative of the bidder)

Place:

Date:

ANNEXURE 4: UNDERTAKING

(To be typed and submitted in the Letter Head of the Company/Firm of Bidder)

To,

(Write Name & Address of Officer of BHEL inviting the Tender)

Dear Sir/Madam,

Sub: DECLARATION REGARDING INSOLVENCY/ LIQUIDATION/ BANKRUPTCY PROCEEDINGS

Ref: GeM Bid Specification No:

I/We, _____
declare that, I/We am/are not admitted under insolvency resolution process or liquidation under Insolvency and Bankruptcy Code, 2016, as amended from time to time or under any other law as on date, by NCLT or any adjudicating authority/authorities.

Sign of the AUTHORISED SIGNATORY
(With Name, Designation & Company Seal)

Place:

Date:

ANNEXURE6 : DECLARATION BY AUTHORISED SIGNATORY OF BIDDER
(To be typed and submitted in the Letter Head of the Company/Firm of Bidder)

To,

(Write Name & Address of Officer of BHEL inviting the Tender)

Dear Sir,

Sub : Declaration by Authorised Signatory regarding Authenticity of submitted documents.

Ref : 1) GeM Bid No. & Date:

2) All other pertinent issues till date

I/We, hereby certify that all the documents submitted by us in support of possession of “Qualifying Requirements” are true copies of the original and are fully compliant required for qualifying / applying in the bid and shall produce the original of same as and when required by Bharat Heavy Electricals Limited.

I / We hereby further confirm that no tampering is done with documents submitted in support of our qualification as bidder. I / We understand that at any stage (during bidding process or while executing the awarded contract) if it is found that fake / false / forged bid qualifying / supporting documents / certificates were submitted, it would lead to summarily rejection of our bid / termination of contract. BHEL shall be at liberty to initiate other appropriate actions as per the terms of the Bid / Contract and other extant policies of Bharat Heavy Electricals Limited.

Yours Faithfully

(Signature, Date & Seal of Authorised Signatory
Of the bidder)

Date:

ANNEXURE 10: DECLARATION

Date:

To,

(Write Name & Address of Officer of BHEL inviting the Tender)

Dear Sir/ Madam,

Sub: Details of related firms and their area of activities

Please find below details of firms owned by our family members that are doing business/ registered for same item with BHEL, _____ (NA, if not applicable)

1	Material Category/ Work Description	
	Name of Firm	
	Address of Firm	
	Nature of Business	
	Name of Family Member	
	Relationship	
2	Material Category/ Work Description	
	Name of Firm	
	Address of Firm	
	Nature of Business	
	Name of Family Member	
	Relationship	
..

Note: I certify that the above information is true and I agree for penal action from BHEL in case any of the above information furnished is found to be false.

Regards,

(_____)

From: M/s _____

Supplier Code: _____

Address: _____

ANNEXURE 11 : DECLARATION FOR RELATION IN BHEL

(To be typed and submitted in the Letter Head of the Company/Firm of Bidder failing which the offer of Bidder is liable to be summarily rejected)

To,

(Write Name & Address of Officer of BHEL inviting the Tender)

Dear Sir,

Sub: Declaration for relation in BHEL

Ref: 1) GeM Bid Specification No:

I/We hereby submit the following information pertaining to relation/relatives of Proprieter/Partner(s)/ Director(s) employed in BHEL

Tick (✓) any one as applicable:

1. The Proprieter, Partner(s), Director(s) of our Company/Firm DO NOT have any relation or relatives employed in BHEL

OR

2. The Proprieter, Partner(s), or Director(s) of our Company/Firm HAVE relation/relatives employed in BHEL and their particulars are as below:

i.

ii.

(Signature, Date & Seal of Authorised

Signatory of the bidder)

Note:

1. Attach separate sheet, if necessary.

2. If BHEL Management comes to know at a later date that the information furnished by the Bidder is false, BHEL reserves the right to take suitable action against the Bidder/Contractor.

ANNEXURE 12: DECLARATION REGARDING MINIMUM LOCAL CONTENT IN LINE WITH REVISED PUBLIC PROCUREMENT (PREFERENCE TO MAKE IN INDIA), ORDER 2017 DATED 04TH JUNE, 2020 AND SUBSEQUENT ORDER(S)

(To be typed and submitted in the Letter Head of the Entity/Firm providing certificate as applicable)

To,

(Write Name & Address of Officer of BHEL inviting the Tender)

Dear Sir,

Sub: Declaration reg. minimum local content in line with Public Procurement (Preference to Make in India), Order 2017-Revision, dated 04th June, 2020 and subsequent order(s).

Ref: 1) GeM Bid Specification No:

2) All other pertinent issues till date

We hereby certify that the items/works/services offered by..... (specify the name of the organization here) has a local content of _____ % and this meets the local content requirement for 'Class-I local supplier' / 'Class II local supplier' ** as defined in Public Procurement (Preference to Make in India), Order 2017-Revision dated 04.06.2020 issued by DPIIT and subsequent order(s).

The details of the location(s) at which the local value addition is made are as follows:

1. _____

2. _____

Thanking you,

Yours faithfully,

(Signature, Date & Seal of Authorised

Signatory of the Bidder)

** - Strike out whichever is not applicable

Note:

1. Bidders to note that above format, duly filled & signed by authorized signatory, shall be submitted along with the techno-commercial offer.
2. In case the bidder's quoted value is in excess of Rs. 10 crores, the authorized signatory for this declaration shall necessarily be the statutory auditor or cost auditor of the company (in the case of companies) or a practising cost accountant or practicing chartered accountant (in respect of suppliers other than companies).
3. In the event of false declaration, actions as per the above order and as per BHEL Guidelines shall be initiated against the bidder.

**ANNEXURE 13: DECLARATION REGARDING COMPLIANCE TO RESTRICTIONS
UNDER RULE 144 (xi) OF GFR 2017**

(To be typed and submitted in the Letter Head of the Entity/ Firm providing certificate as applicable)

To,

(Write Name & Address of Officer of BHEL inviting the Tender)

Dear Sir,

Sub: Declaration regarding compliance to Restrictions under Rule 144 (xi) of GFR 2017

Ref: 1) GeM Bid Specification No:

2) All other pertinent issues till date

I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India. I certify that _____ (SPECIFY THE NAME OF THE ORGANIZATION HERE), is not from such a country/ has been registered with the Competent Authority (attach valid registration by the Competent Authority, i.e., the Registration Committee constituted by the Dept. for Promotion of Industry and Internal Trade (DPIIT)).

I hereby certify that we fulfil all requirements in this regard and is eligible to be considered.

Thanking you,
Yours faithfully,

(Signature, Date & Seal of Authorised
Signatory of the bidder)

Note: Bidders to note that in case above certification given by a bidder, whose bid is accepted, is found to be false, then this would be a ground for immediate termination and for taking further action in accordance with law and as per BHEL guidelines.

ANNEXURE 14: BANK ACCOUNT DETAILS FOR E-PAYMENT

(To be given on Letter head of the Company /Firm of Bidder, and **ENDORSED (SIGNED & STAMPED)**
BY THE BANK to enable BHEL release payments through Electronic Fund Transfer (EFT/RTGS)

1. Beneficiary Name :

2. Beneficiary Account No. :

3. Bank Name & Branch :

4. City/Place :

5. 9 digit MICR Code of Bank Branch :

6. IFSC Code of Bank Branch :

7. Beneficiary E-mail ID :

(for payment confirmation)

NOTE: In case Bank endorsed certificate regarding above has already been submitted earlier, kindly submit photocopy of the same

ANNEXURE 15: POWER OF ATTORNEY for SUBMISSION OF TENDER

KNOW ALL MEN BY THESE PRESENTS, that I/We do hereby make, nominate, constitute and appoint Mr., whose signature given below herewith to be true and lawful Attorney of M/s..... hereinafter called 'Company', for submitting Tender/entering into Contract and inter alia, sign, execute all papers and to do necessary lawful acts on behalf of Company with M/s Bharat Heavy Electricals Ltd, Central Procurement Cell (CPC), in connection with

.....vide GeM Bid No: _____, dated _____.

And the Company do hereby agree to ratify and confirm all acts, deeds, things or proceedings as may be lawfully done by the said attorney and by or on behalf of the company and in the name of the company, by virtue of the powers conferred herein and the same shall be binding on the company and shall have full force and effect.

IN WITNESS WHEREOF, the common seal of the company has been hereunto affixed in the manner hereinafter appearing on the document.

Dated at _____, this _____ day of _____

Director/CMD/Partner/Proprietor

Signature of Mr.

Attested by: Director/CMD/Partner/Proprietor

ANNEXURE 16: PROFORMA OF BANK GUARANTEE FOR EARNEST MONEY

(On non-Judicial paper of appropriate value)

Bank Guarantee No.....

Date.....

To

(Employer's Name and Address)

.....

Dear Sirs,

In accordance with the terms and conditions of Invitation for Bids/Notice Inviting Tender No.....¹(Tender Conditions), M/s. having its registered office at² (hereinafter referred to as the 'Tenderer'), is submitting its bid for the work of.....³ invited by⁴.(name of the Employer) through its Unit at(The Tender Conditions provide that the Tenderer shall pay a sum of Rs as Earnest Money Deposit in the form therein mentioned. The form of payment of Earnest Money Deposit includes Bank Guarantee executed by a Scheduled Bank. In lieu of the stipulations contained in the aforesaid Tender Conditions that an irrevocable and unconditional Bank Guarantee against Earnest Money Deposit for an amount of⁵ is required to be submitted by the Tenderer as a condition precedent for participation in the said Tender and the Tenderer having approached us for giving the said Guarantee,

we, the[Name & address of the Bank]

..... having our Registered Office at

.....(hereinafter referred to as the Bank) being the Guarantor under this

Guarantee, hereby irrevocably and unconditionally undertake to forthwith and immediately pay to the Employer without any demur, merely on your first demand any sum or sums of Rs.⁵ (in words Rupees.....) without any reservation, protest, and recourse and without the beneficiary needing to prove or demonstrate reasons for its such demand.

Any such demand made on the Bank shall be conclusive as regards the amount due and payable by the Bank under this guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs.

We undertake to pay to the Employer any money so demanded notwithstanding any dispute or disputes raised by the Vendor/Contractor/Vendors in any suit or proceeding pending before any Court or Tribunal, Arbitrator or any other authority, our liability under this present being absolute and unequivocal.

The payment so made by us under this Guarantee shall be a valid discharge of our liability for payment hereunder and the Tenderer shall have no claim against us for making such payment.

We Bank further agree that the Employer shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said Tender or to extend the time of submission of from time to time or to postpone for any time or from time to time any of the powers exercisable by the Employer against the said Tenderer and we shall not be relieved from our liability by reason of any such variation, or extension being granted to the said Tenderer or for any forbearance, act or omission on the part of the Employer or any indulgence by the Employer to the said

Tenderer or by any such matter or thing whatsoever which under the law relating to sureties would but for this provision have effect of so relieving us.

The Bank also agrees that the Employer at its option shall be entitled to enforce this Guarantee against the Bank as a principal debtor, in the first instance without proceeding against the Tenderer and notwithstanding any security or other guarantee that the Employer may have in relation to the Tenderer's liabilities.

This Guarantee shall be irrevocable and shall remain in force upto and including.....⁶ and shall be extended from time to time for such period as may be desired by the Employer.

This Guarantee shall not be determined or affected by liquidation or winding up, dissolution or change of constitution or insolvency of the Tenderer but shall in all respects and for all purposes be binding and operative until payment of all money payable to the Employer in terms hereof. However, unless a demand or claim under this Guarantee is made on us in writing on or before the⁷ we shall be discharged from all liabilities under this Guarantee.

This Bank Guarantee shall be governed, construed and interpreted in accordance with the laws of India.

Courts at shall alone have exclusive jurisdiction over any matter arising out of or in connection with this Bank Guarantee

We, Bank lastly undertake not to revoke this guarantee during its currency except with the previous consent of the Employer in writing.

Notwithstanding anything to the contrary contained hereinabove:

a. The liability of the Bank under this Guarantee shall not exceed.....⁵.....

b. This Guarantee shall be valid up to⁶

c. Unless the Bank is served a written claim or demand on or before⁷ all rights under this guarantee shall be forfeited and the Bank shall be relieved and discharged from all liabilities under this guarantee irrespective of whether or not the original bank guarantee is returned to the Bank

We, Bank, have power to issue this Guarantee under law and the undersigned as a duly authorized person has full powers to sign this Guarantee on behalf of the Bank.

For and on behalf of
(Name of the Bank)

Date.....

Place of Issue.....

1 Details of the Invitation to Bid/Notice Inviting Tender

2 Name and Address of the Tenderer

3 Details of the Work

4 Name of the Employer

5 BG Amount in words and Figures

6 Validity Date

7 Date of Expiry of Claim Period

ANNEXURE 17: BANK GUARANTEE FOR PERFORMANCE SECURITY

(On non-Judicial paper of appropriate value)

Bank Guarantee No:

Date:

To

NAME

& ADDRESSES OF THE BENEFICIARY

Dear Sirs,

In consideration of Bharat Heavy Electricals Limited (hereinafter referred to as the 'Employer' which expression shall unless repugnant to the context or meaning thereof, include its successors and permitted assigns) incorporated under the Companies Act, 1956 and having its registered office at _____¹ through its Unit at.....(name of the Unit) having awarded to (Name of the Vendor / Contractor / Supplier) with its registered office at _____² hereinafter referred to as the ' Vendor / Contractor / Supplier ', which expression shall unless repugnant to the context or meaning thereof, include its successors and permitted assigns), a contract Ref No.....dated³ valued at Rs.....⁴ (Rupees -----) / FC.....(in words.....) for⁵ (hereinafter called the 'Contract') and the Vendor / Contractor / Supplier having agreed to provide a Contract Performance Bank Guarantee, equivalent to% (.... Percent) of the said value of the Contract to the Employer for the faithful performance of the Contract, We,, (hereinafter referred to as the Bank), having registered/Head office at and inter alia a branch at being the Guarantor under this Guarantee, hereby, irrevocably and unconditionally undertake to forthwith and immediately pay to the Employer any sum or sums upto a maximum amount of Rs ----- ⁶ (Rupees -----) without any demur, immediately on first demand from the Employer and without any reservation, protest, and recourse and without the Employer needing to prove or demonstrate reasons for its such demand.

Any such demand made on the Bank shall be conclusive as regards the amount due and payable by the Bank under this guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs. _____.

We undertake to pay to the Employer any money so demanded notwithstanding any dispute or disputes raised by the Vendor / Contractor / Supplier in any suit or proceeding pending before any Court or Tribunal, Arbitrator or any other authority, our liability under this present being absolute and unequivocal.

The payment so made by us under this Guarantee shall be a valid discharge of our liability for payment thereunder and the Vendor / Contractor / Supplier shall have no claim against us for making such payment.

We thebank further agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said Contract/ satisfactory completion of the performance guarantee period as per the terms of the Contract and that it shall continue to be enforceable till all the dues of the Employer under or by virtue of the said Contract have been fully paid and its claims satisfied or discharged.

WeBANK further agree with the Employer that the Employer shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said Contract or to extend time of performance by the said Vendor / Contractor / Supplier from time to time or to postpone for any time or from time to time any of the powers exercisable by the Employer against the said Vendor /

Contractor / Supplier and to forbear or enforce any of the terms and conditions relating to the said Contract and we shall not be relieved from our liability by reason of any such variation, or extension being granted to the said Vendor / Contractor / Supplier or for any forbearance, act or omission on the part of the Employer or any indulgence by the Employer to the said Vendor / Contractor / Supplier or by any such matter or thing whatsoever which under the law relating to sureties would but for this provision have effect of so relieving us.

The Bank also agrees that the Employer at its option shall be entitled to enforce this Guarantee against the Bank as a principal debtor, in the first instance without proceeding against the Vendor / Contractor / Supplier and notwithstanding any security or other guarantee that the Employer may have in relation to the Vendor / Contractor / Supplier 's liabilities.

This Guarantee shall remain in force upto and including..... 7 and shall be extended from time to time for such period as may be desired by Employer.

This Guarantee shall not be determined or affected by liquidation or winding up, dissolution or change of constitution or insolvency of the Vendor / Contractor / Supplier but shall in all respects and for all purposes be binding and operative until payment of all money payable to the Employer in terms thereof.

Unless a demand or claim under this guarantee is made on us in writing on or before the8 we shall be discharged from all liabilities under this guarantee thereafter. This Bank Guarantee shall be governed, construed and interpreted in accordance with the laws of India.

Courts at shall alone have exclusive jurisdiction over any matter arising out of or in connection with this Bank Guarantee

We, BANK lastly undertake not to revoke this guarantee during its currency except with the previous consent of the Employer in writing.

Notwithstanding anything to the contrary contained hereinabove:

a. The liability of the Bank under this Guarantee shall not exceed..... 6

b. This Guarantee shall be valid up to7

c. Unless the Bank is served a written claim or demand on or before8 all rights under this guarantee shall be forfeited and the Bank shall be relieved and discharged from all liabilities under this guarantee irrespective of whether or not the original bank guarantee is returned to the Bank.

We, Bank, have power to issue this Guarantee under law and the undersigned as a duly authorized person has full powers to sign this Guarantee on behalf of the Bank.

For and on behalf of
(Name of the Bank)

Dated.....

Place of Issue.....

1 NAME AND ADDRESS OF EMPLOYER i.e., Bharat Heavy Electricals Limited

2 NAME AND ADDRESS OF THE VENDOR / CONTRACTOR / SUPPLIER.

3 DETAILS ABOUT THE NOTICE OF AWARD/CONTRACT REFERENCE

4 CONTRACT VALUE

5 PROJECT/SUPPLY DETAILS

6 BG AMOUNT IN FIGURES AND WORDS

7 VALIDITY DATE

8 DATE OF EXPIRY OF CLAIM PERIOD

ANNEXURE 18: LIST OF CONSORTIUM BANKS

Sl No.	Name of the Bank
1	State Bank of India
2	Canara Bank
3	IDBI Bank Limited
4	ICICI Bank Limited
5	HDFC Bank Limited
6	Axis Bank
7	IndusInd Bank Limited
8	Bank of Baroda
9	Exim Bank
10	Indian Bank
11	Punjab National Bank
12	Union Bank of India
13	Yes Bank Limited
14	RBL Bank Ltd.
15	Standard Chartered Bank
16	Indian Overseas Bank
17	Kotak Mahindra Bank Limited
18	Federal Bank Limited
19	Hongkong and Shanghai Banking Corporation Ltd