jGun pneumatic socket wrench

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1 About the document

1.1 Purpose of the document

The document shows the information to do these steps:

• Install the equipment
• Operate the equipment
• Maintain the equipment

The document contains the original instructions for the jGun pneumatic socket wrench, to which is referred with the term ‘tool’. The term ‘equipment’ is used as a more general term to refer to the entire system: the tool, its parts and its accessories, including the FRL.

1.2 How to work with the document

1. Read the document completely. Make sure that you understand all the instructions.
2. Obey the safety instructions to prevent injury or damage to equipment.
3. Do the procedures completely and in the given sequence.
4. Keep a copy of the latest version of the document and all related documents near the equipment.

1.3 Languages

The original language of the document is English. All other language versions are translations of the original instructions.

1.4 Illustrations

It is not always possible to provide a detailed illustration of every single item of the equipment. The illustrations in the document show a typical setup and are for instructional use only.

1.5 Safety symbols in the document

<table>
<thead>
<tr>
<th>Safety symbol</th>
<th>Function</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>!</td>
<td>Warning</td>
<td>“Warning” means that injury or death is possible if you do not obey the instructions.</td>
</tr>
<tr>
<td>!</td>
<td>Caution</td>
<td>“Caution” means that damage to equipment is possible if you do not obey the instructions.</td>
</tr>
<tr>
<td>!</td>
<td>Note</td>
<td>“Note” is used to give additional information.</td>
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1.6 Related documents

<table>
<thead>
<tr>
<th>Document name</th>
<th>Target group</th>
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<td>jGun pneumatic socket wrench</td>
<td>Personnel who operates the equipment</td>
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<td>User manual</td>
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1.7 Revision history

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1.8 Contact information

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2 Safety

2.1 General safety instructions

2.1.1 Personnel

- Do not allow unqualified personnel to perform tasks on or with the equipment.
- Keep unqualified personnel, children and animals away from the equipment.
- Wear personal protective equipment (PPE): safety helmet, safety goggles, hearing protection, safety gloves, safety shoes and coverall.
- Wear hearing protection. The sound emission of a standard tool is approximately 95 dB.
- Keep loose clothing, long hair and jewelry away from the moving parts.
- Stay alert. Use common sense. Do not use the equipment under the influence of mood-altering substances.
- Always stand in a firm position.
- Keep your hands away from the nut or the bolt being loosened or tightened.
- Do not stand in the line of movement of the tool during operation. If the tool separates from the nut or the bolt, it will detach in that direction.
- Be aware that a fastener that breaks off during operation will become a high-velocity projectile.
- Obey the local labor and safety laws and environmental regulations.

2.1.2 Work area

- Keep the work area clean and well lit.
- Keep the work area free of unwanted obstacles. Ensure free passages in the work area during operation.

2.1.3 Equipment

- Only use equipment that is approved by HYTORC.
- Only use equipment that is appropriate or compatible with the HYTORC equipment.
- Do not modify the equipment in any way.
- Only use the tools for the purposes for which they have been designed. Do not force small tools or accessories to do the job of a larger tool. HYTORC can develop customized accessories to ensure safe and simple operation. Contact your local HYTORC representative for more information.
- Inspect the equipment for visual damage before each use. Obey the instructions for maintenance of the equipment.
- Do not remove or disable the safety provisions on the equipment.
- Make sure that the cover plates are not damaged and installed correctly. All HYTORC tools are equipped with cover plates to cover moving parts. If cover plates are missing or damaged, contact your local HYTORC representative for repair.
- Do not apply more pressure to the equipment than the maximum allowable pressure.
- Do not hit reaction arms or sockets with heavy objects (e.g. hammers). If the nut or the bolt does not turn with the tool you are using, use a tool of a larger size.
- Do not cut, weld or otherwise modify reaction arms or sockets.
- Do not expose reaction arms or sockets to extremely high or low temperatures.
- Do not leave tools with reaction arms and sockets hanging on the nut or the bolt.
• Do not use FRLs, pneumatic hoses, hose connections with hose couplings, power cables or remote control cables to carry or move the equipment. Always hold the FRL or the tool to carry or move the equipment.
• Store tools and accessories which are not in use properly.

2.2 Additional safety instructions

2.2.1 FRL
• Only use HYTORC FRLs.
• Do not modify the FRL in any way.
• Metal-to-metal contact can cause sparks. Take appropriate additional measures.
• Make sure that the air supply pressure is between 6.2 bar (90 psi) and 10 bar (145 psi).
• Make sure that the maximum outgoing operating pressure of the FRL is not higher than the maximum permitted pressure of 6.2 bar (90 psi).
• Make sure that the FRL is filled with the (supplied) lubricating oil (Shell Tellus S2 VX 32).
• Make sure that the oil level in the oil filter reservoir is between the minimum mark and the maximum mark. Use the oil level sight glasses to check the oil level.
• Do not mix different grades of lubrication oil.
• Make sure that the oil filler cap is placed on the oil filling point.

2.2.2 Pneumatic hoses
• Only use HYTORC pneumatic hoses.
• Do not modify the pneumatic hoses in any way.
• Make sure that the pneumatic hoses are securely connected.
• Make sure that the pneumatic hoses are not kinked or twisted.
• Keep the pneumatic hoses away from the reaction point.
• Replace damaged pneumatic hoses immediately. Replace the pneumatic hoses at least every three years.

2.2.3 Reaction arms
• Only use HYTORC reaction arms.
• Do not modify the reaction arms in any way.
• Place the reaction arm against a solid reaction point that can handle the load.
• Only place the reaction area against the reaction point.
• Make sure that the end of the reaction arm has both horizontally and vertically at least 10 mm overlap with the reaction point. If a distance of at least 10 mm is not possible, choose another reaction point or use an appropriate reaction arm.

• Make sure that the reaction arm is locked onto the spline of the tool.
• Avoid excessive play. Pressurize the system momentarily. If the tool tends to creep or stand askew, stop immediately and adjust the reaction arm to a more solid and secure position.
• Do not place the reaction arm against a round or inclined reaction point.
• Do not place any part of your body between the reaction arm and the reaction point.
• Do not place objects between the reaction arm and the reaction point.
• When you use a reaction cup, make sure that the reaction cup is placed over the reaction point completely.
• When you use a reaction pin cup, make sure that the pin reaches the bottom of the hex bolt.

2.2.4 Sockets
• Only use HYTORC sockets.
• Do not modify the sockets in any way.
• Do not use sockets that have been excessively heated or cooled.
• Use thick-walled heavy-duty sockets only. Do not use thin-walled sockets.
• Only use deep well sockets when strictly necessary. The excessive height causes unnecessary bending forces.
• Do not use sockets that are used on impact wrenches. The impact deforms the drive hole of the socket and hardens and brittles the steel. This can cause fracture of the steel and increases the risk of flying objects.
• Make sure that the width across flats of the socket corresponds to the width across flats of the nut or the bolt. Note the difference between metric and imperial measurements.
• Place the tool with the socket on the nut or the bolt. Make sure that the socket is placed over the nut or the bolt as far as possible.
• Make sure that the socket is secured to the tool.
• Do not use common extension pieces or step-up/step-down adapters. HYTORC can develop customized accessories to ensure safe and simple operation. Contact your local HYTORC representative for more information.
2.3 Safety symbols on the tool
The tool has no warning labels. Warning labels can only be applied on locations where they will become damaged or illegible immediately.

2.4 Qualified personnel
The term ‘qualified personnel’ refers to persons who thoroughly understand the equipment and its safe installation, operation and maintenance. Qualified personnel are physically capable of performing the required tasks, familiar with all relevant safety instructions and regulations and trained to safely install, operate and maintain the equipment. It is the responsibility of the company operating the equipment to see that the personnel meet these requirements.

2.5 Liability
HYTORC cannot be held responsible for injury or damage that results from unintended use of the equipment. The equipment is designed and intended only for the purpose described in the relevant documents. Uses not described in the relevant documents are considered unintended uses and can result in injury or damage.

Unintended uses include:
• Using equipment that is not approved by HYTORC
• Using equipment that is inappropriate or incompatible with the HYTORC equipment
• Altering or modifying equipment in any way
• Allowing unqualified personnel to perform tasks on or with the equipment
3 Description

3.1 Intended use
The jGun pneumatic socket wrench is a tool used for both your torque and tension applications. Different reaction arms and sockets can be used with the tool. HYTORC pneumatic tools have a repeatable accuracy of ± 5%. The air consumption is up to 1,500 l/min.

3.2 Overview

3.3 Filter regulator lubricator (FRL)
The FRL collects water and oil from the air supply to prevent contamination of the tool. The pressure range of the FRL is 1 bar - 7 bar.
1. Air pressure regulator
2. Air lubrication knob
3. Switch of oil filter reservoir
4. Oil filter reservoir
5. Water filter reservoir
6. Compressed air inlet
3.4 Pneumatic socket wrench

1 Hose connection
2 Air exhaust
3 Trigger switch
4 Square drive for socket connection
5 Spline for connection of reaction arm
6 Tighten/loosen switch

3.5 Accessories

3.5.1 Safety lever

The safety lever makes sure that the tool is always used with both hands and therefore reduces the risk of injury. When you pull the trigger switch, one hand must push the safety lever to keep hands away from moving parts and the bolt or nut.
Procedure
1. Push and hold the safety lever.
2. Pull the trigger switch.

3.5.2 Low-noise muffler

The low-noise muffler decreases the sound emission of the tool to 80 dB.

Caution:
- HYTORC recommends to calibrate the tool after:
  - the modification of the tool.
  - the replacement of the low-noise muffler.

The low-noise muffler has an effect on the torque output.
- Replace the low-noise muffler when it is discolored, clogged or after every five hours of operation.

Procedure
1. Remove the low-noise muffler (A) from the bottom plate (B).
2. Install the new low-noise muffler (A).

When you must replace the low-noise muffler, refer to the table below to select and order the correct part number.
### 3.5.3 Silencer system

**Caution:**
- Do not modify the silencer system in any way.
- Only use a single silencer system hose with a maximum length of 4 m (13 ft.).

The silencer system reduces the sound emission to approximately 75 dB. The silencer system has two parts:
- the exhaust silencer (A)
- the silencer system hose (B)

**Procedure**

1. Connect the silencer system hose (B) to the FRL and the tool.

### 3.5.4 BoltSafe load tester

The BoltSafe load tester has a reading system and one or more sensors. The BoltSafe load tester helps to find the correct tool setting for the used bolt. The sensors are shaped and used as a regular washer. Different BoltSafe read-out systems are available for continuous and periodic measurement.
Procedure

1. Place the BoltSafe load tester between the nut and mounting surface.
4 Installation

4.1 Pneumatic hoses

The working pressure of the pneumatic hoses is up to 6.2 bar. The safety factor of the pneumatic hoses is factor 4.

4.1.1 Pneumatic hose connections

Use a single pneumatic hose with a maximum length of 4 m (13 ft.) to connect the FRL to the tool.

Caution:

- Do not modify the pneumatic hoses in any way. If you modify the pneumatic hoses, damage to the equipment can occur.

Quick safety couplings (JGUN-FRL-JA0034FHB)

- To tighten the couplings, make sure that the system is depressurized. Pull back the pull-back ring on the female coupling (B), push the male coupling (A) into the female coupling (B) and release the pull-back ring.
- To loosen the couplings, make sure that the system is depressurized. Pull back the pull-back ring on the female coupling (B), pull the male coupling (A) from the female coupling (B) and release the pull-back ring.

4.1.2 Connecting the pneumatic hoses

Warning:

- Make sure that the system is depressurized.
- Make sure that the pneumatic hose is securely connected to both the FRL and the tool. Make sure that there is no clearance between the couplings. If the pneumatic hose becomes loose, no air or lubrication oil will flow through the hoses and the tool will not operate.
Procedure

1. If the hose couplings are dirty, clean them with a lint-free cloth.
2. Fully tighten the couplings.
3. Manually tighten the hose couplings. Do not use pliers.

4.1.3 Disconnecting the pneumatic hoses

Warning:
- Make sure that the system is depressurized.

Procedure

1. Disconnect the pneumatic hose from the FRL and the tool.
2. Disconnect the supply hose from the air supply and the FRL.
3. Roll up the pneumatic hoses and connect the hose couplings to prevent them from becoming soiled.

4.2 Connecting the air supply

Warning:
- When you operate the tool in areas with explosion hazard, use nitrogen instead of air. Contact your local HYTORC representative for more information.
Procedure

1. Connect the air supply to the compressed air inlet (F). Use an air hose with an internal diameter larger than 3/4". HYTORC recommends to use an air hose with an internal diameter of 1".

Note:
- The air supply pressure must be between 6.2 bar (90 psi) and 10 bar (145 psi) at a maximum air consumption of 1,500 l/min.
5 Reaction arms

The reaction arms can be used together with hydraulic tools, pneumatic tools and electric tools.

There are different types of reaction arms to operate the tool.

5.1 Standard reaction arm (360°)

The length of the reaction arm is fixed. One standard heavy-duty socket must be used together with the reaction arm.

Procedure

1. Place the socket over the nut as far as possible.
2. Place the reaction arm as shown.
3. Place the tool as shown.

5.2 Standard reaction arm (360° x 360°)

The length of the reaction arm is fixed. The height of the reaction arm is adjustable. One standard heavy-duty socket must be used together with the reaction arm.

Note:

The best reaction point is immediately above the flange surface. When the reaction point is higher we recommend to limit the torque output to the percentages as shown.

Reacting higher creates unwanted bending forces in the boltshaft and the bolting tool. Avoid these bending forces to improve torque- and boltload accuracy, and to improve durability of the tool and socket driver (especially for allen hex sockets).
Procedure

1. Place the socket over the nut as far as possible.
2. Place the reaction arm as shown.
3. Adjust the reaction arm as close to the flange surface as possible.
4. Place the tool as shown.

5.3 Straight TPF reaction arm

The length of the reaction arm is adjustable. Two standard heavy-duty sockets must be used together with the reaction arm.

Procedure

1. Place the sockets over the nuts as far as possible.
2. Place the reaction arm as shown.
3. For the lowest reaction force, choose a reaction point as far away as possible.
4. Make sure that the reaction socket used is placed over the reaction point completely.
5. Place the tool as shown.
6. For more convenience, place the safety handle as shown.
5.4 Straight WTCT reaction arm with reaction cup

The length of the reaction arm is adjustable. One standard heavy-duty socket must be used together with the reaction arm.

Procedure

1. Place the socket over the nut as far as possible.
2. Place the reaction arm as shown.
3. For the lowest reaction force, choose a reaction point as far away as possible.
4. Make sure that the reaction pin cup is placed over the reaction point completely.
5. Place the tool as shown.
6. For more convenience, place the safety handle as shown.

5.5 Curved WTCT reaction arm with reaction pin cup

The length of the reaction arm is adjustable. One standard heavy-duty hex socket must be used together with the reaction arm.

Procedure

1. Place the male hex socket in the bolt head as far as possible.
2. Place the reaction arm as shown.
3. For the lowest reaction force, choose a reaction point as far away as possible.
4. Make sure that the reaction pin cup is placed into the bolt head completely.
5. Place the tool as shown.
6. For more convenience, place the safety handle as shown.
5.6 Curved reaction arm with dual-end reaction cup

The length of the reaction arm is fixed.

Procedure

1. Place the socket over the nut as far as possible.
2. Place the reaction arm as shown.
3. Make sure that the reaction cups are placed over the reaction points completely.
4. Place the tool as shown.

5.7 Reaction arm for recessed installation

5.7.1 Fixed length

The length of the reaction arm is fixed. One standard heavy-duty socket must be used together with the reaction arm.
Procedure

1. Place the socket over the nut as far as possible.
2. Place the reaction arm as shown.
3. Place the tool as shown.

5.7.2 Adjustable length

The length of the reaction arm is adjustable. One standard heavy-duty socket must be used together with the reaction arm.

Procedure

1. Loosen the lock nut.
2. Place the socket over the nut as far as possible.
3. Tighten the lock nut.
4. Place the reaction arm as shown.
5. Place the tool as shown.

5.8 Straight dual-tool interconnect reaction arm

The length of the reaction arm is adjustable. Two standard heavy-duty sockets must be used together with the reaction arm.
Procedure

1. For the lowest reaction force, choose a reaction point as far away as possible.
2. Place the reaction arm as shown.
3. Place the sockets over the nuts as far as possible.
4. Place the tools as shown.

5.9 U-shaped dual-tool interconnect reaction arm

The length of the reaction arm is adjustable. Two standard heavy-duty sockets must be used together with the reaction arm.

Procedure

1. For the lowest reaction force, choose a reaction point as far away as possible.
2. Place the reaction arm as shown.
3. Place the sockets over the nuts as far as possible.
4. Place the tools as shown.

5.10 Multi-tool interconnect reaction arm

Multiple standard heavy-duty sockets must be used together with the reaction arm.
Procedure

1. Place the sockets over the nuts as far as possible.
2. Place the reaction arm as shown.
3. Place the tools as shown.

5.11 Reaction ring

Multiple standard heavy-duty sockets must be used together with the reaction arm.

Procedure

1. Place the sockets over the nuts as far as possible.
2. Place the reaction arm as shown.
3. Place the tools as shown.
5.12 **Reaction strip (recessed bolt heads)**

**Procedure**

1. Place the drive into the nut as far as possible.
2. Place the reaction arm as shown.
3. Place the tool as shown.

5.13 **HYTORC Washer™ double-drive socket**

**Procedure**

1. Place the HYTORC Washer™ under the regular nut.
2. Place the double-drive socket with the tool over the nut and reaction washer completely.

5.14 **HYTORC LoadDISC™ double-drive socket**

The HYTORC LoadDISC™ double-drive socket allows for inverted hands-free operation.
5.15 HYTORC Nut™ drive

The HYTORC Nut™ drive allows for 100% torsion-free axial bolt loading and converts the torque wrench into a mechanical tensioner.

Procedure

1. Replace the regular nut with the HYTORC Nut™.
5.16 **Offset-link**

Procedure

1. Place the offset-link over the nut.
2. Place the reaction arm as shown.
3. Place the tool as shown.

![Diagram of offset-link and reaction arms](image-url)
6 Securing the sockets and reaction arms

Sockets and reaction arms must be secured to prevent injuries and damage to the equipment.

There are different types of heavy-duty sockets to use with the tool:

1. 6-point sockets / 12-point sockets (regular / high)
2. 6-point hex sockets / 12-point hex sockets (regular / high)
3. Eccentric sockets
4. Customized sockets

The heavy-duty sockets are available in the sizes 1/2", 3/4", 1", 1 1/2", 2 1/2" and 3 1/2".

Warning:
- Do not use sockets that are used on impact wrenches.

6.1 Securing the socket (type 1)

Procedure

1. Slide the securing pin (B) into the socket (A) as shown.
2. Fit the rubber ring (C) to the socket (A) as shown.
6.2  Securing the sockets (type 2)

Procedure

1. Fit the securing clip (B) to the socket (A) as shown.

6.3  Securing the reaction arm onto the spline shaft

Procedure

1. Slide the reaction arm (A) over the drive shaft (B) as shown. Make sure that the hex bolt (C) aligns with the hole (D).
2. Tighten the hex bolt (C) using a hex key.
7 Operation

7.1 Inspections before use

Make sure that:

- the air supply is correct.
- the air supply is fully unrolled and not kinked, twisted or damaged.
- all couplings and other connections are tight and not damaged or deformed.
- the pneumatic hoses are securely connected and not kinked, twisted or damaged.
- all moving parts of the tool are clean and sufficiently lubricated with a high-quality lubricating oil (Shell Tellus S2 VX 32).
- the oil level in the oil filter reservoir is between the minimum mark and the maximum mark.
- the air lubrication knob is set to four drops per 60-90 seconds.
- the reaction arm is placed against a solid reaction point and secured to the tool.
- the socket has the correct size and is secured to the tool.
- all securing clips, securing pins and securing screws are fitted and secured to the air supply, FRL, the pneumatic hoses, the tool, the reaction arm and the socket.
- all water, if present, is drained from the filter reservoir.
- the pressure gauge does not leak. Signs of leakage are a decrease in the level of glycerin in the pressure gauge or the pressure gauge filled with lubrication oil.

7.2 Determining the gearbox mode (Dual Speed and Nut Runner)

The tool has a gearbox with two modes that are shown by a sticker:

- Rundown Mode: Select this mode to run a nut into the position for final torqueing.
- Torque Mode: Select this mode for final torqueing.

Procedure

1. To select Rundown Mode, set the gearbox switch (F) to the RUNDOWN position.
   a) Push and turn the gearbox switch (F) counterclockwise towards the square drive (D). The blue line is shown.
   b) When the gearbox switch (F) does not engage, pull the trigger switch (A) briefly.

2. To select Torque Mode, set the gearbox switch (F) to the TORQUE position.
   a) Pull and turn the gearbox switch (F) clockwise away from the square drive (D). The red line is shown.
   b) When the gearbox switch (F) does not engage, pull the trigger switch (A) briefly.
7.3 Torque

7.3.1 Pressure/torque chart

The maximum operating pressure for all HYTORC FRLs is 6.2 bar (90 psi).

Warning:
- Make sure that the maximum operating pressure of the FRL is not higher than the maximum permitted pressure of 6.2 bar (90 psi).

Each HYTORC torque wrench has its own pressure/torque chart. The pressure/torque chart is separately supplied with your HYTORC torque wrench. Refer to the pressure/torque chart to find the required torque (Nm / ft.lb.) and read the required pressure (bar / psi).

Example (Single Speed 1)

<table>
<thead>
<tr>
<th>Pressure</th>
<th>Torque</th>
</tr>
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<tr>
<td>bar</td>
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<td>85</td>
</tr>
<tr>
<td>6.2</td>
<td>90</td>
</tr>
</tbody>
</table>

7.3.2 Setting the torque

Warning:
- Always set the pressure from low pressure to high pressure.

Procedure

1. Turn the air pressure regulator (A) counterclockwise to set the pressure as low as possible.
2. Put the tool on the ground or on another safe location.
3. Start the air supply.
4. Turn the air pressure regulator (A) until the pressure gauge shows the correct pressure.

Note: Wait 15 seconds to let the pressure gauge adjust itself fully.
7.4  Direction of rotation

7.4.1  Determining the direction of rotation

Caution:
- When you use fasteners with a left handed thread, the directions of LOOSE and TIGHTEN are the opposite.

Procedure

1. To tighten a bolted connection, place the tool onto the bolt as shown.
2. To loosen a bolted connection, place the tool onto the bolt as shown.

7.4.2  Changing the direction of rotation

Procedure

1. To tighten a bolted connection, set the loosen/tighten switch (A) to "T".
2. To loosen a bolted connection, set the loosen/tighten switch (A) to "L".

7.5  Tightening and loosening a bolted flange connection

Warning:
- When you use a hex socket, do not use more than the specified torque.
- Place the tool with the socket on the nut or the bolt. Make sure that the socket is placed over the nut or the bolt as far as possible. Obey the safety instructions for sockets.
• Place the reaction arm against a solid reaction point that can handle the load. Obey the safety instructions for reaction arms.
• Make sure that the tool is free of the reaction point and other obstructions.
• Start the system momentarily. If the tool tends to creep or stand askew, stop immediately and adjust the reaction arm to a more solid and secure position.

7.5.1 Tightening a bolted flange connection

Procedure

1. Set the torque.
2. Make sure that the direction of rotation is set correctly.
3. Place the tool onto the nut or the bolt head correctly.
4. Pull and hold the trigger switch (A) until the socket no longer turns.
5. Release the trigger switch (A).

7.5.2 Loosening a bolted flange connection

Caution:
• Always set the pressure as low as possible to loosen the nut or bolt.
• If you must constantly use a high torque to loosen the nut or the bolt, use a heavier HYTORC tool. Contact your local HYTORC representative for more information.

Procedure

1. Make sure that the direction of rotation is set correctly.
2. Place the tool onto the nut or the bolt correctly.
3. Pull and hold the trigger switch (A). Hold the switch until you can loosen the nut or the bolt by hand.
4. Release the trigger switch (A).
8 Maintenance

8.1 Preventive maintenance
- Clean the filter of the FRL at least 3 times a year or more often if the FRL is used daily or in a dirty environment.
- Make sure that the tool are free of dirt and dust.
- Clean dirty hose couplings. Replace defective hose couplings.

8.2 Maintenance by HYTORC
- Have the tool disassembled, cleaned, inspected and lubricated at least once a year.
- When the tool is dirty because of sand or another abrasive, have the tool fully disassembled, cleaned, inspected and lubricated immediately.
- Have the pressure gauge calibrated and refilled with glycerin at least once a year.

8.3 Filling the oil filter reservoir

Procedure
1. Move and hold the switch of the oil filter reservoir (C) downwards.
2. Hold and turn the oil filter reservoir (D) 40° to the left or to the right.
3. Remove the oil filter reservoir (D) and release the switch of the oil filter reservoir (C).
4. Fill the oil filter reservoir (D) halfway with oil (Shell Tellus S2 VX 32).
5. Move and hold the switch of the oil filter reservoir (C) downwards.
6. Install the oil filter reservoir (D) and release the switch of the oil filter reservoir (C).
7. Hold and turn the oil filter reservoir (D) towards the front of the FRL until you hear a click.
8. Start the air supply.
9. While you operate the tool, set the air lubrication knob (B) to four drops per 60-90 seconds.

8.4 Draining the water filter reservoir manually

There are two drain types for the water filter reservoir:
- Automatic: When you do not pull the trigger switch during operation, the water filter reservoir is drained automatically.
- Manual: The water filter reservoir must drained manually.
Procedure

1. Hold the drain of the water filter reservoir between two fingers.
2. Push and hold the drain button (A) until the water filter reservoir is empty.
# Troubleshooting

<table>
<thead>
<tr>
<th>Problem</th>
<th>Possible cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>The tool does not move.</td>
<td>The tool is not correctly lubricated.</td>
<td>Make sure that the air lubricator is adjusted to four drops per 60-90 seconds.</td>
</tr>
<tr>
<td></td>
<td>The air supply is moist.</td>
<td>Make sure that the air supply is dry.</td>
</tr>
<tr>
<td></td>
<td>The air motor is defective.</td>
<td>Contact your local HYTORC representative.</td>
</tr>
<tr>
<td></td>
<td>The gearbox is defective.</td>
<td>Contact your local HYTORC representative.</td>
</tr>
<tr>
<td>The tool leaks externally.</td>
<td>There is too much lubrication oil in the tool.</td>
<td>Make sure that the air lubricator is adjusted to four drops per 60-90 seconds.</td>
</tr>
<tr>
<td>The tool moves slower than usual.</td>
<td>Air leaks from the tool.</td>
<td>Contact your local HYTORC representative.</td>
</tr>
<tr>
<td></td>
<td>The air motor is worn.</td>
<td>Contact your local HYTORC representative.</td>
</tr>
<tr>
<td></td>
<td>The tool is not correctly lubricated.</td>
<td>Make sure that the air lubricator is adjusted to four drops per 60-90 seconds.</td>
</tr>
<tr>
<td></td>
<td>Gearbox maintenance is necessary.</td>
<td>Contact your local HYTORC representative.</td>
</tr>
<tr>
<td></td>
<td>The air pressure is too low.</td>
<td>Make sure that the air supply pressure is between 6.2 bar (90 psi) and 10 bar (145 psi) at a maximum air consumption of 1,500 l/min.</td>
</tr>
<tr>
<td></td>
<td>The diameter of the air hose is smaller than 3/4&quot;.</td>
<td>Use an air hose with an internal diameter larger than 3/4&quot;.</td>
</tr>
<tr>
<td></td>
<td>The FRL filter is clogged.</td>
<td>Contact your local HYTORC representative.</td>
</tr>
<tr>
<td></td>
<td>The low-noise muffler is clogged.</td>
<td>Contact your local HYTORC representative.</td>
</tr>
<tr>
<td></td>
<td>The tool is out of calibration.</td>
<td>Contact your local HYTORC representative.</td>
</tr>
<tr>
<td>The tool moves while the trigger switch is not pulled.</td>
<td>The control valve is dirty.</td>
<td>Contact your local HYTORC representative.</td>
</tr>
<tr>
<td></td>
<td>The control valve is worn.</td>
<td>Contact your local HYTORC representative.</td>
</tr>
<tr>
<td>The trigger switch does not move.</td>
<td>The trigger switch is dirty.</td>
<td>Contact your local HYTORC representative.</td>
</tr>
<tr>
<td>The screws of the gearbox housing are loose.</td>
<td>The screws are not correctly tightened.</td>
<td>Tighten the screws correctly.</td>
</tr>
</tbody>
</table>
10.1 Single Speed

10.1.1 jGun J-.25

<table>
<thead>
<tr>
<th>Drive</th>
<th>3/4&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radius (R)</td>
<td>31.8 mm</td>
</tr>
<tr>
<td>Length (L)</td>
<td>181.6 mm</td>
</tr>
<tr>
<td>Height (H)</td>
<td>179.3 mm</td>
</tr>
<tr>
<td>Width (W)</td>
<td>69.1 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>3.3 kg</td>
</tr>
<tr>
<td>Minimum torque</td>
<td>68 Nm</td>
</tr>
<tr>
<td>Maximum torque</td>
<td>338 Nm</td>
</tr>
<tr>
<td>Rpm</td>
<td>65</td>
</tr>
</tbody>
</table>

10.1.2 jGun J-.5

<table>
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<tr>
<th>Drive</th>
<th>3/4&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radius (R)</td>
<td>31.8 mm</td>
</tr>
<tr>
<td>Length (L)</td>
<td>204.9 mm</td>
</tr>
<tr>
<td>Height (H)</td>
<td>185.9 mm</td>
</tr>
<tr>
<td>Width (W)</td>
<td>69.6 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>3.3 kg</td>
</tr>
<tr>
<td>Minimum torque</td>
<td>183 Nm</td>
</tr>
<tr>
<td>Maximum torque</td>
<td>678 Nm</td>
</tr>
<tr>
<td>Rpm</td>
<td>24</td>
</tr>
</tbody>
</table>
### 10.1.3 jGun J-1

<table>
<thead>
<tr>
<th>Drive</th>
<th>3/4&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radius (R)</td>
<td>31.8 mm</td>
</tr>
<tr>
<td>Length (L)</td>
<td>224.0 mm</td>
</tr>
<tr>
<td>Height (H)</td>
<td>179.3 mm</td>
</tr>
<tr>
<td>Width (W)</td>
<td>69.1 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>4.0 kg</td>
</tr>
<tr>
<td>Minimum torque</td>
<td>407 Nm</td>
</tr>
<tr>
<td>Maximum torque</td>
<td>1,627 Nm</td>
</tr>
<tr>
<td>Rpm</td>
<td>6.5</td>
</tr>
</tbody>
</table>

### 10.1.4 jGun J-2

<table>
<thead>
<tr>
<th>Drive</th>
<th>1&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radius (R)</td>
<td>33.2 mm</td>
</tr>
<tr>
<td>Length (L)</td>
<td>265.7 mm</td>
</tr>
<tr>
<td>Height (H)</td>
<td>201.7 mm</td>
</tr>
<tr>
<td>Width (W)</td>
<td>89.7 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>6.6 kg</td>
</tr>
<tr>
<td>Minimum torque</td>
<td>712 Nm</td>
</tr>
<tr>
<td>Maximum torque</td>
<td>2,847 Nm</td>
</tr>
<tr>
<td>Rpm</td>
<td>5.5</td>
</tr>
</tbody>
</table>

### 10.1.5 jGun J-3

<table>
<thead>
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<th>Drive</th>
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</thead>
<tbody>
<tr>
<td>Radius (R)</td>
<td>33.2 mm</td>
</tr>
<tr>
<td>Length (L)</td>
<td>282.2 mm</td>
</tr>
<tr>
<td>Height (H)</td>
<td>201.7 mm</td>
</tr>
<tr>
<td>Width (W)</td>
<td>89.7 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>8.5 kg</td>
</tr>
<tr>
<td>Minimum torque</td>
<td>1,119 Nm</td>
</tr>
<tr>
<td>Maximum torque</td>
<td>4,102 Nm</td>
</tr>
<tr>
<td>Rpm</td>
<td>4.5</td>
</tr>
</tbody>
</table>

### 10.1.6 jGun J-5

<table>
<thead>
<tr>
<th>Drive</th>
<th>1 1/2&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radius (R)</td>
<td>38.1 mm</td>
</tr>
<tr>
<td>Length (L)</td>
<td>322.1 mm</td>
</tr>
<tr>
<td>Height (H)</td>
<td>204.0 mm</td>
</tr>
<tr>
<td>Width (W)</td>
<td>80.0 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>9.7 kg</td>
</tr>
<tr>
<td>Minimum torque</td>
<td>1,560 Nm</td>
</tr>
<tr>
<td>Maximum torque</td>
<td>6,847 Nm</td>
</tr>
<tr>
<td>Rpm</td>
<td>2.5</td>
</tr>
</tbody>
</table>
### 10.1.7  jGun J-8

<table>
<thead>
<tr>
<th>Drive</th>
<th>1 1/2&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radius (R)</td>
<td>38.1 mm</td>
</tr>
<tr>
<td>Length (L)</td>
<td>353.1 mm</td>
</tr>
<tr>
<td>Height (H)</td>
<td>214.9 mm</td>
</tr>
<tr>
<td>Width (W)</td>
<td>107.4 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>13.75 kg</td>
</tr>
<tr>
<td>Minimum torque</td>
<td>2,475 Nm</td>
</tr>
<tr>
<td>Maximum torque</td>
<td>10,711 Nm</td>
</tr>
<tr>
<td>Rpm</td>
<td>1.5</td>
</tr>
</tbody>
</table>

### 10.2  Dual Speed

![Diagram of jGun J-8](image)

### 10.2.1  jGun DSP-.5

<table>
<thead>
<tr>
<th>Drive</th>
<th>3/4&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radius (R)</td>
<td>31.8 mm</td>
</tr>
<tr>
<td>Length (L)</td>
<td>254.7 mm</td>
</tr>
<tr>
<td>Height (H)</td>
<td>188.0 mm</td>
</tr>
<tr>
<td>Width (W)</td>
<td>75.9 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>4.1 kg</td>
</tr>
<tr>
<td>Minimum torque</td>
<td>109 Nm</td>
</tr>
<tr>
<td>Maximum torque</td>
<td>521 Nm</td>
</tr>
<tr>
<td>Rundown rpm</td>
<td>420</td>
</tr>
<tr>
<td>Final torque rpm</td>
<td>24</td>
</tr>
</tbody>
</table>
### 10.2.2 jGun DSP-1

<table>
<thead>
<tr>
<th>Drive</th>
<th>3/4&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radius (R)</td>
<td>31.8 mm</td>
</tr>
<tr>
<td>Length (L)</td>
<td>273.3 mm</td>
</tr>
<tr>
<td>Height (H)</td>
<td>226.6 mm</td>
</tr>
<tr>
<td>Width (W)</td>
<td>75.9 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>4.4 kg</td>
</tr>
<tr>
<td>Minimum torque</td>
<td>428 Nm</td>
</tr>
<tr>
<td>Maximum torque</td>
<td>1,660 Nm</td>
</tr>
<tr>
<td>Rundown rpm</td>
<td>120</td>
</tr>
<tr>
<td>Final torque rpm</td>
<td>6.5</td>
</tr>
</tbody>
</table>

### 10.2.3 jGun DSP-2

<table>
<thead>
<tr>
<th>Drive</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Radius (R)</td>
<td>31.8 mm</td>
</tr>
<tr>
<td>Length (L)</td>
<td>318.0 mm</td>
</tr>
<tr>
<td>Height (H)</td>
<td>214.0 mm</td>
</tr>
<tr>
<td>Width (W)</td>
<td>113.8 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>6.8 kg</td>
</tr>
<tr>
<td>Minimum torque</td>
<td>678 Nm</td>
</tr>
<tr>
<td>Maximum torque</td>
<td>2,780 Nm</td>
</tr>
<tr>
<td>Rundown rpm</td>
<td>90</td>
</tr>
<tr>
<td>Final torque rpm</td>
<td>5</td>
</tr>
</tbody>
</table>

### 10.2.4 jGun DSP-3

<table>
<thead>
<tr>
<th>Drive</th>
<th>1&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radius (R)</td>
<td>46.0 mm</td>
</tr>
<tr>
<td>Length (L)</td>
<td>316.9 mm</td>
</tr>
<tr>
<td>Height (H)</td>
<td>186.0 mm</td>
</tr>
<tr>
<td>Width (W)</td>
<td>81.0 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>5.4 kg</td>
</tr>
<tr>
<td>Minimum torque</td>
<td>1,065 Nm</td>
</tr>
<tr>
<td>Maximum torque</td>
<td>4,406 Nm</td>
</tr>
<tr>
<td>Rundown rpm</td>
<td>35</td>
</tr>
<tr>
<td>Final torque rpm</td>
<td>2</td>
</tr>
</tbody>
</table>

### 10.2.5 jGun DSP-5

<table>
<thead>
<tr>
<th>Drive</th>
<th>1 1/2&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radius (R)</td>
<td>55.1 mm</td>
</tr>
<tr>
<td>Length (L)</td>
<td>372.1 mm</td>
</tr>
<tr>
<td>Height (H)</td>
<td>213.9 mm</td>
</tr>
<tr>
<td>Width (W)</td>
<td>113.8 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>10.2 kg</td>
</tr>
<tr>
<td>Minimum torque</td>
<td>1,593 Nm</td>
</tr>
</tbody>
</table>
### Technical data

<table>
<thead>
<tr>
<th>Maximum torque</th>
<th>7,050 Nm</th>
<th>5,200 ft.lbs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rundown rpm</td>
<td>38</td>
<td></td>
</tr>
<tr>
<td>Final torque rpm</td>
<td>2.5</td>
<td></td>
</tr>
</tbody>
</table>

#### 10.2.6 jGun DSP-8

<table>
<thead>
<tr>
<th>Drive</th>
<th>1 1/2&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radius (R)</td>
<td>62.0 mm</td>
</tr>
<tr>
<td>Length (L)</td>
<td>390.6 mm</td>
</tr>
<tr>
<td>Height (H)</td>
<td>214.9 mm</td>
</tr>
<tr>
<td>Width (W)</td>
<td>115.8 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>13.4 kg</td>
</tr>
<tr>
<td>Minimum torque</td>
<td>2,170 Nm</td>
</tr>
<tr>
<td>Maximum torque</td>
<td>11,253 Nm</td>
</tr>
<tr>
<td>Rundown rpm</td>
<td>35</td>
</tr>
<tr>
<td>Final torque rpm</td>
<td>1.5</td>
</tr>
</tbody>
</table>

#### 10.3 Nut Runner

#### 10.3.1 jGun J-A1-AP-WG

<table>
<thead>
<tr>
<th>Drive</th>
<th>3/4&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radius (R)</td>
<td>38.1 mm</td>
</tr>
<tr>
<td>Length (L)</td>
<td>284.7 mm</td>
</tr>
<tr>
<td>Height (H)</td>
<td>195.0 mm</td>
</tr>
<tr>
<td>Width (W)</td>
<td>86.9 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>5.4 kg</td>
</tr>
<tr>
<td>Minimum torque</td>
<td>346 Nm</td>
</tr>
</tbody>
</table>
### 10.3.2 jGun A1-Z

<table>
<thead>
<tr>
<th>Drive</th>
<th>3/4&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radius (R)</td>
<td>50.0 mm</td>
</tr>
<tr>
<td>Length (L)</td>
<td>303.0 mm</td>
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<tr>
<td>Height (H)</td>
<td>241.0 mm</td>
</tr>
<tr>
<td>Width (W)</td>
<td>84.0 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>6.9 kg</td>
</tr>
<tr>
<td>Minimum torque</td>
<td>407 Nm</td>
</tr>
<tr>
<td>Maximum torque</td>
<td>1627 Nm</td>
</tr>
<tr>
<td>Rundown rpm</td>
<td>4000</td>
</tr>
<tr>
<td>Final torque rpm</td>
<td>7</td>
</tr>
</tbody>
</table>

### 10.4 Physical conditions

- **Ambient temperature**: 0 - 45 °C (0 - 113 °F)
- **Relative humidity**: 30% - 95%, non-condensing
- **Maximum altitude**: 1,000 m (3,200 ft) above sea level
- **Lighting**: normal ambient lighting

**Note**: The tool is not suitable for use in explosive environments.

### 10.5 Maximum torque values (male hex sockets)

<table>
<thead>
<tr>
<th>Hex size (mm)</th>
<th>Hex size (inch)</th>
<th>Normal</th>
<th>Break</th>
</tr>
</thead>
<tbody>
<tr>
<td>14</td>
<td>1/2</td>
<td>476</td>
<td>517</td>
</tr>
<tr>
<td>17</td>
<td>5/8</td>
<td>932</td>
<td>1,020</td>
</tr>
<tr>
<td>19</td>
<td>3/4</td>
<td>1,612</td>
<td>1,768</td>
</tr>
<tr>
<td>22</td>
<td></td>
<td>2,500</td>
<td>2,775</td>
</tr>
<tr>
<td>24</td>
<td>7/8</td>
<td>2,557</td>
<td>2,808</td>
</tr>
<tr>
<td>27</td>
<td>1</td>
<td>3,822</td>
<td>4,216</td>
</tr>
<tr>
<td></td>
<td>1 1/8</td>
<td>5,440</td>
<td>5,984</td>
</tr>
<tr>
<td>32</td>
<td>1 1/4</td>
<td>7,480</td>
<td>8,296</td>
</tr>
<tr>
<td>36</td>
<td>1 3/8</td>
<td>9,928</td>
<td>10,880</td>
</tr>
<tr>
<td></td>
<td>1 1/2</td>
<td>12,920</td>
<td>14,144</td>
</tr>
<tr>
<td>41</td>
<td>1 5/8</td>
<td>16,320</td>
<td>17,952</td>
</tr>
</tbody>
</table>
## Technical data

**Maximum torque (Nm)**

<table>
<thead>
<tr>
<th>Hex size (mm)</th>
<th>Hex size (inch)</th>
<th>Normal</th>
<th>Break</th>
</tr>
</thead>
<tbody>
<tr>
<td>46</td>
<td>1 3/4</td>
<td>20,400</td>
<td>22,440</td>
</tr>
<tr>
<td></td>
<td>1 7/8</td>
<td>25,160</td>
<td>27,608</td>
</tr>
<tr>
<td>50</td>
<td></td>
<td>30,600</td>
<td>33,592</td>
</tr>
<tr>
<td>55</td>
<td></td>
<td>43,520</td>
<td>47,736</td>
</tr>
</tbody>
</table>

**Maximum torque (ft.lbs.)**

<table>
<thead>
<tr>
<th>Hex size (mm)</th>
<th>Hex size (inch)</th>
<th>Normal</th>
<th>Break</th>
</tr>
</thead>
<tbody>
<tr>
<td>14</td>
<td>1/2</td>
<td>351</td>
<td>382</td>
</tr>
<tr>
<td>17</td>
<td>5/8</td>
<td>688</td>
<td>753</td>
</tr>
<tr>
<td>19</td>
<td>3/4</td>
<td>1,190</td>
<td>1,305</td>
</tr>
<tr>
<td>22</td>
<td></td>
<td>1,845</td>
<td>2,048</td>
</tr>
<tr>
<td></td>
<td>7/8</td>
<td>1,887</td>
<td>2,072</td>
</tr>
<tr>
<td>24</td>
<td></td>
<td>2,177</td>
<td>2,657</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>2,821</td>
<td>3,111</td>
</tr>
<tr>
<td>27</td>
<td>1 1/8</td>
<td>2,952</td>
<td>3,542</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4,015</td>
<td>4,416</td>
</tr>
<tr>
<td>32</td>
<td>1 1/4</td>
<td>5,520</td>
<td>6,122</td>
</tr>
<tr>
<td>36</td>
<td>1 3/8</td>
<td>7,327</td>
<td>8,029</td>
</tr>
<tr>
<td></td>
<td>1 1/2</td>
<td>9,535</td>
<td>10,438</td>
</tr>
<tr>
<td>41</td>
<td>1 5/8</td>
<td>12,044</td>
<td>13,249</td>
</tr>
<tr>
<td>46</td>
<td>1 3/4</td>
<td>15,055</td>
<td>16,561</td>
</tr>
<tr>
<td></td>
<td>1 7/8</td>
<td>18,568</td>
<td>20,375</td>
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<td>50</td>
<td></td>
<td>22,583</td>
<td>24,791</td>
</tr>
<tr>
<td>55</td>
<td></td>
<td>32,118</td>
<td>35,229</td>
</tr>
</tbody>
</table>

1 ft.lbs. = 1.356 Nm  
1 Nm = 0.738 ft.lbs.

**Note:** If the area of the hex drive is smaller than the square drive, HYTORC will disclaim any liability for broken hex drives or hex sockets. These male hex sockets are excluded from warranty claims:

- 1/2” x 17 mm (11/16”) and smaller
- 3/4” x 22 mm (7/8”) and smaller
- 1” x 27 mm (1 1/8”) and smaller
- 1 1/2” x 46 mm (1 5/6”) and smaller
- 2 1/2” x 70 mm (2 1/2”) and smaller

Extra shear forces and bending forces caused by an imperfect reaction level and/or a short reaction distance will lower the specified torque values in the table.

- Male hex socket
Declaration of Conformity

(according to Annex II.1.A of the Machinery Directive)

We,

HYTORC BV
Platinawerf 8, 6641 TL Beuningen
The Netherlands

declare under our own responsibility:

We are the manufacturer of the jGun pneumatic socket wrench with optional accessories.

The jGun pneumatic socket wrench with optional accessories is in conformity with the provisions of the following directives:
- 2006/42/EC (Machine Directive)
- 98/23/EC (Pressure Equipment Directive)

The following harmonized standards have been applied:
- EN ISO 12100-1:2011
- EN ISO 12100-2:2011
- EN ISO 14121-1:2007
- EN ISO 11148-6:2012
- EN ISO 4414:2010
- EN 61310-2:2008
- EN 61310-3:2008
- ISO 3744:2011

Place: Beuningen (Netherlands)
Date: January 05, 2016

Name: HYTORC
CEO: M. van Kortenhof