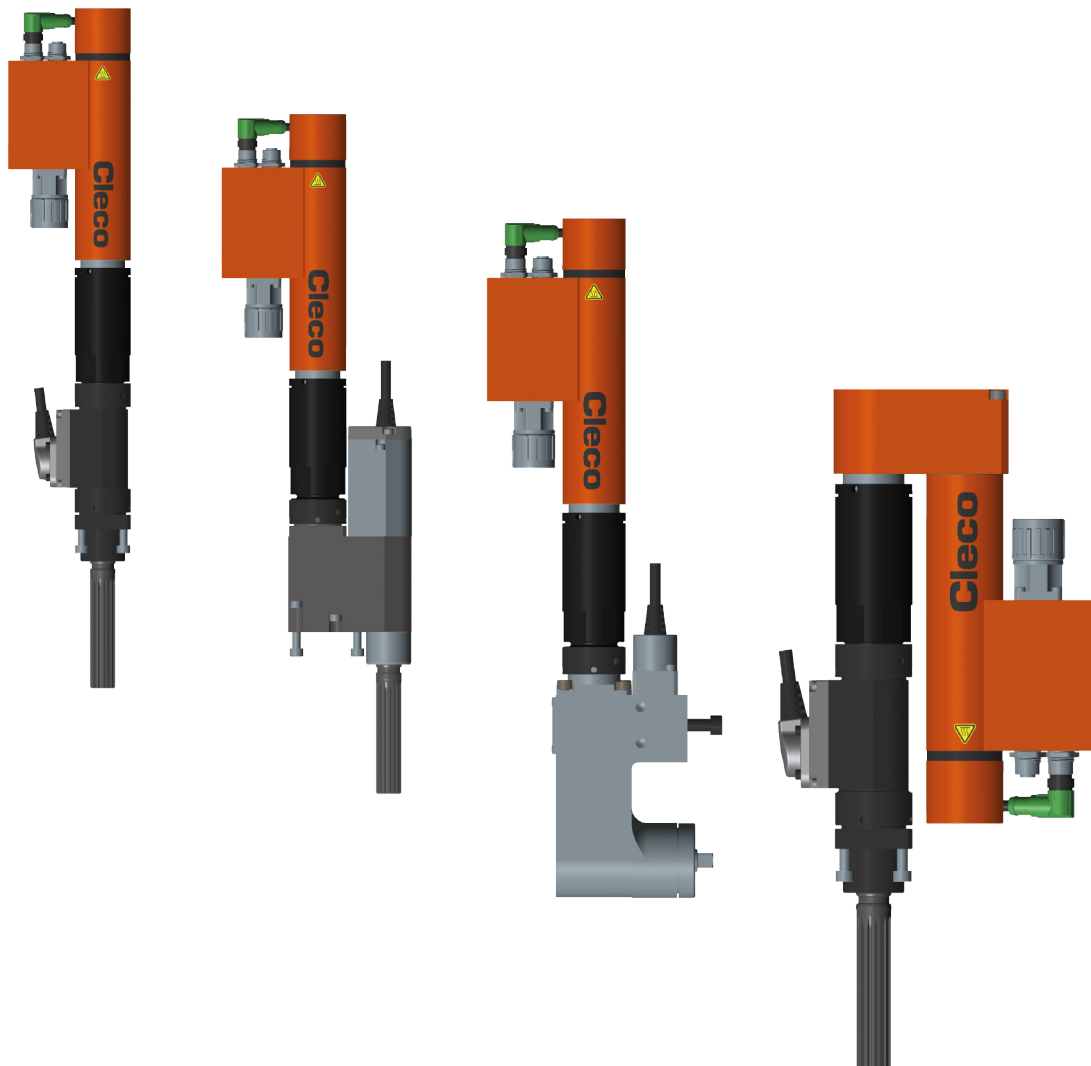




Maintenance instructions
P2578WA-EN
2021-10

BD Series

Spindle



Copyright © Apex Tool Group, 2021

No part of this document may be reproduced in any way or in any form, in whole or in part, or in a natural or machine-readable language, or transmitted on electronic, mechanical, optical, or other media, without the express permission of the Apex Tool Group.

Disclaimer

Apex Tool Group reserves the right to modify, supplement, or improve this document or the product without prior notice.

Trademark

Cleco Production Tools is a registered trademark of Apex Brands, Inc.

Apex Tool Group

670 Industrial Drive
Lexington, SC 29072
USA

Manufacturer

Apex Tool Group GmbH

Industriestraße 1
73463 Westhausen
Germany

Content

1	About this document	4
1.1	Other documents	4
1.2	Symbols in the text	4
2	Safety	4
2.1	Warnings and Notices.....	4
2.2	Symbols on the Product.....	4
2.3	Operator Training.....	5
2.4	Personal Protective Equipment	5
3	Maintenance	6
3.1	Lubricants	6
4	Removal	7
5	Assembly	7
5.1	Tightening torques	8
6	Recalibration of fastener data	9
7	Disposal	9

1 About this document

This document is intended for specialists in installation and maintenance (administrators, maintenance staff, service personnel, owners/operators).

It contains information

- on cleaning.
- on maintenance.
- on regularly scheduled inspections.

The original language of this document is German.

1.1 Other documents

Number	Document
P2577SB	System manual – BD Series
P2579MA	Assembly instructions – Fixtured Spindle BD Series
P3319H	Declaration of incorporation – BD Series
CE-1026	EU Declaration of Conformity – BD Series

1.2 Symbols in the text

italic Menu options (e.g., Diagnostics) input fields, check boxes, radio buttons or dropdown menus.

> Indicates selection of a menu option from a menu, e.g., *File > Print*.

<...> Specifies switches, pushbuttons or the keys of an external keyboard, e.g., <F5>.

Courier Indicates Filenames and paths, e.g., *setup.exe*.

- Indicates lists, level 1.
- Indicates lists, level 2.

- a) Indicates options.
- b)

➤ Indicates results.

1. (...) Indicates action steps.
2. (...)

▶ Indicates single action steps.

2 Safety

- ▶ Only read these maintenance instructions in conjunction with the assembly instructions and the safety instructions contained therein.
- ▶ Read all safety warnings and instructions. Failure to follow the directions and safety instructions could result in an electric shocks, burns and/or serious injuries.
- ▶ Keep this document in a safe place for future reference!
- ▶ These safety instructions must be accessible at all times to all persons who use the product.

2.1 Warnings and Notices

Warning notes are identified by a signal word and a pictogram:


- The signal word describes the severity and probability of the impending danger.
- The pictogram describes the type of danger.

	Danger A symbol combined with the word Danger indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.
	Warning A symbol combined with the word Warning indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.
	Caution A symbol combined with the word Caution indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.
	Note A symbol combined with the word Note indicates a potentially harmful situation which, if not avoided, could result in damage to property or the environment.



General instructions include application tips and useful information, but no warnings against hazards.

Structure Of Warnings

	Caution Type and source of danger. Possible consequences of non-observance. ▶ Measures to avoid danger.
---	--

2.2 Symbols on the Product



Electric voltage



Hot surface



Read the operating instructions carefully



CE compliant
The product corresponds to the prescribed technical requirements in Europe.



Observe and comply with all local disposal guidelines for all components of this equipment and its packaging.

2.3 Operator Training

The fastening system may only be put into operation, set up and maintained by personnel who have been trained and qualified by the Apex Tool Group.

The product has been preset by the Apex Tool Group. Changes to the factory settings may only be carried out by a specialist ¹.

The owner/operator must ensure that new operating and maintenance personnel are instructed in the operation and servicing of the fastening system to the same extent and with the same care.

Personnel undergoing schooling/training/instruction may only work with the fastening system under the supervision of an experienced person.

2.4 Personal Protective Equipment

- ▶ Wear safety shoes.

The motor can heat up and cause burns during removal (max. motor temperature 80 °C).

- ▶ Wear gloves when touching the motor.
- ▶ When working with rotating parts, it is not permitted to wear gloves.
 - Recommendation: Freely rotating u-GUARD protected fastening tools from APEX.
- ▶ Wear suitable clothing. Do not wear loose clothing or jewelry.
- ▶ Wear protective goggles if there is a risk of dirt or parts being ejected.
- ▶ Wear a hair net, if necessary.

¹ Specialists are appropriately trained and experienced to recognize potentially hazardous situations. You can take

appropriate safety measures and must comply with the applicable regulations

3 Maintenance

Maintenance is only permitted by Apex Tool Group authorized personnel. Regular maintenance reduces operational interruptions, repair costs and downtimes. Therefore, implement a safety-related maintenance program that takes into account the local regulations for repair and maintenance for all the operating phases of the tool.



Note

Incorrect calibration data

After replacing a component that has an impact on the accuracy of the tool (motor, gear, output drive), the calibration data may be falsified.

- ▶ Carry out a mandatory machine capability test.
- ▶ Send the built-in nutrunner to Sales & Service Center for recalibration. This is the only way to ensure that the screwdriver data is updated correctly after the service work.



Note

Loss of warranty

Repairs are only permitted by Apex Tool Group authorized personnel. If the tool is opened, the warranty is voided.

- ▶ If repair is required send the complete tool to Sales & Service Center!

Maintenance after every (...) fastening cycles		Measures
Use at 80% of the maximum torque.	Use at 100% of the maximum torque.	
Generally applies to all types		
3 million	1 million	General overhaul ► Send tool for inspection, lubrication and recalibration to Sales & Service Center.
Exceptions		
500 000	250 000	Size 4, straight attachment (...)-4Z2800(...) (...)-4Z1250(...) (...)-4Z1600(...) ► Send spindle for inspection, lubrication and recalibration to Sales & Service Center.
1 million	500 000	Size 4, angle drive attachment (...)-4WK(...)M ► Send spindle for inspection, lubrication and recalibration to Sales & Service Center.
1 million	700 000	Size 2, angle drive attachment (...)-2WK(...)M Size 3, angle drive attachment (...)-3WK(...)M ► Send spindle for inspection, lubrication and recalibration to Sales & Service Center.

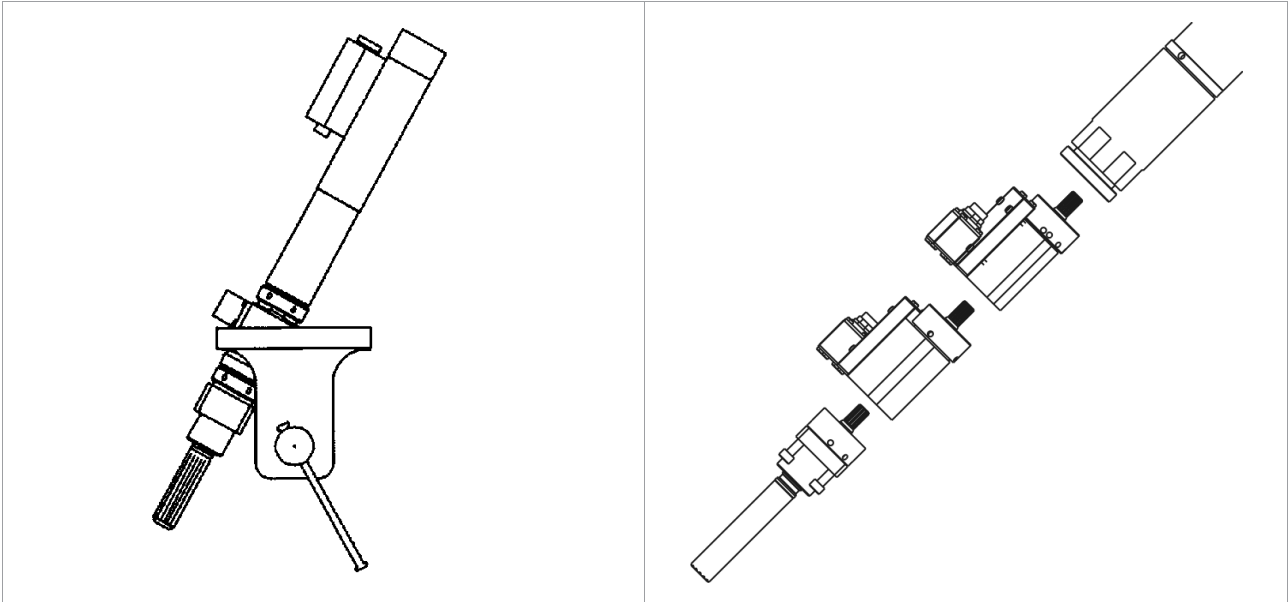
3.1 Lubricants

Order No.	Packaging unit [kg]	Name DIN 51502	KLÜBER LUBRICATION
933027	1	KP1K	MicroLube GL261 ¹

¹ Initial lubrication Apex Tool Group

4 Removal

- ▶ Loosen and remove plug connectors.
- ▶ Remove the complete spindle from the work cell.
- ▶ Fix the spindle or component to the wrench flats in a vice. Place in position, do not tighten!
- ▶ Turn the cap nut counterclockwise.
- ▶ Loosen the components.



5 Assembly



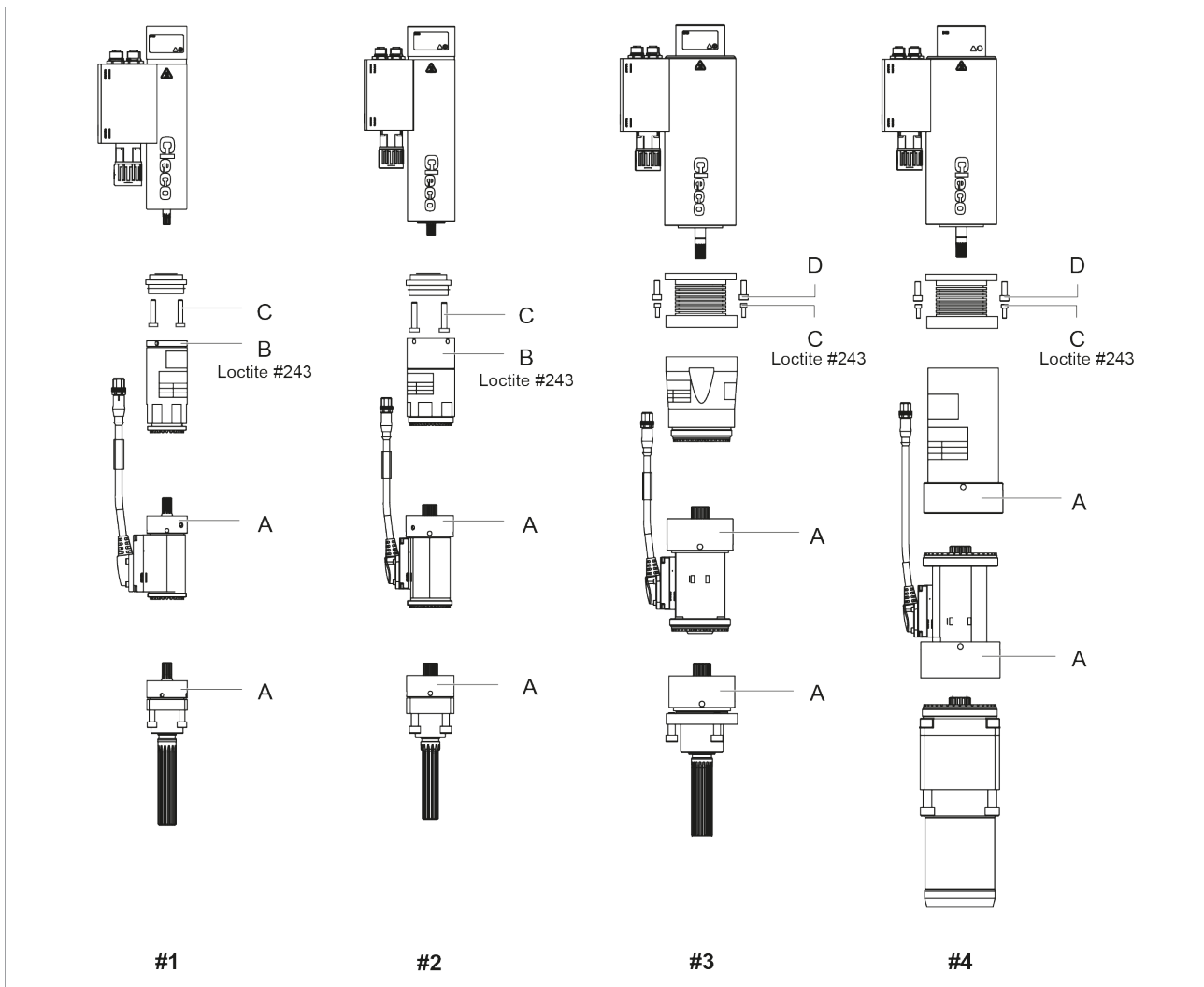
Caution

Danger from flying parts

Components of the spindle can become loose due to rotation and cause serious injuries.

- ▶ Note the tightening torques for the cap nut.

5.1 Tightening torques



Attachment – Transducer

Size	Index	Tightening torque Target [Nm]	Tightening torque Setting ¹ [Nm]	Hook wrench Order No.	Torque wrench Order No.
1	A	55–60	48–53	933336	933340
1	B	50–55	43–48	933336	933340
2	A	80–90	68–78	933337	933340
2	B	40–50	33–43	933337	933340
3	A	80–90	68–78	933338	933340
4	A	105–115	87–97	933339	933340

¹ Different setting due to leverage effect of the hook wrench

Fastening gear – Motor

Size	Index	Tightening torque Target [Nm]	Screwdriver Order No.
1	C	2.7-3.3	913947
2	C	2.7-3.3	913947
3	C	4.9-5.1	Upon request
3	D	9-11	920533
4	C	4.9-5.1	Upon request
4	D	9-11	920533

6 Recalibration of fastener data

The fastener data are defined in the service memory of the spindle and are located in the transducer (i.e., also offset attachment and angle drive attachment) and motor. New spare part components do not contain any screwdriver data in the service memory (various types of installation can be carried out).

The transducer, as a replacement part, is prepared for self-identification. In this case, the fastener data must be entered manually with the controller in the service memory. The measuring function for the torque is fully available.



Note

Incorrect calibration data

After replacing a component that has an impact on the accuracy of the tool (motor, gear, output drive), the calibration data may be falsified.

- ▶ Carry out a mandatory machine capability test.
- ▶ Send the built-in nutrunner to Sales & Service Center for recalibration. This is the only way to ensure that the screwdriver data is updated correctly after the service work.

7 Disposal

Components and auxiliary materials of the product pose risks to the health and the environment. The tool contains components that can be recycled as well as components that must be specially disposed of.

- ▶ Separate the components and dispose of them by segregating them clearly.
- ▶ Catch auxiliary materials (oils, greases) when drained and dispose of them properly.
- ▶ Follow the locally applicable regulations.



Observe generally valid disposal guidelines such as, in Germany, the Electrical and Electronic Equipment Act (ElektroG) and the Battery Act (BattG). Wasted electronic equipment must be disposed of.

- ▶ Return the defective product to your company collection facility or to *Sales & Service Center*.

POWER TOOLS SALES & SERVICE CENTERS

Please note that all locations may not service all products.

Contact the nearest Cleco® Sales & Service Center for the appropriate facility to handle your service requirements.



Sales Center



Service Center

NORTH AMERICA | SOUTH AMERICA

DETROIT, MICHIGAN

Apex Tool Group
2630 Superior Court
Auburn Hills, MI 48236
Phone: +1 (248) 393-5644
Fax: +1 (248) 391-6295

LEXINGTON,

SOUTH CAROLINA

Apex Tool Group
670 Industrial Drive
Lexington, SC 29072
Phone: +1 (800) 845-5629
Phone: +1 (919) 387-0099
Fax: +1 (803) 358-7681

MEXICO

Apex Tool Group
Vialidad El Pueblito #103
Parque Industrial Querétaro
Querétaro, QRO 76220
Mexico
Phone: +52 (442) 211 3800
Fax: +52 (800) 685 5560

EUROPE | MIDDLE EAST | AFRICA

ENGLAND

Apex Tool Group UK
C/O Spline Gauges
Piccadilly, Tamworth
Staffordshire B78 2ER
United Kingdom
Phone: +44 1827 8727 71
Fax: +44 1827 8741 28

FRANCE

Apex Tool Group SAS
25 Avenue Maurice Chevalier - ZI
77330 Ozoir-La-Ferrière
France
Phone: +33 1 64 43 22 00
Fax: +33 1 64 43 17 17

GERMANY

Apex Tool Group GmbH
Industriestraße 1
73463 Westhausen
Germany
Phone: +49 (0) 73 63 81 0
Fax: +49 (0) 73 63 81 222

HUNGARY

Apex Tool Group
Hungária Kft.
Platánfa u. 2
9027 GyőrHungary
Phone: +36 96 66 1383
Fax: +36 96 66 1135

ASIA PACIFIC

AUSTRALIA

Apex Tool Group
519 Nurigong Street, Albury
NSW 2640
Australia
Phone: +61 2 6058 0300

CHINA

Apex Power Tool Trading
(Shanghai) Co., Ltd.
2nd Floor, Area C
177 Bi Bo Road
Pu Dong New Area, Shanghai
China 201203 P.R.C.
Phone: +86 21 60880320
Fax: +86 21 60880298

INDIA

Apex Power Tool Trading
Private Limited
Gala No. 1, Plot No. 5
S. No. 234, 235 & 245
Indialand Global
Industrial Park
Taluka-Mulsi, Phase I
Hinjawadi, Pune 411057
Maharashtra, India
Phone: +91 020 66761111

JAPAN

Apex Tool Group Japan
Korin-Kaikan 5F,
3-6-23 Shibakoen, Minato-Ku,
Tokyo 105-0011, JAPAN
Phone: +81-3-6450-1840
Fax: +81-3-6450-1841

KOREA

Apex Tool Group Korea
#1503, Hibrand Living Bldg.,
215 Yangjae-dong,
Seocho-gu, Seoul 137-924,
Korea
Phone: +82-2-2155-0250
Fax: +82-2-2155-0252

Cleco®
Production Tools