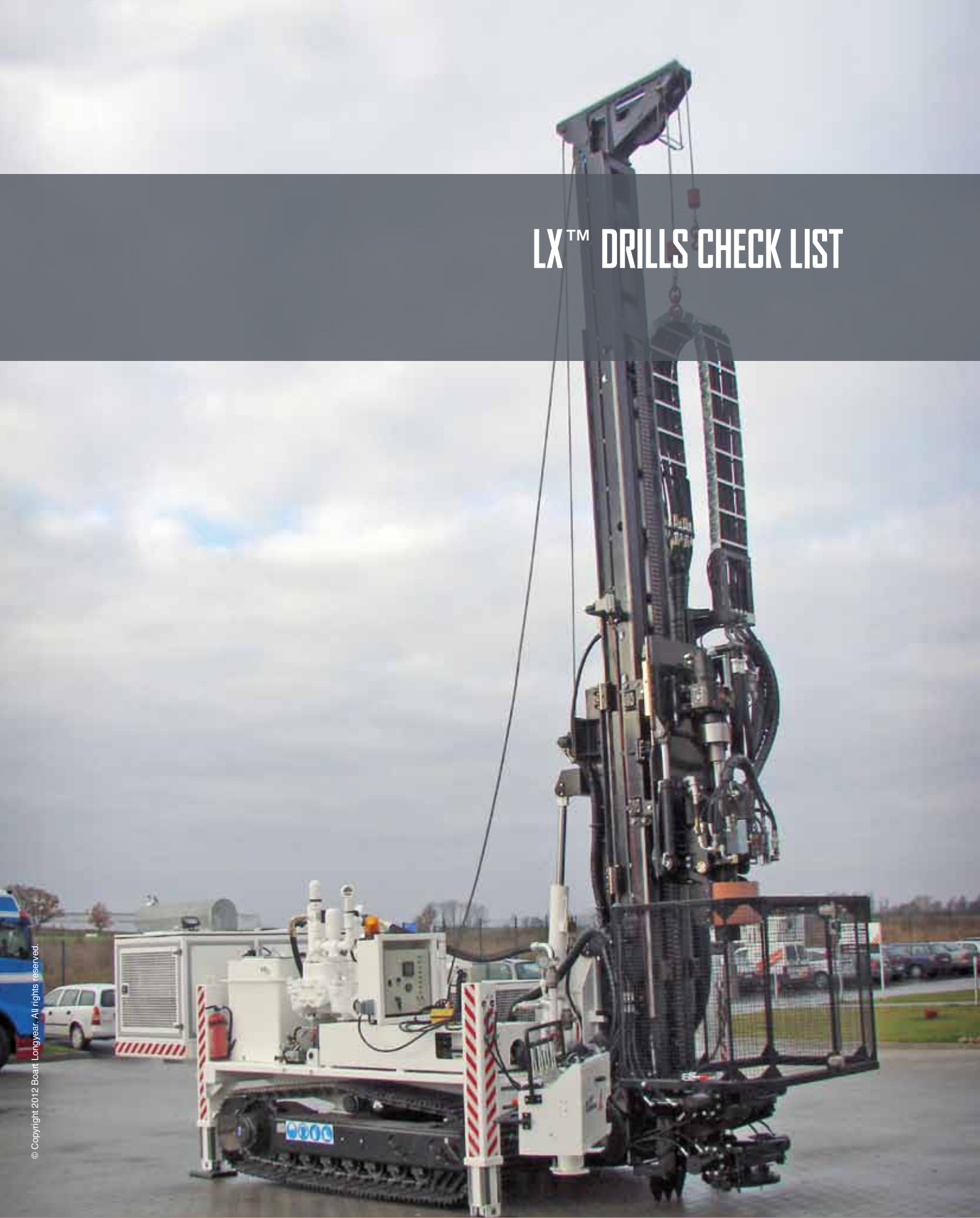
LX™ DRILLS

Commissioning Checklist

BOART LONGYEAR™

LX™ DRILLS CHECK LIST



Commissioning Procedure

Ensure you have a copy of the sales order with you to review content with the customer (no pricing to be listed on your copy) prior to starting the commissioning process.

COMMISSIONING PROCESS

☐ Drilling Safety

Refer to the Drilling Safety guide in front of the parts book.

Train drill crew in safe drilling procedures and practices.

Ensure that all safety guards are left installed on the equipment, the site is keep clean with no tripping hazards, train in rod handling, fuel storage etc.

ADVISE OPERATOR

NEVER:

– travel up or down with the feed carriage as a man rider

– use the leveling jacks to pull stuck rods

– store the overshot inside the mast behind the feed cylinder

☐ Drill Inspection

Upon receipt of the drill the first thing to do is visually inspect the rig for any obvious damage or oil leaks that may have occurred during shipping. With the customer present inspect all items received. Using the packing lists check off all items and quantities received. Note any shipping errors.

☐ Drill Introduction

Discuss drill depth capacities, power unit HP/ KW rating, torque ratings etc. Describe the drill components, weights etc. Cover all tech data information with the customer and drill crew.

(Refer to the tech data in the operation and service manual)

☐ Operation, Engine Maintenance, Hydraulic System Maintenance, etc.

(Refer to the operation and service manual)

Using the table of contents as a guide read and discuss all sections of this manual with the drill crew.

(continued on following page)

LX™ DRILLS CHECK LIST (continued)

☐ Ordering Parts

Review the parts book with the customer discuss drill warranty, part numbering system, how to locate items in the parts book, procedure for ordering parts etc.

☐ Drill Setup & Anchoring

Ensure that the drill is properly anchored before the drilling operation begins. (if applicable)

[Refer to the anchoring procedure in the operation and service manual (if published)]

☐ Drill Startup

Prior to starting the engine, ensure that all shut off valves on the suction lines are tagged in the **open position.**

– Check the hydraulic reservoir oil level

– Remove engine covers, check engine oil level, check belt tension and electrical contacts. Record engine serial number.

– Check the coolant level in the radiator. (depending on model)

– Check the oil level in the Water pump

– Check the main winch oil level

– Check the battery water level in each cell, check battery terminals and isolator switch.

– Check the oil level in the rotary head gearbox (after raising the mast to the vertical position)

– Open electrical panel- examine, check for spare fuses and conical grease adapter.

– Open swing-out operators desk, fit control lever guard, check all levers are free to move and in the neutral position.

–Check all the fastening hardware on the drill mast, base frame, power unit etc. to ensure that they have not become loose in shipment

– Turn on ignition, check lights, fuel level is sufficient and rev counter is zero. Select “DRILLING”

– set throttle to 1⁄4 revs, start engine, check lights and rev counter operation, check pilot oil pressure (30bar)

–visual checks for oil leaks and inadvertent movements

– check operation of jack legs.

– check tracking controls are free to move and in the neutral position, select “TRACKING”

– check operation of tracking controls: (forwards, reverse, turning). Select “DRILLING” and lower jack legs

– Check operation of mast functions, (raise, dump, side slide) – Check operation of main winch and wireline winch, fit ropes if required.

(continued on following page)

– Operate rotation and check direction of rotation and speed adjustment. Select “CORING”

– Screw feed pressure and fine feed “out”: operate feed and check no movement.

– Screw feed pressure “in” and check for increasing movement.

– Allow head to stall at bottom and check full range of pressure adjustment. Select “Auguring”

– Operate feed/retract and check for free movement in both directions.

– Check function of fast feed (lift lever to check stall pressure)

– Check operation of clamps (adjustable pressure) and breakout cylinder.

– Check and lubricate all grease points and carriage rollers.

– Check operation of emergency stops and interlocking guards.

☐ Drilling Operations

Before the drilling starts, allow the driller to operate the drill to become familiar with the directional controls, speeds of functions, etc.

Train driller in clamp pad installation, and fitting and removal of drive flange.

Explain how to determine the bit weight pressure (review chart in Operations Manual).

☐ Corebarrel and Diamond Products Training

Refer to the coring catalogue to train the drill crew in core barrel and diamond product selection, use and maintenance.

(It is a good idea to leave a copy of the coring catalogue with the customer.)

Train in core barrel options such as landing indicator, water retention, types of bits and casing shoes etc.

☐ Service Tools Required for Commissioning

Basic hand mechanics hand tool kit, digital tachometer, infrared temperature sensor. Also an assortment of JIC test fittings, tees, etc. (supplied with tool kit – **contents may vary depending on order**). Train customer in use of these tools.

NOTE:
Explain to the customer that the drill has been fully tested at the factory using calibrated tools and instruments before shipping. The testing documents are available on request.

☐ Rotary head

Review the gear selection process and general maintenance of the gearbox. Ensure the driller knows how to change the drive flange.

Refer to the hydraulic schematic to train the customer on the hydraulic system explaining the flow path from pumps, valves etc.

(continued on following page)

LX™ DRILLS CHECK LIST (continued)

☐ Hydraulic System (Pump One)

Discuss and review the flow path, pressure setting and equipment controlled using the hydraulic schematic diagram

☐ Hydraulic System (Pump Two)

Discuss and review the flow path, pressure setting and equipment controlled using the hydraulic schematic diagram

☐ Hydraulic System (Pump Three)

Discuss and review the flow path, pressure setting and equipment controlled using the hydraulic schematic diagram.

☐ Rotary head gearbox

Review the operating procedures for the head with reference to the gear change procedures and the floating spindle.

☐ Drill Maintenance

Follow recommended service intervals and oil specifications in the operation and service manual. For information on the power unit servicing refer to the power unit maintenance manual.

☐ Complete and Submit Warranty Registration Check List

Fill out the form on the following page and send to Boart Longyear for warranty consideration.

WARRANTY REGISTRATION CHECK LIST

Once the drill commissioning has been completed fill out the warranty registration check list below. Fold in half, seal, add correct postage and mail to Boart Longyear, fax to 385-234-3095 or scan and email to warranty@boartlongyear.com. **Warranty registration must be completed and on file to obtain warranty consideration.**

Customer Name: _____ **Company:** _____

Customer Address: _____

Rig Model: _____ **Rig Serial Number:** _____

Drill Site: _____ **Date In Service:** _____

☐ **Drilling Safety**

☐ **Drill Inspection**

☐ **Drill Introduction**

☐ **Operation, Engine Maintenance, Hydraulic System Maintenance etc.**

☐ **Ordering Parts**

☐ **Drill Setup & Anchoring**

☐ **Drill Startup (daily)**

- ☐Check the hydraulic reservoir oil level
- ☐Check the engine oil level.
- ☐Check the coolant level in the radiator.
- ☐Check the oil level in the Water pump
- ☐Check the main winch oil level
- ☐Check the battery water level in each cell
- ☐Check the oil level in the rotation unit and gearbox after raising the mast to the vertical position
- ☐Check all the fastening hardware on the drill mast, base frame, power unit etc. to ensure that they have not become loose.

☐ **Drilling Operations**

☐ **Corebarrel and Diamond Products Training**

☐ **Rotary head gearbox**

☐ **Hydraulic System Explanation/Pressure Settings**

Pump one pressure and relief valve setting _____ / _____

Pump two pressure and relief valve setting _____ / _____

Pump three pressure and relief valve setting _____ / _____

☐ **COMMISSIONING SIGN OFF**

The commissioning technician is responsible for checking off all boxes beside headings as training progresses. Also signing off that the customer has been fully trained on the safe operation and maintenance of the drill rig. The customer is responsible for signing off that he fully understands and is satisfied with all aspects of the training provided.

Commissioning Date _____ **Technician Signature** _____

Customer Name _____ **Customer Signature** _____

TECHNICAL SUPPORT GROUP

BOART LONGYEAR GENUINE PARTS

Each Boart Longyear drill rig is a highly engineered system, rugged and reliable, with every part designed and built to precise specifications. To maintain quality and maximize efficiency, it is critical to use only genuine Boart Longyear parts. Parts repair and rebuild services are offered as a more efficient replacement parts option for major components.

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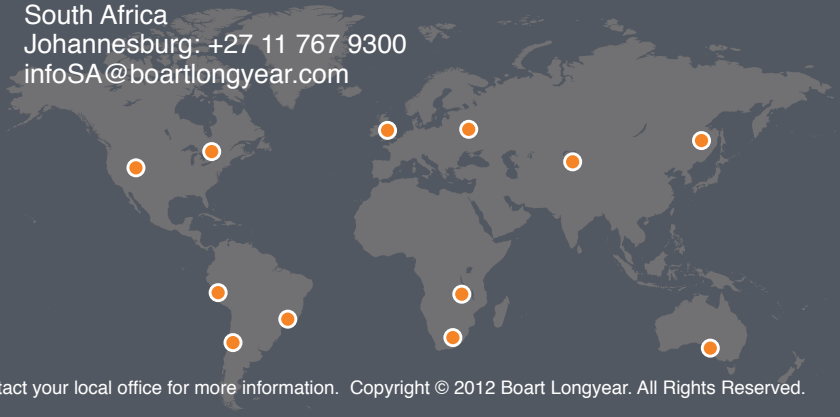

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