Air-driven Universal Power Tool System for
Traumatology, Endoprosthetics, and Spine

Compact Air Drive II

Instructions for Use

DePuy Synthes
PART OF THE Johnson&Johnson FAMILY OF COMPANIES

Contents

General Information

Intended use
The Compact Air Drive II is an air-driven power tool for use in traumatology, endoprosthetics and spinal column surgery.

Safety Instructions
The surgeon has to evaluate if the machine is suitable for an application, based on power limitation of the machine, attachment and cutting tool regarding bone strength/ anatomical situation as well as handling of the machine, attachment and cutting tool regarding bone size. In addition, the contraindications of the implant have to be respected. Please refer to the corresponding "Surgical Techniques" of the implant system used.

The Compact Air Drive II System is only to be used for patient treatment after careful consultation of the instructions for use. It is recommended that an alternative system is available to use during application, as technical problems can never be completely ruled out.

The Compact Air Drive II System is designed for use by physicians and trained medical personnel.

DO NOT use any apparently damaged components.

DO NOT use any component if the packaging is damaged.

To ensure correct operation of the tool, use only Synthes original accessories.

Recommended operating pressure: 6–7 bar (max 10 bar).

Only use original Synthes hoses for compressed air.

Before the first and every use and prior returning for service, power tools and their accessories/attachments have to run through the complete reprocessing procedure. Protective covers and foils must be fully removed before sterilization.

The user of the product is responsible for proper use of the equipment during surgery.

Check correct operation of the tools before using it on the patient.

For the tool to function properly, Synthes recommends that it is cleaned and serviced after each use in accordance with the process defined in the "Care and Maintenance" section. Compliance with these specifications can considerably extend the service life of the tool and reduce the risk of malfunction or harm to the user and patient. Only use Synthes Special Oil (519.970) to lubricate the tool.

We recommend using new Synthes cutting tools for every surgical procedure. Efficiently working cutting tools are the basis for successful surgery. Therefore, check used cutting tools after every use for wear and/or damage and replace them if necessary. Cutting tools must be cooled with irrigation fluid to prevent heat necrosis.

Unusual Transmissible Pathogens
Surgical patients identified as at-risk for Creutzfeldt-Jakob disease (CJD) and related infections should be treated with single-use instruments. Dispose of instruments used or suspected of use on a patient with CJD after surgery and/or follow current national recommendations.

Servicing
This system requires regular maintenance service, at least once a year, in order to maintain its functionality. This service has to be performed by the original manufacturer or an authorized site.
The manufacturer assumes no responsibility for damage resulting from improper operation, neglected or unauthorized maintenance of the tool.

Precautions:

- **Always wear personal protective equipment (PPE) including safety goggles when handling the Compact Air Drive II system.**
- **DO NOT use this equipment in presence of oxygen, nitrous oxide or a mixture consisting of flammable anesthetic and air (danger of explosion). Only use compressed air or nitrogen for this equipment.**
- **To avoid injuries, the locking mechanism of the tool has to be activated before every manipulation and before placing the tool back down, i.e the softmode switch has to be turned in the "OFF" position.**
- **Should the machine drop on the floor and have visible defects, do not use it anymore and send it to the Synthes service center.**
- **If a product drops on the floor, fragments may split off. This represents a danger for the patient and user as:**
  - **These fragments may be sharp.**
  - **Unsterile fragments may enter the sterile field or hit the patient.**
- **Should the system have corroded parts, do not use it anymore and send it to the Synthes service center.**

Accessories/Scope of delivery

The main components in the Compact Air Drive II System are the handpiece, the air hose and attachments and accessories. An overview of all components belonging to the Compact Air Drive System can be found in the chapter "Ordering Information".

The following components are essential to ensure proper operation:

- 1 Compact Air Drive II Handpiece (511.701)
- 1 Air Hose (see chapter "Ordering Information")
- At least one attachment belonging to the system and cutting tool fitting to the attachment

For an optimal function of the system only Synthes Cutting Tools shall be used.

For care and maintenance special tools are available, such as cleaning brush (519.400) and Synthes Synthes Special Oil (519.970). Only Synthes oil may be used. Lubricants of other compositions can cause jamming, can have a toxic effect or can have a negative impact on the sterilization results. Only lubricate the power tool and the attachments after the cleaning procedure.

Locating of the instrument or fragments of instruments

Synthes instruments are designed and manufactured to perform within the scope of their intended use. However, if a Power Tool or accessory/attachment breaks during use, a visual inspection or a medical imagine device (e.g. CT, Radiation Devices, etc.) can aid in locating the fragments and/or components of the instrument.

Storage and transport

Only use the original packaging for dispatch and transport as otherwise damage may occur. If the packing material is no longer available, please contact your local Synthes office.

For storage and transport environmental conditions please refer to the section "System specification".

Warranty/Liability

The warranty for the tools and accessories does not cover damage of any kind resulting from wear, improper use, improper reprocessing and maintenance, damaged seal, use of non Synthes cutting tools and lubricants or improper storage and transport.

The manufacturer excludes liability for damage resulting from improper use, neglected or unauthorized maintenance or servicing of the tool.

For further information on the warranty please contact your local Synthes office.

Explanation of symbols used

The following symbols are applied to the device or individual components. Information on additional symbols is given in the relevant sections of this document.

Caution
Read the provided Instructions for Use before operating the device.

Do not reuse
Products intended for single use must not be reused.

Reuse or reprocessing (e.g. cleaning and resterilization) may compromise the structural integrity of the device and/or lead to device failure, which may result in patient injury, illness or death. Furthermore, reuse or reprocessing of single use devices may create a risk of contamination e.g. due to the transmission of infectious material from one patient to another. This could result in the injury or death of the patient or user.

Synthes does not recommend reprocessing contaminated products. Any Synthes product that has been contaminated by blood, tissue and/or bodily fluids/matter should never be used again and should be handled according to hospital protocol. Even though they may appear undamaged, the products may have small defects and internal stress patterns that may cause material fatigue.

This symbol indicates that the corresponding device may not be immersed in liquids.

The marked device shall only be used within a specified temperature range.

CE
0123

The device meets the requirements of directive 93/42/EEC for medical devices. It is authorized by an independent notified body for which it bears the CE symbol.

Locked symbol. Drive Unit is off for safety.

Manufacturer

Date of manufacture

non sterile Non sterile

Relative humidity

Atmospheric pressure

Do not use if package is damaged.

Handpiece

Operation
❶ Attachment coupling
❷ Unlocking button for attachment coupling
❸ Speed regulation
❹ Reverse running selection
❺ Softmode switch with safety function
❻ Hose coupling

Forward/reverse running
Use the bottom trigger ❸ to gradually adjust the forward speed up to 900 rpm.

Simultaneously pull the top trigger ❹ to immediately switch to reverse mode.

Safety system
The Compact Air Drive II has a safety system that prevents the drive from being accidentally started.

To lock the unit, turn the softmode switch ❺ fully clockwise to the "OFF" position. To unlock it, turn the softmode switch ❺ counterclockwise to the desired power level.

Adjusting the maximum power
The maximum power can be adjusted gradually by turning the softmode switch ❺ to the appropriate marking on the handpiece.

Precaution: **The unit must be locked with the softmode switch when mounting and removing attachments and tools and before you stop working with it.**

Startup of the Compact Air Drive II system

Connecting the compressed air hose to the handpiece
Shove the female hose coupling onto the male hose coupling until it locks into place. The coupling will lock by itself with an audible click.

Attach the other end of the air hose to the compressed air or nitrogen source. Ensure that the coupling geometry of the air hose is compatible with the geometry of the wall coupling.
If the operating room does not have an exhaust air system then use the Air Diffusor (519.950) to diffuse the air. The Air Diffusor is connected between the source and the air hose.

Removing the compressed air hose
Disconnect the hose by pulling back the hose coupling sleeve.

Remove the air hose from the compressed air or nitrogen source.

Precautions:
- **The air hose has to be connected properly and should never be squeezed or obstructed by any loads. Non-respect might lead to bursting of the outer hose!**
- **Always check correct functioning before use on patient.**
- **Always have a back-up system to prevent problems in case of deficient system.**
- **Always wear personal protective equipment (PPE) including safety goggles when working with the Compact air Drive II system.**

Attachments

Please observe the safety instructions and warnings on the relevant pages when working with attachments.

Mounting the attachments
Insert the desired attachment into the attachment coupling of the handpiece until it engages. Do not press the release button for the attachment coupling when mounting the attachments.

Ensure that the attachment is correctly held in the attachment coupling by pulling on it slightly.

Removing the attachments
Pressing the unlocking button releases the attachment from the attachment coupling and shifts it slightly forward. Then remove the attachment.

Precautions:

- **To prevent injury, the tool must be locked with the safety system (see page 5) during each manipulation.**
- **Make sure not to press the triggers (especially the top trigger) when mounting and removing the attachments.**
- **When mounting and removing attachments, do not simultaneously pull on the attachment while pressing the unlocking button. This can make it difficult to remove the attachment.**
- **Only use original attachments and tools from Synthes. Damage that might arise from using attachments and tools of other manufacturers is not covered by the warranty.**
- **During reaming procedure, high torque values must be provided by the power tool to the reaming head to allow efficient bone removal. In cases where the reaming head suddenly is blocked, these high torque values can be transferred onto the user's hand, wrist and/or the patient's body. In order to prevent injuries it therefore is essential that:**
  - **The power tool is held in an ergonomical position with a firm grip.**
  - **If the reamer head blocks, the speed trigger is released immediately.**
  - **The correct function of the speed trigger (immediate stop of the system when the trigger is released) is checked before the reaming process.**

AO/ASIF Quick Coupling (511.750)

Attaching cutting tools:
Slide forward the ring on the attachment, and fully insert the tool while rotating it slightly.

After the tool has been fully inserted, release the ring. Pull on the tool to make sure that it is correctly locked in the coupling.

Removing cutting tools:
First slide the ring on the attachment forward, and then remove the tool.

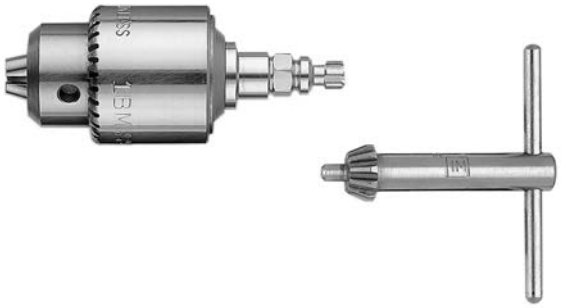
Quick Coupling for DHS/DCS Triple Reamers (511.761)

Attaching cutting tools:
First slide the coupling sleeve on the attachment to the rear in the direction of the arrow, and then insert the tool.

After the tool has been fully inserted, release the coupling sleeve. Pull on the tool to make sure that it is correctly locked in the coupling.

Removing cutting tools:
First slide the coupling sleeve on the attachment to the rear in the direction of the arrow, and then remove the tool.

Drill Chuck with key (511.730)



Attaching cutting tools:
Open the jaws of the chuck with the provided key (510.191) or by hand by turning the two moveable parts against each other to the right (clockwise).

Insert the shaft of the tool into the open chuck.

Close the Drill Chuck by rotating the moveable parts against each other to the left. Make sure that the shaft remains in the middle between the three jaws of the chuck. To tighten the chuck, turn the key (510.191) to the right (clockwise). The teeth of the key must be correctly seated in the toothed rim of the chuck.

Removing cutting tools:
Open the chuck by turning the key (510.191) to the left, and remove the tool.

Drill Chuck, keyless (511.731)

Attaching cutting tools:
Open the jaws by rotating the ring counter-clockwise. Insert the tool shaft into the open chuck, and close the jaws. Make sure that the shaft remains in the middle between the clamps of the chuck.

Removing cutting tools:
Open the chuck jaws by turning the ring counter-clockwise, and remove the tool.

Quick Coupling for Kirschner Wires (511.791)

Inserting the Kirschner Wire:
Completely open the adjusting sleeve at the end of the attachment, insert the Kirschner Wire, and close the adjusting sleeve until it clamps the wire. Then open the adjusting sleeve three clicks. The Kirschner Wire is automatically lightly held in the selected position. If the wire is clamped, open the adjusting sleeve until it is released.

Clamping the Kirschner Wire and inserting it in the bone:
To clamp the Kirschner Wire, pull the tension lever against the handle of the unit. The Kirschner Wire remains clamped as long as the lever is held.

Simultaneously press the forward trigger to drill the wire into the bone. Hold the tension lever until the Kirschner Wire is inserted. To grasp the wire at a different place, release the lever, move the tool with the attachment along the Kirschner Wire to the desired length, and pull the lever against the handle.

Removing the Kirschner Wire from the bone:
To remove the Kirschner Wire from the bone, grip it with the tension lever and pull it out of the bone while pressing both triggers for reverse.

Attachment for Acetabular and Medullary Reaming, with reverse option (511.786)

Mounting the attachment:
To enable reverse running, the attachment must be coupled onto the drive unit in such a way that the marked arrow on the attachment lies on the top.

Attaching cutting tools:
Insert the tool into the opening of the Attachment for Acetabular and Medullary Reaming, and press both parts together until they lock.

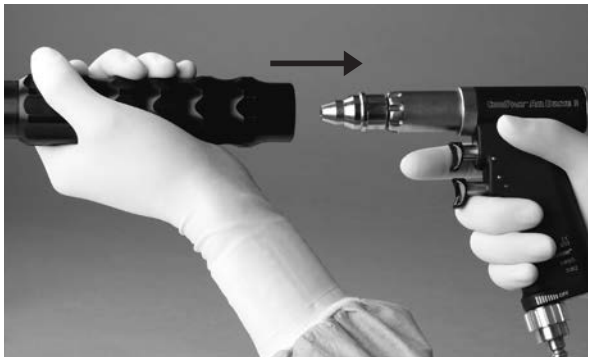
Removing cutting tools:
First pull back the movable ring on the attachment, and then remove the tool.

Radiolucent Drive (511.300)
The Radiolucent Drive can be used with the Compact Air Drive II in combination with the AO/ASIF Quick Coupling (511.750).

Maximum speed: approx 1100 rpm
Maximum torque: approx. 1.3 Nm

Technical data is subject to tolerances.

Assemble Radiolucent Drive:
Mount the quick AO/ASIF Quick Coupling (511.750) on the CADII handpiece.



Slide the Radiolucent Drive over the quick coupling and twist until the drive shaft engages.

Rotate the Radiolucent Drive into the desired working position. Support the drive with your free hand.

Disassemble Radiolucent Drive:
Pull the Radiolucent Drive off the AO/ASIF Quick Coupling. Press the unlocking button and remove the attachment.

Note:

- **Grip the coupled Radiolucent Drive tightly when switching on the power tool, particularly if the power tool is held face down.**
- **Only special 3-flute spiral drill bits can be used. Your Synthes representative will provide you with additional information on which drill bits can be used.**
- **Handle the Radiolucent Drive with great care. Do not allow contact between the drill bit and the medullary nail.**
- **Depending on the setting of the image intensifier, a zone may appear in the rear of the Radiolucent Drive that is not radiolucent. However, this does not inhibit aiming and working with the device.**
- **To protect the gears, the Radiolucent Drive is equipped with a slip clutch that disengages in case of an overload and emits an audible rattling.**
- **The following procedures can cause an overload:**
  - **Correcting the drilling angle when the cutting edges of the drill bit are completely in the bone.**
  - **Hitting the nail with the drill bit.**
- **Drilling can continue after making the following corrections: Correcting the drilling angle:**
  - **Remove the drill bit until the flutes are visible, and restart drilling.**
  - **Hitting a nail: Remove the drill bit until the flutes are visible, and re-aim the drill bit or exchange the drill bit if necessary.**
- **Check the drill bits for wear and/or damage after each use, and replace if necessary. Synthes recommends that cutting tools are only used once for patient safety.**

Insert drill bits

1. Pull the ring on the Radiolucent Drive forward and push the drill bit into the coupling as far as it can go while rotating it slightly (Fig. 1).
2. Engage the ring on the attachment back to fix the drill bit.

Check if the drill bit is seated correctly by gently pulling on it.

Remove drill bits

To remove the drill bit execute step 1 and 2 above in reverse order.

Using the Radiolucent Drive

Before positioning the Radiolucent Drive, align the image intensifier until the distal locking hole of the medullary nail is round and easily visible (Fig. 2).

After the incision, position the Radiolucent Drive and center the drill bit tip over the locking hole. On the monitor of the image intensifier, you can see both the drill bit and the target rings of the drive.

Swing the drive up and center it precisely so that the drill bit appears as a round point and the locking hole is visible around it. The target rings also assist centering. The locking hole can now be drilled directly (Figs. 3 and 4).

For further information on the Radiolucent Drive and on the special 3-flute spiral drill bits please consult the relevant Instructions for Use (036.000.150) or your local Synthes office.

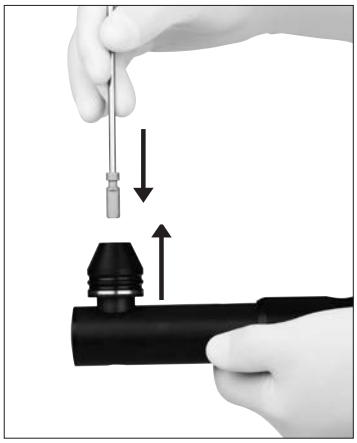


Figure 1

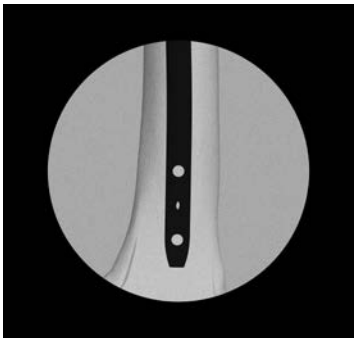


Figure 2

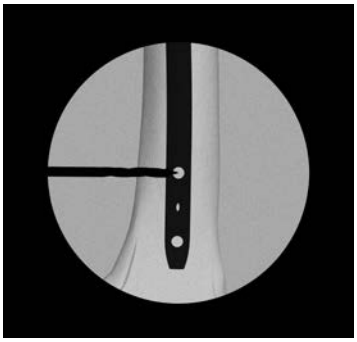


Figure 3

Figure 4

Oscillating Drill Attachment (511.200)
The Oscillating Drill Attachment (511.200) can be used on the Compact Air Drive II together with the AO/ASIF Quick Coupling (511.750).

Mounting the attachment:
Slide the Oscillating Drill Attachment from the front over the quick coupling (511.750) up to the stop (Fig. 1). Rotate the handpiece and Oscillating Drill Attachment in relation to each other until the attachment locks onto the top trigger (Fig. 2). This simultaneously keeps you from unintentionally activating reverse.

Removal:
Follow the same procedure in reverse.

Fig. 1

Inserting the drill bit:
First shove the sleeve on the front part of the Oscillating Drill Attachment forward, and then completely insert the drill bit under slight rotation.

Let the sleeve slide back, and check that the drill bit is properly locked by pulling on it.

Removal:
Follow the same procedure in reverse.

Fig. 2

Recommendation: **It is best to use a three-flute drill bit in the Oscillating Drill Attachment. It is easier to drill into an angled surface with such bits.**

Oscillating Saw Attachment (511.800)

Mounting the attachment:
Shove the attachment onto the tool. There is a noticeable resistance. The attachment then clicks into place to show that the coupling was successful. Once the attachment is mounted, reverse is automatically blocked.

The attachment can be locked in eight different positions. When the attachment needs to be rotated after it is coupled, it must first be uncoupled, and the attachment is pulled approx. 1 cm forward. Adjust the desired angle (45° increments), and shove the attachment back toward the tool until it locks into place.

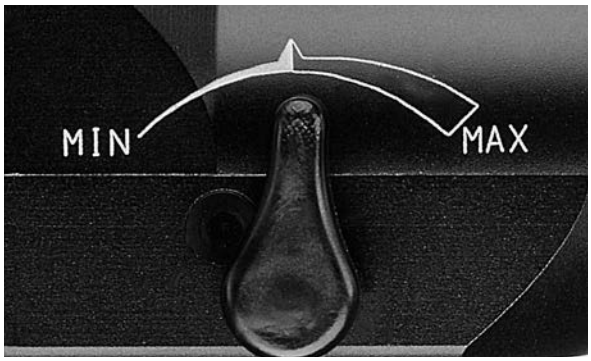
Removal:
Follow the same procedure in reverse.

Precautions:
- **Do not simultaneously pull the saw attachment forward while pressing the release button.**
- **When removing the saw attachment, keep the vent hole free on the bottom of the coupling shaft.**
- **When mounting and removing the attachment, do not press the top trigger. This can damage the power tool.**
- **After inserting a cutting tool, always check that it is properly engaged by pulling it.**

Changing saw blades:
1. Loosen the screw by about four turns with the key (518.090).
2. Remove the saw blade by first pressing the saw blade against the screw head, and then pull it out in a forward direction.
3. Insert the new saw blade by exerting a slight pressure against the screw head and then adjusting it to the position required. The saw blades can be locked in different positions.
4. Retighten the screw with the key (518.090).

Adjusting the amplitude:
The deflection of the saw blade can be changed with the Oscillating Saw Attachment (511.800). This is frequently necessary when doing precision work and when very long saw blades are used. Vibration can be minimized, and the sawing performance can be optimized. It does not matter if the deflection is set before you start or while you are working.

To adjust the deflection, turn the adjuster lever to the desired deflection. "Min" corresponds to a deflection of 2.5°, "Max" to 5°, and the neutral position equals 4° of deflection. Maximum sawing power is obtained in the center position.



Oscillating Saw Attachment II (511.801)
Mount and remove the attachment in the same manner as Oscillating Saw Attachment 511.800.

Changing saw blades:
1. Open the saw blade quick coupling by rotating the fixation knob counter-clockwise.
2. Remove the saw blade by first pressing the saw blade against the screw head, and then pull it out in a forward direction.
3. Insert the new saw blade by exerting a slight pressure against the screw head and then adjusting it to the position required. The saw blades can be locked in different positions.
4. Lock the saw blade coupling by tightening the fixation knob clockwise. Make sure that the fixation knob is firmly tightened. Otherwise the screw can loosen during use causing the saw blade to vibrate.

Reciprocating Saw Attachment (511.902)

Mounting the attachment:
The attachment can be locked in eight different positions (offset in 45° steps). Shove the Reciprocating Saw Attachment onto the tool in the desired position. There is a noticeable resistance. The attachment then clicks into place and shows that the coupling was successful. Reverse is now blocked.

To change the position, first release the coupling mechanism with the release button, then use your other hand to shove the attachment approx. 1 cm forward, rotate it into the desired position, and shove it back until it locks on the tool.

Removal:
Release the coupling mechanism with the release button, and then use your other hand to remove the attachment from the machine.

Precautions:
- **Do not simultaneously pull the saw attachment forward while pressing the release button.**
- **When removing the saw attachment, keep the vent hole free on the bottom of the coupling shaft.**
- **When coupling and releasing the attachment, do not press the top trigger. This can damage the power tool.**

Changing saw blades:
Turn the lock knob in the direction of the arrow until the saw blade jumps forward approx. 1 mm. Remove the saw blade from the coupling (the slot of the lock knob and saw blade coupling are in the same axis). Insert the new saw blade in the guide slot of the saw blade coupling until the lock knob springs back into locked position with a click (the slot of the lock knob and saw blade coupling are axially offset).

Check if the saw blade is seated tightly by pulling in a lengthwise direction.

Top for Sternum for Reciprocating Saw Attachment (511.904)

Mounting the attachment:
Use the Top for Sternum together with the Reciprocating Saw Attachment (511.902). The Top for Sternum can be placed on the Reciprocating Saw Attachment and tightened with the provided Allen wrench. Make sure that it is seated well.

Removal:
Follow the same procedure in reverse.

Changing saw blades:
Follow the same procedure as for Reciprocating Saw Attachment (511.902). Note that only Reciprocating Saw Blade (511.915) may be used since its length is adapted to the length of the Top for Sternum.

Precaution: **Only use the Saw Blade 511.915 for the Top for Sternum Attachment. The length of this saw blade is adapted to the Top for Sternum Attachment.**

Working with saw attachments
The tool must be operating when the attachment makes contact with the bone. Do not exert excessive pressure on the saw since it slows down sawing because the saw teeth catch in the bone.

The best sawing performance is achieved by moving the tool slightly back and forth in the plane of the saw blade so that the blade can go a bit beyond the bone on both sides. Very precise cuts can be made when the saw blade is guided steadily. Imprecise cuts arise due to used blades, excess pressure, or jamming the saw blade.

Instructions for handling saw blades
Synthes recommends using a new blade for each operation to ensure that the saw blade is optimally sharp and clean. The following risks are associated with used blades:
- Necrosis caused by excessive heat build-up
- Infection caused by residue
- Extended cutting time from poor sawing performance

Precaution: **Saw blades labeled "Single Use" should not be used repeatedly because of cleaning problems.**

Torque Limiter 1.5 Nm (511.770)
and Torque Limiter 4.0 Nm (511.771)

Mounting and removing a screwdriver shaft:
Insert the screwdriver shaft while rotating it slightly until it locks into place. To remove it, pull back the unlocking ring, and pull out the screwdriver shaft.

Using the Torque Limiter:
Pick up a screw from the corresponding locked plating system with the screwdriver shaft, and insert it in the desired plate hole. To insert the screw, start the power tool slowly, increase the speed and then reduce it again before the screw is fully tightened. The torque is automatically limited to 1.5 or 4.0 Nm. When this limit is reached, you will hear a distinct clicking. Stop the tool immediately, and pull the tool away from the screw.

Follow the surgical technique of the respective locked plating system.

Attention: The Torque Limiter must be annually serviced and recalibrated by Synthes. Note the information on the test certificate in the packaging. The user is responsible for following the calibration schedule.
If proper maintenance is not provided the device is potentially out of calibration respectively the torque limit could not be within the declared range of limit.

Angular Drive Unit for Medullary Reaming (510.200)

Mounting the attachments:
Use the Angular Drive Unit for Medullary Reaming together with the Attachment for Acetabular and Medullary Reaming (511.786). Before mounting the drive, loose the locking screw by turning it counter-clockwise. Then shove the drive up to the stop over the Attachment for Acetabular and Medullary Reaming that is coupled to the Compact Air Drive II. Rotate the drive unit to achieve the optimum grip, and lock it in place by tightening the locking screw clockwise.

Removing attachments:
Follow the same procedure in reverse.

Attaching and removing cutting tools:
Use the same procedure as with the Attachment for Acetabular and Medullary Reaming (511.786).

Adapters for using tools by other manufacturers

511.782	Hudson Adapter	
511.783	Trinkle Adapter, modified (Zimmer adapter)	
511.784	Trinkle Adapter	
511.787	Küntscher Adapter	
511.788	Harris Adapter	

Mounting the adapters:
Use the adapters together with the Attachment for Acetabular and Medullary Reaming (511.786).

Insert the adapter into the opening of the Attachment for Acetabular and Medullary Reaming (511.786), and press both parts together until they lock.

Removal:
First pull back the movable ring on the attachment, and then remove the adapter.

Attaching cutting tools:
First move the coupling sleeve on the adapter toward the rear, and then completely insert the tool.

After the tool has been fully inserted, release the coupling sleeve. Check that the tool is properly locked in the adapter by gently pulling on it.

Removing cutting tools:
First shove the coupling sleeve on the adapter toward the rear, and then remove the tool.

General Information

Power tool units and attachments are frequently exposed to high mechanical loads and shocks during use and should not be expected to last indefinitely. Proper handling and maintenance help extend the useful life of surgical instruments.

Gentle care and maintenance with proper lubrication can substantially increase the reliability and life of the system components and reduce the risk of malfunction or harm to the user and patient.

Synthes power tools must be serviced and inspected annually by the original manufacturer or an authorized site. Yearly maintenance will ensure that the equipment maintains the highest standard of performance and will prolong the life of the system. The manufacturer assumes no warranty for damages arising from improper use, neglected or unauthorized servicing of the tool.

For more information about Care and Maintenance, please refer to the Compact Air Drive II Care and Maintenance Poster (038.000.017).

Precautions

- **Reprocessing must be performed immediately after each use.**
- **Cannulations, unlocking sleeves and other narrow sites require special attention during cleaning.**
- **Cleaners with pH 7– 9.5 are recommended. The use of cleaners with higher pH values can – depending on the cleaner – cause the dissolution of the surface of aluminum and its alloys, plastics or compound materials and they should only be used considering the data regarding material compatibility according to its data sheet. At pH values higher than 11, the surfaces of stainless steel can also be affected. For detailed information about material compatibility, see "Material Compatibility of Synthes Instruments in Clinical Processing" at http://emea.depuysynthes.com/hcp/reprocessing-care-maintenance. Concerning the clinical reprocessing of the Compact Air Drive II system please refer to the following section of this document.**
- **Follow the enzymatic cleaner or detergent manufacturer's instructions for use for the correct dilution concentration, temperature, exposure time and water quality. If the temperature and time are not specified, follow Synthes recommendations. Devices should be cleaned in a fresh, newly-made solution.**
- **Detergents used on the products will be in contact with the following materials: stainless steel, aluminum, plastic and rubber seals.**
- **Never immerse the handpiece or attachments in aqueous solutions or in an ultrasonic bath. Do not use pressurized water as this will cause damage to the system.**
- **Synthes recommends using new sterile cutting tools for each operation. Refer to "Clinical Processing of Cutting Tools" (036.000.499) for detailed clinical processing instructions.**

Unusual Transmissible Pathogens

Surgical patients identified as at risk for Creutzfeldt-Jakob disease (CJD) and related infections should be treated with single-use instruments. Dispose of the instruments used or suspected of use on a patient with CJD after surgery and/or follow the current national recommendations.

Notes:

- **The clinical processing instructions provided have been validated by Synthes for preparing a non-sterile Synthes medical device; these instructions are provided in accordance with ISO 17664 and ANSI/AAMI ST81.**
- **Consult the national regulations and guidelines for additional information. In addition, compliance with internal hospital policies and the procedures and recommendations of manufacturers of detergents, disinfectants and any clinical processing equipment is additionally required.**
- **Cleaning Agent Information: Synthes used the following cleaning agents during validation of these reprocessing recommendations. These cleaning agents are not listed in preference to other available cleaning agents which may perform satisfactorily – neutral pH enzymatic detergents (e.g. Steris Prolystica 2X Concentrate Enzymatic Cleaner).**
- **It remains the responsibility of the processor to ensure that the processing performed achieves the desired result using the appropriate properly installed, maintained and validated equipment, materials and personnel in the processing unit. Any deviation by the processor from the instructions provided should be properly evaluated for effectiveness and potential adverse consequences.**

Preparation Prior to Cleaning

In the operating room
Remove surface soiling with a disposable lint-free cloth. Reprocess an instrument directly after it is used so that blood does not dry on it.

Preparation for cleaning
- Reprocessing must be carried out immediately after each use.
- Before cleaning and disinfection, all attachments and instruments must be removed from the machine.
- Never immerse the handpiece or attachments in aqueous solutions or in an ultrasonic bath. Do not use pressurized water as this will cause damage to the system.
- Make sure that no cleaning solution enters the machine's air inlet.
- Do not use pointed objects for cleaning.
- When cleaning the unit, do not insert objects into the inlet and outlet holes for the air connector since this would damage the microfilter.

Handpieces and attachments and air hoses may be processed using
- manual cleaning or
- automated cleaning with manual pre-cleaning

Preparation for manual cleaning and automated cleaning with manual pre-cleaning:

Article number	Procedure
Compact Air Drive II handpiece 511.701	Put the seal nipple (519.596) on the machine's air inlet.
Synthes Double Air Hoses 519.510 519.530 519.550	Seal the Synthes Double Air Hose by joining the inlet and outlet.
Dräger Double Air Hoses 519.610 519.630 519.650	Connect both sides of the Dräger Double Air Hose with the seal nipple (519.596)
BOC/Schrader Double Air Hoses 519.511 519.531	Connect both sides of the BOC/ Schrader Air Hose with the seal nipple (519.591 or 519.592).

Note: **Before connecting the air inlet of the handpiece and both sides of the air hose with the seal nipple, make sure that the surfaces, which the Seal Nipple will cover, are not contaminated. If they are, first wipe off or spray these surfaces with alcohol based disinfectant and then put the seal nipple on. Make sure that no solution enters the hose.**

Precaution: **Clean all movable parts in opened or unlocked position.**

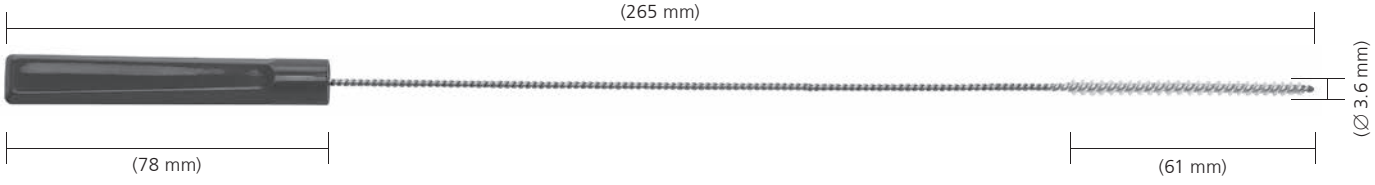
Manual Cleaning Instruction

1. **Remove debris**
   Rinse device under running cold tap water for a minimum of 2 minutes. Make sure that no liquids enter the air inlet. Plug the air inlet of the drive unit with the seal nipple (519.596).
   Use a sponge, soft lint-free cloth and/or softbristled brush to assist in the removal of gross soil and debris. Clean all cannulations (handpieces and attachments) with the cleaning brush (519.400).

Precaution:

- **Never immerse the handpiece or attachments in aqueous solutions or in an ultrasonic bath. Do not use pressurized water as this will cause damage to the system.**
- **Do not use pointed objects for cleaning.**
- **Brushes and other cleaning tools shall be either single-use items or, if reusable, be decontaminated at least daily using a solution as detailed in section "3. Spray and wipe".**
- **Brushes shall be inspected before daily use and discarded if they have degraded to the point where they may scratch instrument surfaces or be ineffective due to worn or missing bristles.**
- **Make sure that no cleaning solution enters the machine's air inlet.**
- **Do not use pressurized water as this will cause damage to the system.**

2. **Manipulate moving parts**
   Manipulate all moving parts such as the triggers, sliding sleeves, attachment release rings, saw blade coupling, locking knob for the saw blade quick coupling and switches under running cold tap water to loosen and remove gross debris.



Cleaning brush (519.400)

3. **Spray and wipe**
   Spray and wipe device using a neutral pH enzymatic solution or foam spray for a minimum of 2 minutes. Follow the enzymatic cleaner or detergent manufacturer's instructions for use for correct temperature, water quality (i.e. pH, hardness) and concentrations/ dilution.

4. **Rinse with tap water**
   Rinse device with cold tap water for a minimum of 2 minutes. Use a syringe or pipette to flush lumens and channels.

5. **Clean with detergent**
   Clean device manually under running water using an enzymatic cleaner or detergent for a minimum of 5 minutes. Manipulate all moving parts under running water. Use a softbristled brush and/or soft lint-free cloth to remove all visible soil and debris. Follow the enzymatic cleaner or detergent manufacturer's instructions for use for correct temperature, water quality and concentrations/dilution.

6. **Rinse with tap water**
   Rinse device thoroughly using running hot water for a minimum of 2 minutes. Use a syringe, pipette or water jet to flush lumens and channels. Actuate joints, handles and other movable device feature in order to rinse thoroughly under running water.

7. **Wipe / Spray disinfection**
   Wipe off or spray the surfaces of the devices with alcohol based disinfectant.

8. **Visually inspect device**
   Inspect the cannulations, coupling sleeves, etc. for visible soil. Repeat Steps 1–7 until no visible soil remains.

9. **Final rinse with de-ionized/purified water**
   Final rinse with deionized or purified water for a minimum of 2 minutes.

10. **Dry**
    Dry device using a soft lint-free cloth or medical grade compressed air.

Automated Cleaning Instruction with Manual Pre-cleaning

Important

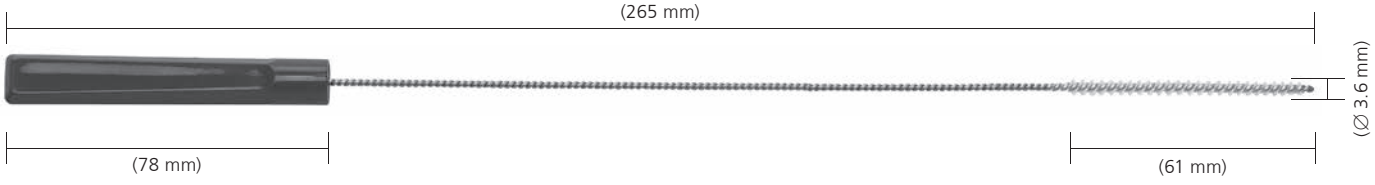
- **Manual pre-cleaning prior to mechanical/automated cleaning/disinfection is important to ensure cannulations and other difficult to access areas are clean.**
- **Alternative cleaning/disinfection procedures other than in the procedure described below (including manual precleaning) have not been validated by Synthes.**

Preparation for manual cleaning and automated cleaning with manual pre-cleaning:

Article number	Procedure
Compact Air Drive II handpiece 511.701	Put the seal nipple (519.596) on the machine's air inlet.
Synthes Double Air Hoses 519.510 519.530 519.550	Seal the Synthes Double Air Hose by joining the inlet and outlet.
Dräger Double Air Hoses 519.610 519.630 519.650	Connect both sides of the Dräger Double Air Hose with the seal nipple (519.596)
BOC/Schrader Double Air Hoses 519.511 519.531	Connect both sides of the BOC/ Schrader Air Hose with the seal nipple (519.591 or 519.592).

Note: **Before connecting the air inlet of the handpiece and both sides of the air hose with the seal nipple, make sure that the surfaces, which the Seal Nipple will cover, are not contaminated. If they are, first wipe off or spray these surfaces with alcohol based disinfectant and then put the seal nipple on. Make sure that no solution enters the hose.**

Precaution: **Clean all movable parts in opened or unlocked position.**



Cleaning brush (519.400)

1. **Remove debris**
   Rinse device under running cold tap water for a minimum of 2 minutes. Make sure that no liquids enter the air inlet. Plug the air inlet of the drive unit with the seal nipple (519.596).
   Use a sponge, soft lint-free cloth and/or softbristled brush to assist in the removal of gross soil and debris. Clean all cannulations (handpieces and attachments) with the cleaning brush (519.400).

Precaution:
- **Never immerse the handpiece or attachments in aqueous solutions or in an ultrasonic bath. Do not use pressurized water as this will cause damage to the system.**
- **Do not use pointed objects for cleaning.**
- **Brushes and other cleaning tools shall be either single-use items or, if reusable, be decontaminated at least daily using a solution as detailed in section "3. Spray and wipe".**
- **Brushes shall be inspected before daily use and discarded if they have degraded to the point where they may scratch instrument surfaces or be ineffective due to worn or missing bristles.**
- **Make sure that no cleaning solution enters the machine's air inlet.**
- **Do not use pressurized water as this will cause damage to the system.**

2. **Manipulate moving parts**
   Manipulate all moving parts such as triggers, sliding sleeves, attachment release rings, saw blade coupling, locking knob for the saw blade quick coupling and switches under running cold tap water to loosen and remove gross debris.

3. **Spray and wipe**
   Spray and wipe device using a neutral pH enzymatic solution or foam spray for a minimum of 2 minutes. Follow the enzymatic cleaner or detergent manufacturer's instructions for use for correct temperature, water quality and concentrations/dilution.

4. **Rinse with tap water**
   Rinse device with cold tap water for a minimum of 2 minutes. Use a syringe or pipette to flush lumens and channels.

5. **Clean with detergent**
   Clean device manually under running water using an enzymatic cleaner or detergent for a minimum of 5 minutes. Manipulate all moving parts under running water. Use a softbristled brush and/or soft lint-free cloth to remove all visible soil and debris. Follow the enzymatic cleaner or detergent manufacturer's instructions for use for correct temperature, water quality and concentrations/dilution.

6. **Rinse with tap water**
   Rinse device thoroughly using running hot water for a minimum of 2 minutes. Use a syringe, pipette or water jet to flush lumens and channels. Actuate joints, handles and other movable device feature in order to rinse thoroughly under running water.

7. **Visually inspect device**
   Repeat Steps 1–6 until no visible soil remains.
   Manual pre-cleaning as described above must be followed by the mechanical/automated cleaning procedure.

8. **Load washing basket**
   Plug the air inlet of the drive unit with the seal nipple (519.596).
   Seal the air hoses with the Synthes coupling by joining the inlet and outlet.
   Use sealing nipples (519.591, 519.596 or 519.592) to close air hoses that have Dräger and BOC/Schrader couplings.
   Place all articles in the washing tray in a way that an effective washing/disinfection can be performed. Ensure that the attachments are positioned in an upright position and fully opened. Ensure that the water can flow off any surface.
   Never lay the handpiece on its side as this will cause irreversible damage to it.
   Damage due to improper reprocessing is not covered by the warranty.

9. **Automated cleaning cycle parameters**

Note: **The washer/disinfector should fulfill requirements specified in ISO 15883.**

Step	Duration (minimum)	Cleaning instructions
Rinse	2 minutes	Cold tap water
Pre-wash	1 minute	Warm water (≥ 40 °C); use detergent
Cleaning	2 minutes	Warm water (≥ 45 °C); use detergent
Rinse	5 minutes	Rinse with de-ionized (DI) or purified water (PURW)
Thermal disinfection	5 minutes	Hot DI water, ≥ 90 °C
Dry	40 minutes	≥ 90 °C

10. **Inspect device**
    Remove all devices from the washing tray.
    Remove all devices from washing basket. Inspect the cannulations, coupling sleeves, etc. for visible soil. If necessary, repeat the manual pre-clean/automated cleaning cycle.

Precaution: **Mechanical cleaning is an additional stress for power equipment, especially for seals and bearings. Therefore, devices must be properly lubricated after automated cleaning. Furthermore, the device must be serviced at least once per year as specified under the section "Repairs and Technical Services".**

Maintenance and Lubrication

Prior to maintenance refer to the following procedures:

Article number	Procedure
Compact Air Drive II handpiece 511.701	Remove the seal nipple (519.596) on the machine's air inlet.
Synthes Double Air Hoses 519.510 519.530 519.550	Ensure that the inlet and outlet of the Synthes Double Air Hose are not connected.
Dräger Double Air Hoses 519.610 519.630 519.650	Remove the seal nipple (519.596) from the Dräger Double Air Hose and ensure that the inlet and outlet are not connected.
BOC/Schrader Double Air Hoses 519.511 519.531	Remove the seal nipple (519.591 or 519.592) from the BOC/Schrader Double Air Hose and ensure that the inlet and outlet are not connected.

The power tools and attachments should be regularly lubricated to ensure a long service life and smooth operation.

It is recommended that the accessible moving parts of the handpieces and attachments are lubricated with 1–2 drops of Synthes special oil (519.970) and distribute the oil by moving the components. Wipe off excess oil with a cloth.

For detailed information, please refer to the Compact Air Drive II Care and Maintenance Poster (038.000.017).

Lubricating the Power Tool

- After each use, apply around 5 drops of the Synthes special oil (oil dispenser 519.970) into the air inlet of the cleaned power tool.
- Connect the handpiece to a single hose, or to a double hose using the adapter for oiling (519.790).
- Wrap gauze or a cloth around the hose coupling to absorb the exiting oil.
- Run the handpiece for approximately 20 seconds, and change the direction of rotation several times.
- If dirty oil exits, the process must be repeated.
- Lubricate the trigger shafts and then press the triggers several times.

Note: The lubrication adapter (519.790) should only be wiped with disinfectant. It is not subject to the cleaning and sterilization process.

Lubricating the attachments
After each use, lubricate all moving parts of the attachments with 1–2 drops of Synthes special oil (519.970). Distribute the oil by moving the parts, and remove excess oil with a cloth.

Precautions:
- **Failing to lubricate the parts will lead to damage and malfunction, increasing the risk of harm to the user and patient.**
- **For further information on lubrication, please refer to the Instruction for Use of the Synthes Special Oil 519.970 (60099544) and the CADII Care and Maintenance Poster (038.000.017).**
- **To ensure a long service life and reduce repairs, the power tool and all attachments must be lubricated after each use.**
  Exception: The Radiolucent Drive (511.300) does not require lubrication.
- **The power tool and accessories may only be lubricated with Synthes special oil (519.970). The composition of the vapor-permeable and biocompatible oil is optimized for the specific requirements of the power tool. Lubricants with other compositions can cause the power tool to jam and be toxic.**
- **Only lubricate the power tool and attachments when clean.**
- **Oil should only be used on the air hose sleeve. Ensure that no oil gets into the double air hose. When lubricating, never use a double hose without the adapter for oiling (519.790) since leaking oil could otherwise damage the hose.**
- **Exception: The Radiolucent Drive (511.300) does not require lubrication.**
- **Only use the Synthes Special Oil 519.970. Their biocompatible composition matches the requirements for power tools in the operating room. Lubricants with other compositions may lead to sticking and could have a toxic effect.**

Inspection and Function Test

Visually inspect for damage and wear (e.g. unrecognizable markings, missing or removed part numbers, corrosion, etc.).

Check the handpiece controls for smooth operation and function.
All movable parts should be moving smoothly. Check that the triggers do not remain blocked in the handpiece when pressing on them. Check that no residuals prevent the movable parts from moving smoothly.

Check the coupling of the handpiece and attachments for smooth operation, and check for function together with cutting tools.

Check instruments and cuttings tools for correct adjustment and functioning prior to every use.

Do not use damaged, worn or corroded components and send it to the Synthes Service center.

Failing to follow these instructions will lead to damage and malfunction, increasing the risk of harm to the user and patient.

For further information on inspection and function test, please refer to the CADII Care and Maintenance Poster (038.000.017).

Packaging, Sterilization and Storage

Packaging
Put cleaned and dry products into their proper places in the Synthes CAD II Vario Case (689.200). Additionally, use an appropriate sterilization wrap or re-usable rigid container system for sterilization, such as a Sterile Barrier System according to ISO 11607.

Care should be taken to prevent pointed and sharp instruments from contact with other objects that may damage the surface or the Sterile Barrier System.

Sterilization

Note: Synthes Compact Air Drive II system may be re-sterilized using validated steam sterilization methods (ISO 17665 or national standards). Synthes recommendations for packed devices and cases are as follows.

Cycle type	Sterilization exposure time	Sterilization exposure time temperature	Drying time
Saturated steam-forced air removal (pre-vacuum, minimum 3 pulses)	Minimum 4 minutes	Minimum 132°C Maximum 138°C	20 – 60 minutes
	Minimum 3 minutes	Minimum 134°C Maximum 138°C	20 – 60 minutes

Dry times generally range from 20 to 60 minutes due to differences in packaging materials (Sterile Barrier System, e.g., wraps or re-usable rigid container systems), steam quality, device materials, total mass, sterilizer performance and varying cool-down time.

Precautions:
- **The following maximum values may not be exceeded: 138 °C over a maximum of 18 minutes. Higher values can damage the sterilized products.**
- **Observe the packages prior to storage for visual moisture or dampness and if found on or within the pack, the product should be repackaged and sterilized with an increased drying time.**
- **Do not accelerate the cooling process.**
- **Hot air, ethylene oxide, plasma and formaldehyde sterilization are not recommended.**
- **Ensure that the seal nipple (519.596) is removed from the machine's air inlet and that the air hose's inlet and outlet are disconnected prior to sterilization.**

Storage
Storage conditions for products labeled "STERILE" are printed on the packaging label.

Packaged and sterilized products should be stored in a dry, clean environment, protected from direct sunlight, pests, and extremes of temperature and humidity. Use products in the order in which they are received ("first-in, first-out principle"), taking note of any expiration date on the label.

Repairs and Technical Service

The power tool should be sent to the Synthes office for repair if it is faulty or malfunctions.

Contaminated products have to run through the complete reprocessing procedure before being sent to the Synthes office for repair or technical service.

To prevent damage during shipping use the original packaging to return devices back to Synthes. If the packing material is no longer available, please contact the Synthes affiliate.

This system requires regular maintenance service, at least once a year, in order to maintain its functionality. This service has to be performed by the original manufacturer or an authorized site.

Faulty devices may not be used. If it is no longer possible or feasible to repair the power tool it should be disposed of, cf. the following section "Disposal of Waste".

Other than the above-mentioned care and maintenance, no further maintenance work may be carried out independently or by third parties.

Warranty/Liability: **The manufacturer shall assume no responsibility for damage resulting from unauthorized maintenance.**

Disposal of Waste

In most cases, faulty tools can be repaired (refer to the previous section "Repairs and Technical Service") Please send tools that are no longer used to your local Synthes representative. This ensures that they are disposed of in accordance with the national application of the respective directive. The device may not be disposed of with household waste.

To prevent damage during shipping use the original packaging to return devices back to Synthes. If this is not possible, please contact the Synthes affiliate.

Precaution: **Contaminated products have to run through the complete reprocessing procedure, so that there is no danger of infection in case of disposal.**

Troubleshooting

Problem	Possible causes	Remedy
Tool does not start.	Compressed air motor is blocked from not operating for a long time	Lock the power tool. Mount quick coupling (511.750) or drill chuck (511.730) and manually turn without pulling the trigger.
Tool does not have enough power.	Operating pressure is too low.	Set operating pressure on pressure regulator to 6–7 bar.
	Microfilter is blocked.	Exchange microfilter in the central air supply.
	Air inlet is blocked.	Remove particles from the air inlet with tweezers. Do not use sharp objects for this.
	Hose is too long.	Check that the entire length of the hose does not exceed 8 m.
	Hose couplings are defective.	Check wall and power tool hose couplings for leaks.
	Central air system is blocked.	Have someone check the central air system.
	Softmode switch is blocked.	Let the tool run at maximum speed and turn the softmode switch on and off several times.
Power tool continues to operate after releasing the trigger.	The trigger is blocked by deposits of blood, etc.	Press trigger several times; clean and oil according to instructions. Use only Synthes Special Oil (Oil Dispenser 519.970).
Trigger is blocked.	Safety system is activated.	Unlock the power tool by turning and pushing the trigger according to the markings on the power tool.
Attachments cannot be coupled to the tool.	The locking pin on the attachment coupling is blocked.	Lock the power tool. Remove particles with tweezers. Do not use sharp objects for this.
	The connection geometry at the attachments is faulty.	Send attachments for repair to your Synthes representative.

Problem	Possible causes	Remedy
Despite pressing the release button, the attachments cannot be removed from the tool.	The attachment became jammed by simultaneously pressing the release button and pulling on the attachment.	Press the release button again without pulling on the attachment.
Tool is difficult to couple or cannot be coupled.	Coupling geometry of the tool has changed due to wear.	Exchange the tool, or send it to your local DePuy Synthes service center.
The Kirschner Wire is completely inside the drill and cannot be moved forward.	The Kirschner Wire was inserted from the rear.	Lock the power tool. Remove the quick coupling for the Kirschner Wires (511.791), hold the drive shaft opening facing downward, and shake the Kirschner Wire out.
Bone and tool heat up during surgery.	The cutting tool is blunt.	Replace the tool.
Oscillating saw attachment vibrates too much.	The saw blade has come loose.	Tighten the fixation knob for the saw blade quick coupling more firmly (for saw attachment 511.801), or tighten the connection with the key (for saw attachment 511.800).

If the recommended solutions do not work, send the power tool to your Synthes service center.

For further technical questions or information on our services, please contact your Synthes representative.

System Specifications

Technical data

Technical Data CAD II Handpiece (511.701)

Continuously adjustable speed	0–900 rpm
Weight	780 g
Air consumption	Approx. 250 l/min
Recommended operating pressure	6–7 bar (max. 10 bar)
Power output (mechanical)	120 W
Cannulation	∅ 3.2 mm

Environmental Conditions

	Operation	**Storage**
Temperature	10 °C 50 °F  40 °C 104 °F	10 °C 50 °F  40 °C 104 °F
Relative humidity	30 %  90 %	30 %  90 %
Atmospheric pressure	700 hPa 0.7 bar  1060 hPa 1.06 bar	700 hPa 0.7 bar  1060 hPa 1.06 bar
Altitude	0 – 3000 m	0 – 3000 m

Transportation*

Temperature	**Duration**	**Humidity**
–29 °C; –20 °F	72 h	uncontrolled
38 °C; 100 °F	72 h	85 %
60 °C; 140 °F	6 h	30 %

*products have been tested according to ISTA 2A

Precaution: The machine must not be stored or operated in explosive atmospheres.

Declaration of the emission sound pressure level and the power level according to the EU Directive 2006/42/EG Annex I

Measurements of the sound pressure level [LpA] are carried out in accordance with standard EN ISO 11202.

Measurements of the sound power level [LwA] are carried out in accordance with standard EN ISO 3746.

Handpiece	Attachment	Tool	Sound Pressure Level (LpA) in [dB(A)]	Sound Power Level (LwA) in [dB(A)]	Max. daily exposure time without hearing protection
CAD II (511.701*)	–	–	75	–	> 8 h
	Attachment for acetabular and medullary reaming, with optional reverse (511.786**)	–	73	–	> 8 h
	Oscillating Saw Attachment (511.801***)	Saw blade (519.170)	78	–	> 8 h
		Saw blade (519.210)	87	97	5 h 3 min
	Reciprocating Saw Attachment (511.902****)	Saw blade (511.905)	80	93	> 8 h
		Saw blade (511.912)	79	92	> 8 h

Operation condition:

*Handpiece 511.701 at idle speed (900 rpm) and with 6 bar
**Handpiece 511.701 with 511.786 at idle speed (340 rpm) and with 6 bar
***Handpiece 511.701 with 511.801 at idle speed (14 000 Osc./min) and with 6 bar
****Handpiece 511.701 with 511.902 at idle speed (12 000 Osc./min) and with 6 bar

Technical data is subject to tolerances.
The values are determined with Synthes saw blades.

Declaration of vibration emission according to the EU Directive 2006/42/EG Annex I

The assessment of the vibration emissions [m/s²] is to be made to the hand-arm system according to EN ISO 8662.

Handpiece	Attachment	Tool	Declaration [m/s²]	Max. daily exposure
CAD II (511.701*)	–	–	< 2.5	No limitation
	Attachment for acetabular and medullary reaming, with optional reverse (511.786**)	–	< 2.5	No limitation
	Oscillating Saw Attachment (511.801***)	Saw blade (519.170)	7.4	3 h 41 min
		Saw blade (519.210)	14.3	59 min
	Reciprocating Saw Attachment (511.902****)	Saw blade (511.905)	8.2	2 h 58 min
		Saw blade (511.912)	8.4	2 h 51 min

Operation condition:

*Handpiece 511.701 at idle speed (900 rpm) and with 6 bar
**Handpiece 511.701 with 511.786 at idle speed (340 rpm) and with 6 bar
***Handpiece 511.701 with 511.801 at idle speed (14 000 Osc./min) and with 6 bar
****Handpiece 511.701 with 511.902 at idle speed (12 000 Osc./min) and with 6 bar

Technical data is subject to tolerances.
The values are determined with Synthes saw blades.

Ordering Information

Drive units	
511.701	Compact Air Drive II

Attachments	
310.900	Drill chuck with mini quick coupling
510.200	Angular Drive Unit for Medullary Reaming
511.200	Oscillating drill attachment
511.300	Radiolucent drive
511.730	Chuck with key
511.731	Drill chuck, keyless
511.750	AO/ASIF quick coupling
511.761	Quick coupling for DHS/DCS triple reamers
511.770	Torque limiter, 1.5 Nm
511.771	Torque limiter, 4.0 Nm
511.782	Hudson adapter
511.783	Trinkle adapter, modified (Zimmer adapter)
511.784	Trinkle adapter
511.786	Attachment for acetabular and medullary reaming, with reverse option
511.787	Küntscher adapter
511.788	Harris adapter
511.791	Quick Coupling for Kirschner Wires ∅ 0.6–3.2 mm
511.800	Oscillating saw attachment, with variable deflection, with key No. 518.090
511.801	Oscillating saw attachment, with quick coupling
511.902	Reciprocating saw attachment
511.904	Top for sternum for reciprocating saw attachment

Accessories	
510.191	Spare key, for No. 511.730
518.090	Key, for fixing of saw blades
519.400	Cleaning brush
519.591	Seal nipple for BOC/Schrader double air hoses with st. steel coupling, silver
519.592	Seal nipple for BOC/Schrader double air hoses with aluminum coupling, beige
519.596	Seal nipple for Dräger double air hoses*
05.001.087	Adapter for Schrader/Synthes Coupling
05.001.088	Adapter for Dräger/Synthes Coupling
519.950	Exhaust Air Diffusor
520.500	Wall Coupling with Opposite Tubes
520.600	Wall Coupling with Parallel Tubes
519.790	Adapter for oiling
519.970	Oil dispenser with Synthes special oil
689.200	Vario Case for Compact Air Drive, without lid, without contents
689.507	Lid (stainless steel), size 1/1, for Vario Case

* Can also be used to close the air intake of compressed air-operated drive units during washing.

Air Hoses

Double Air Hoses, for Wall Coupling

	Synthes	Dräger	BOC/Schrader
Length 3 m	519.510	519.610	519.511
Length 5 m	519.530	519.630	519.531

Double Spiral Air Hoses, for Wall Coupling, working length variable up to 2 m

	Synthes	Dräger
	519.550	519.650

For further information please contact your local Synthes representative.

Cutting tools

Detailed ordering information on the saw blades for the CADII system can be found in the brochure "Saw Blades" (036.001.681).

Detailed ordering information on the special 3-flute drill bits for the Radiolucent Drive can be found in the brochure "Working with the Radiolucent Drive" (036.000.150).

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