

ComPact Air Drive II

USER'S MANUAL



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TO ORDER:

Call your SYNTHES consultant or
SYNTHES (USA) **1-800-523-0322**

or

SYNTHES Canada **1-800-668-1119**

ComPact Air Drive II Specifications

- Variable speed: 0 - 900 rpm
- Maximum torque: 4.0 Nm (35 in-lb)
- Operating pressure (with machine running): 6 bar (90 psi)
- Air consumption: 250 lpm (liters per minute)
- Weight: 780 gm (27.5 oz)
- Fully cannulated (max. 3.2 mm)



Attachments

Quick Coupling for K-wires [511.79]

- For insertion of K-wires from 0.6 mm to 3.2 mm in diameter
- Allows use of any length K-wire



511.79

Quick Coupling for drill bits [511.75]

- Accepts quick coupling drill bits
- Allows use of Oscillating Drill Attachment [511.20] and Radiolucent Drive [511.30]



511.75

Large Quick Coupling [511.761]

- Accepts DHS® and DCS® Triple Reamers, and large cannulated drill bits



511.761

Reduction Drive Unit [511.785]

- For intramedullary and acetabular reaming
- Reduces maximum speed to 320 rpm
- Increases maximum output torque to 11 Nm
- Automatically locks reverse trigger to prevent damage to flexible reaming shafts
- Allows direct medullary reaming with flexible shafts
- Accepts reaming rods up to 3.2 mm in diameter



511.785

Jacobs Chuck with key [511.73]

- Accepts round shafts from 1.0 mm to 6.0 mm in diameter, or triangular shafts up to 6.5 mm



511.73

Operating Instructions

ASSEMBLY/DISASSEMBLY

To connect the air hose to the ComPact Air Drive II:

Retract the hose coupling collar. Insert the air drive coupling stem completely into the hose coupling. Release the hose coupling collar to secure the connection.



To disconnect the air hose from the ComPact Air Drive II:

Press the connectors firmly together and simultaneously retract the hose coupling collar until it disengages.



To install an attachment:

Insert the attachment into the air drive coupling until the parts engage. It is not necessary to operate the release button for installation.



To remove an attachment:

Press the release button and remove the attachment.



IMPORTANT

- Use only dry, filtered compressed air or nitrogen to power the ComPact Air Drive II. Never operate air powered machines with oxygen; it creates a danger of fire and explosion.
- Recommended operating pressure, with the instrument running, is 90 psi (6 bars).
- Be sure that all attachments and instruments are inserted securely before operating the air drive.
- Inspect instruments for wear and/or damage after each use. Do not use dull, damaged or corroded drill bits or other instruments.

OPERATION

Speed Control

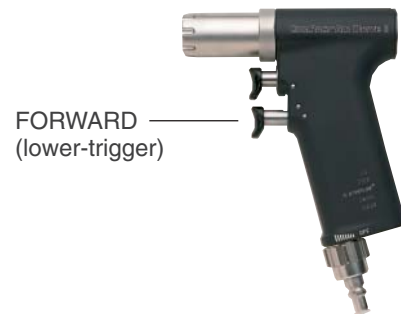
For forward (clockwise) rotation, press the variable-speed trigger of the air drive. Press both triggers for reverse (counterclockwise) rotation. Speed correlates directly to the amount of pressure on the variable-speed trigger and can be varied continuously from 0 to 900 rpm.

Air Control Valve

The ComPact Air Drive II air control valve controls the regulation of maximum speed and power. Turning the air control valve clockwise will increase power; turning counterclockwise will decrease power.

IMPORTANT

To prevent injuries, the air control valve should always be turned to the “off” position when inserting or removing instruments from the attachments.



Operating Instructions (continued)

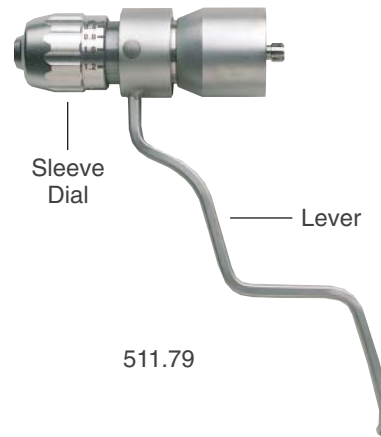
Quick Coupling for K-wires [511.79]

For insertion of K-wires from 0.6 mm to 3.2 mm diameter.

See page 4 for installation and removal of attachments.

IMPORTANT

To prevent injuries, the air control valve should always be turned to the “off” position when inserting or removing K-wires.



To insert the K-wire into the Quick Coupling for K-wires:

Set the adjustment sleeve dial to the K-wire diameter. Insert the K-wire into the front opening and set to the desired working depth.

Note: The K-wire is “presqueezed” upon insertion into the coupling to prevent slippage during handling. Pulling back on the lever grasps the K-wire securely for insertion into bone.



To insert a K-wire into bone:

Grasp the K-wire by pulling the lever against the handpiece, and press the lower (forward) trigger.

To remove a K-wire from bone:

Slide the drive unit and coupling over the K-wire. Grasp the wire by squeezing the lever toward the handpiece and press both triggers simultaneously (reverse) to remove the wire from the bone.



Quick Coupling for Drill Bits [511.75]

- Accepts quick coupling drill bits and screw-driver shafts
- Allows use of Oscillating Drill Attachment [511.20] and Radiolucent Drive [511.30]



511.75

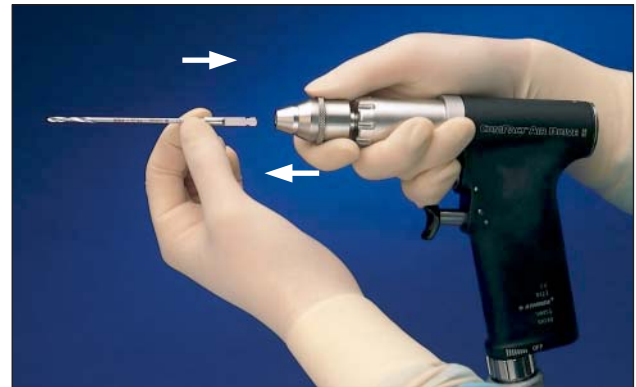
To insert an instrument into the

Quick Coupling for Drill Bits:

Push the collar of the Quick Coupling forward and insert the instrument shaft completely with a slight rotation. When the shaft is fully inserted, release the collar. Pull on the instrument slightly to ensure that it is held securely.

To remove the instrument:

Push the collar of the Quick Coupling forward to release the instrument.



Large Quick Coupling [511.761]

Accepts DHS® and DCS® Triple Reamers, and large cannulated drill bits



511.761

To insert an instrument into the

Large Quick Coupling:

Retract the collar of the Large Quick Coupling and insert the instrument shaft completely with a slight rotation. When the shaft is fully inserted, release the collar. Pull on the instrument slightly to ensure that it is held securely.

To remove the instrument:

Retract the collar of the Large Quick Coupling to release the instrument.

IMPORTANT

To prevent injuries, the air control valve should always be turned to the “off” position when inserting or removing instruments from the Quick Couplings.

Operating Instructions (continued)

Reduction Drive Unit [511.785]

- For intramedullary and acetabular reaming
- Allows intramedullary reaming with flexible shafts and reaming rods
- Automatic locking of reverse trigger prevents damage to flexible shafts

See page 4 for installation and removal of attachments.



511.785

IMPORTANT

To prevent injuries, the air control valve should always be turned to the “off” position when inserting or removing instruments from the Reduction Drive Unit.

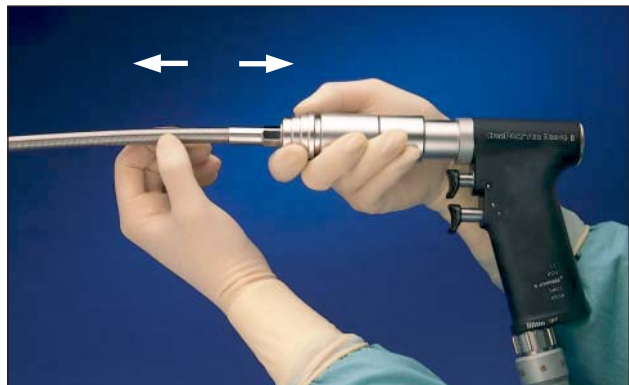
To insert an instrument into the Reduction Drive Unit:

Insert the instrument shaft into the opening until it engages.



To remove the instrument:

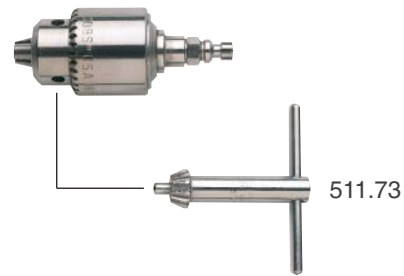
Retract the collar of the quick coupling to release the instrument.



Jacobs Chuck with Key [511.73]

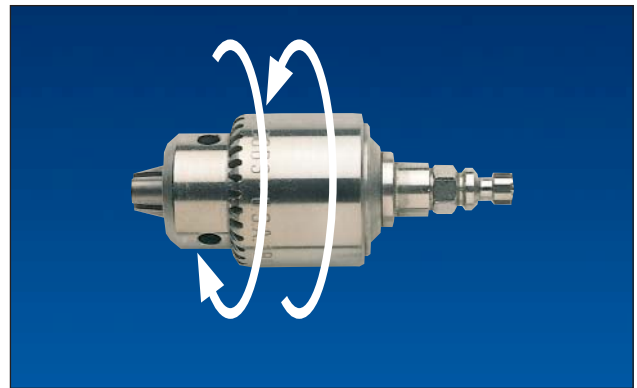
Accommodates instruments, K-wires and Steinmann pins with round shafts from 1.0 mm to 6.0 mm, or triangular shafts up to 6.5 mm.

See page 4 for installation and removal of attachments.



To insert an instrument:

Open the chuck jaws by turning the key counterclockwise, or by manually turning the parts as shown. Insert the instrument shaft into the opened chuck.



Close the chuck manually by rotating the collar, keeping the shaft centered in the jaws. Tighten the chuck by turning the key clockwise.



To remove an instrument:

Turn the key counterclockwise to open the jaws. Remove the instrument.



IMPORTANT

- *To prevent injury, the air control valve should always be turned to the "off" position when inserting or removing an instrument.*
- *Always remove the key from the chuck before operating the air drive.*

Care and Maintenance

IMPORTANT

- Before cleaning and sterilization, remove attachments, instruments and hose from the air drive unit.
- Clean and lubricate the air drive, attachments and air hose immediately after each use.
- Clean the drive unit, attachments and air hose by hand; never immerse or clean in an automatic washer or ultrasonic cleaner.
- Use a mild, neutral pH cleaning solution to clean the air drive and accessories.

CLEANING

Before cleaning, turn the air control valve to the “off” position. Manipulate all other moving parts under running water to loosen and remove debris. Open and close chucks, and move quick couplings back and forth.

- 1 Manually remove blood and debris from the air drive and attachments under running water. Use a mild cleaning solution and a soft brush or cloth.

Do not allow water to enter the air inlet of the drive unit.



- 2 Clean cannulations of the air drive and attachments with the cleaning brush [519.40].

Do not insert cleaning brush into the air inlet. The Quick Coupling for K-wires [511.79] must be fully open to its maximum diameter of 3.2 mm before inserting the brush.



- 3 Retract and clean quick coupling hose end with a soft brush and mild cleaning solution.
Do not allow water to enter the air inlet.



- 4 Clean hose with a mild cleaning solution and a soft brush or cloth.
Keep hose ends out of water.



- 5 Dry all instrumentation with a soft cloth.

Care and Maintenance (continued)

Lubricate the ComPact Air Drive II and attachments after every cleaning and before sterilization. Use SYNTHES Autoclavable Oil [519.97].

LUBRICATING

- 1 Open air control valve before lubrication. Apply approximately five drops of Autoclavable Oil into the air intake of the drive unit. Lubricate both triggers.



- 2 Connect the air drive to the double air hose.



- 3 Run the air drive for 20 seconds in both directions.



- 4 Lubricate all moving parts of the attachments with one to two drops of oil. Operate the parts to distribute the oil. Wipe off excess oil.



- 5 Lubricate the quick coupling hose end with one to two drops of oil.



Sterilization

To sterilize air powered equipment and air hoses:

- If the handpiece is new, remove the plastic stopper in the nitrogen inlet.
- Disassemble all parts including hoses, attachments, adaptors and instruments.
- All air powered equipment should be steam sterilized in accordance with the following guidelines:

	Temperature	Pressure	Minimum Exposure Time
Wrapped			
Gravity displacement	132–135°C 270–275°F	28–32 psi (2 bar)	22 minutes
Prevacuum	132–135°C 270–275°F	28–32 psi (2 bar)	8 minutes
Unwrapped (Flash)			
Gravity displacement	132–135°C 270–275°F	28–32 psi (2 bar)	8 minutes
Prevacuum	132–135°C 270–275°F	28–32 psi (2 bar)	6 minutes

IMPORTANT: *Times represent exposure times only and not total cycle times.*

To minimize hose deformation during autoclaving:

- Place absorbent muslin between handpieces and hoses.
- Do not place weight on the hose.

IMPORTANT

- *Do not accelerate the cooling process. In emergencies, a partially cooled saw or drill can be brought to room temperature by cycling filtered compressed nitrogen or air through it.*
- *Hot air and ethylene oxide gas (ETO) sterilization are not recommended. Hot air can damage air hoses, and steam sterilization is a safer alternative than ETO sterilization.*

Troubleshooting

PROBLEM	PROBABLE CAUSE	SOLUTION
Machine does not start	Safety system may be activated Rotor may jam if machine is not used for a long time	Slide air control valve to the “on” position Mount quick coupling, then rotate chuck manually, without pressing trigger
Machine lacks power	Operating pressure is too low Air inlet is blocked Air control valve may not be completely open Air hose is too long	Adjust operating pressure to 90 psi (6 bar) on regulator Clean air inlet: remove solid particles with pickups Important: <i>Do not use sharp tools. Turn air control valve to the “off” position</i> Slide the air control valve to the “on” position Overall hose length should not exceed 26 feet (8 meters)
Machine keeps on running after trigger is released	Trigger is jammed by residues	Immediately turn air control valve to the “off” position Operate trigger several times, clean and oil according to instructions Important: <i>Use only SYNTHES Autoclavable Oil</i>
Attachments cannot be coupled to machine	Coupling is blocked by residue	Remove solid particles with pickups Important: <i>Do not use sharp tools. Turn air control valve to the “off” position</i>
Cannot remove attachments from drive unit	Release inhibited by pulling on attachment while pressing the release button	Press release button before attempting to remove attachment
Cannot attach instrument or difficulty attaching instrument	Instrument excessively worn, especially insertion part	Replace instrument
K-wire completely inserted into coupling, cannot be advanced	K-wire inserted incorrectly into rear of machine	Disconnect Quick Coupling, hold drive unit with opening down and shake out K-wire Important: <i>Turn air control valve to the “off” position</i>

If suggested solutions are unsuccessful, call the Synthes Service Department at **1-800-288-6698** for servicing information.

Annual servicing by qualified SYNTHES personnel is recommended.

ComPact Air Drive II Set [150.16]

Set Contents

304.010 Graphic Case for ComPact Air Drive II

511.701 ComPact Air Drive II



Also Available

519.97 Autoclavable Oil

519.98 Spare Container with Autoclavable Oil

519.40 Cleaning Brush

Attachments

511.73 Jacobs Chuck with key



511.75 Quick Coupling for drill bits



511.761 Large Quick Coupling



511.785 Reduction Drive Unit



511.79 Quick coupling for K-wires



Double Air Hoses, with SYNTHES stem:

519.50 2 meter length

519.51 3 meter length

519.53 5 meter length

Double Air Hoses, with Schrader stem:

519.50S 2 meter length

519.53S 5 meter length

Also with set:

519.51S Double Air Hose, 3 meter length with Schrader stem

Also Available

511.20	Oscillating Drill Attachment
511.30	Radiolucent Drive
511.731	Keyless Jacobs Chuck
511.782	Hudson Adaptor
511.783	Modified Trinkle Adaptor
511.784	Trinkle Adaptor
511.80	Oscillating Saw Attachment
511.801	Oscillating Saw Attachment II
511.902	Reciprocating Saw Attachment
511.904	Sternum Top, for use with 511.902



Oscillating
Drill Attachment
511.20



Keyless
Jacobs Chuck
511.731



Radiolucent Drive
511.30

Saw Blades for Oscillating Saw Attachment II^o

	WIDTH	CALIBRATED LENGTH	CUTTING THICKNESS
519.100	27 mm	50 mm	0.6 mm
519.103	10 mm	25 mm	0.6 mm
519.104	10 mm	50 mm	0.6 mm
519.105	20 mm	50 mm	0.6 mm
519.106	19 mm	70 mm	1.0 mm
519.113	18 mm	70 mm	1.2 mm
519.150	14 mm	50 mm	0.6 mm
519.170	27 mm	70 mm	0.8 mm
519.190	50 mm	70 mm	0.8 mm
519.200	27 mm	70 mm	1.0 mm
519.210	27 mm	70 mm	1.2 mm
519.230	6 mm	25 mm	0.6 mm
519.250	14 mm	25 mm	0.6 mm



Hudson Adaptor
511.782



Modified
Trinkle Adaptor
511.783



Trinkle Adaptor
511.784



Oscillating Saw Attachment
511.80



Oscillating Saw Attachment II
511.801



Reciprocating Saw Attachment
511.902

Aggressive Tooth Saw Blades*

	WIDTH	CALIBRATED LENGTH	CUTTING THICKNESS
519.107S	19 mm	95 mm	0.9 mm
519.108S	25 mm	95 mm	0.9 mm
519.109S	25 mm	60 mm	0.9 mm
519.114S	19 mm	95 mm	1.25 mm
519.115S	25 mm	95 mm	1.25 mm
519.116S	19 mm	95 mm	1.4 mm
519.117S	25 mm	95 mm	1.4 mm
519.118S	12.5 mm	90 mm	0.9 mm



519.100



511.905



519.104



511.907



519.250



511.909



519.108S



511.912

Saw Blades for Reciprocating Saw Attachment^o

	LENGTH	CUTTING THICKNESS
511.905	80 mm	1.1 mm
511.907	55 mm	1.1 mm
511.909	55 mm	0.9 mm
511.912	68 mm	1.1 mm
511.915	42 mm	0.8 mm

^o Also available sterile-packed. Add 'S' to catalog number.
* Available sterile only.

ComPact Air Drive II Set [150.16]



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