Repair instructions

BLK 1.3TE/CSE, 1.6E/LE, 2.0E

Contents

1. Models described

These instructions describe how to repair the following models:

Model	Order no.
BLK 1.3 TE	723241
BLK 1.3 CSE	723242
BLK 1.6E	723238
BLK 1.6LE	723239
BLK 2.0E	723240

2. Technical data

Technical data
The complete technical data can be found in the operating instructions for the model.

Test data
Up-to-date test data for all models can be found on the FEIN Extranet (Customer Service → Repair Guides).

Lubricants
Lubricants and container sizes available from FEIN can be found on the FEIN Extranet (Customer Service → Repair Guides).

Lists of spare parts
Lists of spare parts and exploded views are available online at www.fein.com

3. Provisions

Provisions

Please note that power tools may only be repaired, maintained and checked by a trained electrician, as improper repair can result in serious risks to the user.

The provisions set out in *DIN VDE 0701-0702* should be observed after repairs.

Only use original FEIN spare parts!

The relevant accident prevention regulations of the employers' liability insurance associations are to be observed when commissioning.

The German Equipment and Product Safety Act applies for correct use.

Outside Germany, the regulations applicable in the relevant country must be observed!

4. Tools required

Standard tools

Open-ended spanner: WAF 30
Plastic hammer
Screwdriver: Torx 15
Flat nose pliers
Long-nosed pliers
Circlip pliers
Punch
Arbor press
Cable hooks
Sleeves

Special tools

Drawing-off socket cap	6 41 04 150 00 8
Chuck cone	6 41 07 019 00 7
Chuck cone	6 41 07 026 00 0
Press-in fixture	6 41 22 108 00 0

5. Lubricants and auxiliary substances required

Lubricants

Grease	0 40 108 0400 8	15 g	Gearbox, needle bearing, ball bearing
Grease	0 40 119 0500 7		Sliding surfaces of plunger, con rod, punch

Auxiliary substances

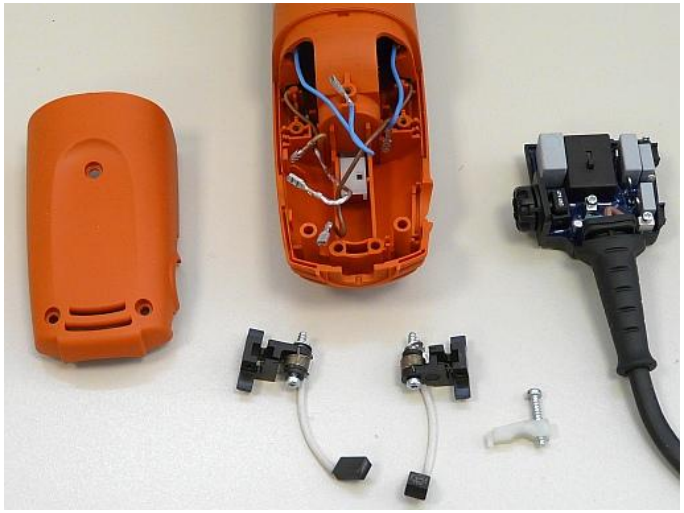
Loctite 574	Between gearbox head and intermediate bearing

4. Disassembly

Before starting to remove the

motor or gearbox, the tool must always be disconnected from the mains.

4.1. Disassembly - Motor



1.Remove screws and lift off cover.
2.Unscrew carbon holder.
3.Unscrew traction relief.
4.Unscrew plug connection between motor and electronics.

Tool:

- Screwdriver
  Torx 15

4.2. Disassembly - Separating motor and gearbox

1.Remove screws.
2.Remove gearbox housing with armature from motor housing.
3.Remove sealing ring from intermediate bearing.
4.Remove intermediate gear shaft from intermediate bearing or gearbox housing.
5.Remove air guide ring.

Tool:

- Screwdriver
  Torx 15
- Plastic hammer

4.3. Disassembly - Field coil

1. Loosen and remove screws on field coil.
2. Drive field coil out of motor housing by tapping gently with hammer.

Tool:

- Screwdriver
  Torx 15

- Plastic hammer

4.4. Disassembly - Armature and intermediate bearing

1. Press armature out of intermediate bearing.
2. Remove ball bearing and sealing ring from armature and replace if necessary.

Tools:

- Arbor press
- Ball bearing extractor
  19 mm, 26 mm
-Drawing-off socket cap
-Sleeve: inside 55 mm, outside 65 mm

4.5. Disassembly - Gear-wheel / eccentric shaft

1. Remove circlip, gear-wheel and feather key
2. Remove circlip and drive eccentric shaft and drive out of gearbox housing by tapping gently with hammer

Tool:

-Circlip pliers
- Plastic hammer

4.7. Disassembly - Gearbox housing / plunger (BLK 1.3.TE, CSE)



1. Remove retainer nut with open-ended spanner (WAF 30)
2. Carefully remove plunger from gearbox housing

Tool:

- Open-ended spanner, WAF 30

4.7. Disassembly – Plunger (BLK 1.3 TE, CSE)

1. Loosen retainer nut and remove cutting head with punch and plunger
2. Remove plunger and punch from cutting head

Tool:

- Open-ended spanner, WAF 30
- Punch

4.8. Disassembly - Gearbox housing / plunger (BLK 1.6 LE)



1. Remove retainer nut with open-ended spanner (WAF 30)
2. Carefully remove plunger from gearbox housing

Tool:

- Open-ended spanner, WAF 30

4.8. Disassembly - Plunger (BLK 1.6 LE)




1. Loosen retainer nut and remove bearing sleeve with die and plunger
2. Remove plunger and punch from bearing sleeve

Tool:

- Screwdriver
- Punch

4.9. Disassembly - Gearbox housing / plunger (BLK 1.6E)

1. Loosen retainer nut and remove cutting head with die and punch
2. Take punch out of cutting head and remove from lower section of plunger

Tool:

- Open-ended spanner, WAF 30

4.9. Disassembly - Cutting head (BLK 1.6E)

1. Remove screw (with O-ring).
2. Remove die from cutting head.

Tool:

- Socket head wrench 6 mm

4.6. Disassembly - Gearbox housing / plunger (BLK 2.0E)

1. Remove retainer nut with open-ended spanner (WAF 30)
2. Carefully remove plunger from gearbox housing

Tool:

- Open-ended spanner, WAF 30

4.7. Disassembly - Plunger (BLK 2.0E)

1. Remove bearing sleeve with die and plunger
2. Remove plunger and punch from bearing sleeve
3. Remove snap ring, straight pin and die from support pin

Tool:

- Screwdriver
- Punch

5. Assembly

5.1. Assembly - Complete plunger (BLK 1.3 TE, CSE)



1.Connect upper and lower sections of plunger
2.Connect punch to upper and lower sections of plunger
3.Insert assembled plunger into die
4.Coat sliding surface between punch and die with Molykote paste

Grease:

- Tube 85g
  3 21 60 003 19 8

5.1. Assembly - Die and plunger / gearbox housing (1.3 TE, CSE)

1. Insert fully assembled die into gearbox housing
2. Fix die in place with retainer nut

5.2. Assembly - Cutting head (BLK 1.6E)



1. Insert die in cutting head - !!! Only fits in one position !!!
2. Fit screw with O-ring in cutting head

Tool:

- Socket head wrench 6 mm
- Open-ended spanner WAF 30

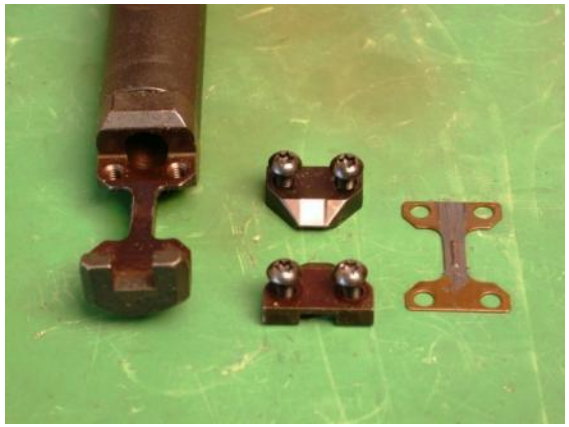
5.2. Assembly - Die / punch / gearbox housing (BLK 1.6E)

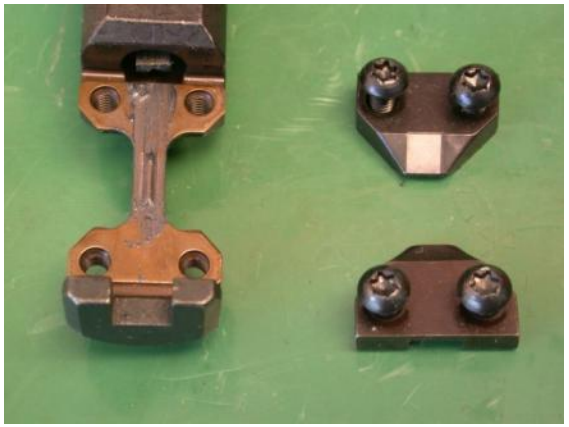
1. Fit punch in lower section of plunger and insert in pre-fitted cutting head
2. Slide retainer nut over cutting head and screw down to gearbox housing (WAF 30)

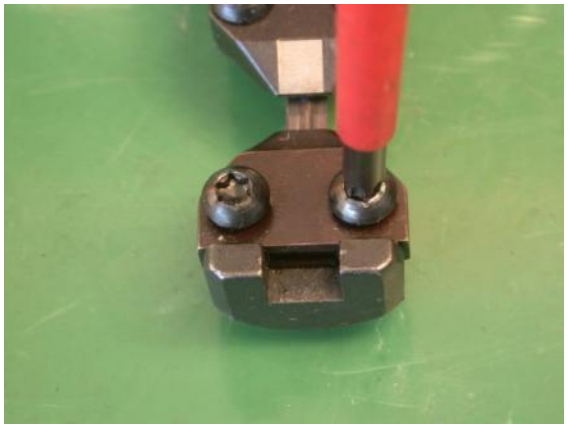
Tool:

- Socket head wrench 6 mm
- Open-ended spanner WAF 30

5.3. Assembly - Bearing sleeve / die (BLK 1.6 LE)







1. Fit die on support pin
2. Insert straight pin
3. Fit snap ring

Tool:

- Flat nose pliers
- Screwdriver

5.4. Assembly - Complete plunger (BLK 1.6 LE)

1.Bearing sleeve with die, punch, plunger (lower section)
2.Connect punch to upper and lower sections of plunger
3.Insert assembled plunger in bearing sleeve
4.Coat sliding surface between punch and cutting head with Molykote paste

Grease:

- Tube 85g
  3 21 60 003 19 8

5.4. Assembly - Plunger / gearbox housing (BLK 1.6 LE)



1. Insert fully assembled plunger into gearbox housing
2. Fix plunger in place with retainer nut

5.1. Assembly - Bearing sleeve / die (BLK 2.0E)

1. Fit die on support pin
2. Insert straight pin
3. Fit snap ring

Tool:

- Flat nose pliers
- Screwdriver

5.2. Assembly - Complete plunger (BLK 2.0E)

1.Bearing sleeve with die, punch, plunger (lower section)
2.Connect punch to upper and lower sections of plunger
3.Insert assembled plunger in bearing sleeve
4.Coat sliding surface between punch and cutting head with Molykote paste !!

Grease:

- Tube 85g
  3 21 60 003 19 8

5.3. Assembly - Plunger / gearbox housing (2.0E)

1. Insert fully assembled plunger into gearbox housing
2. Fix plunger in place with retainer nut

5.3. Assembly - Eccentric shaft

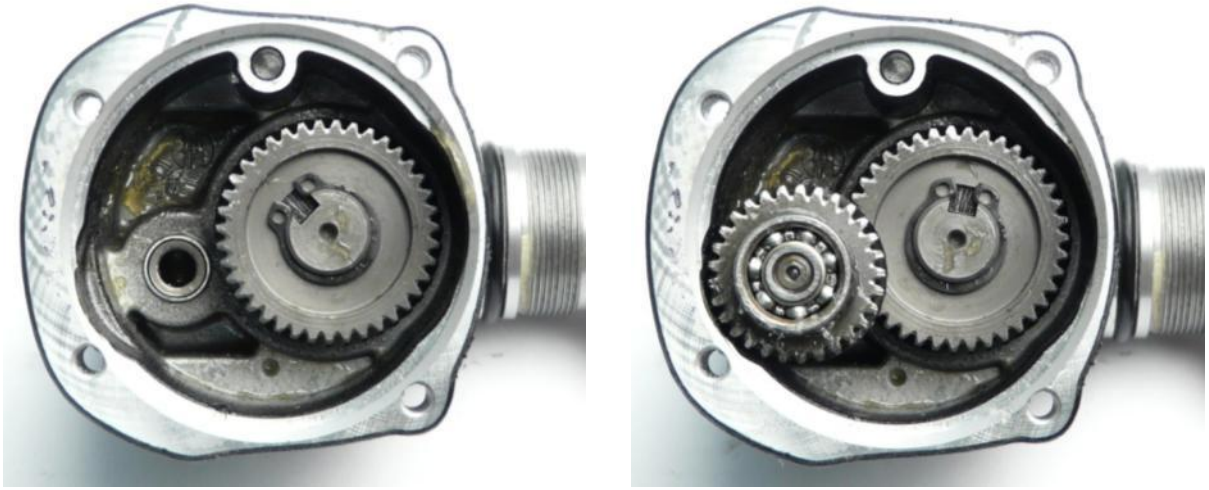
1. Fit drive together with needle bearing in plunger
2. Insert eccentric shaft into gearbox housing (eccentric part must engage in drive)
3. Fit circlip

Tool:

- Straight long-nosed pliers

-Circlip pliers

5.4. Assembly - Gear-wheel / intermediate gear



1. Fit feather key
2. Fit gear-wheel on eccentric shaft and fit circlip
3. Insert intermediate gear

Tool:

- Flat nose pliers
- Circlip pliers

5.5. Assembly - Armature and intermediate bearing




1. Press ball bearing on to collector side of armature.
2. Press sealing ring on to fan wheel side.
3. Press ball bearing on to fan wheel side.
4. Press complete armature into intermediate bearing.

Tools:

-Arbor press
-Sleeve: inner diameter 7 mm
-Ball bearing support: 19 mm, 26 mm
-Press-in fixture

5.6. Assembly - Motor / field coil

1.Insert cable in field coil and fit field coil
ID number must be on slide switch side
2.Screw down field coil
3.Lay cable in cable ducts provided

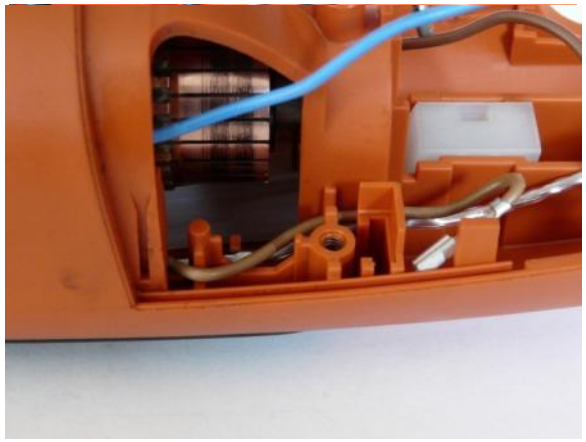
Tool:

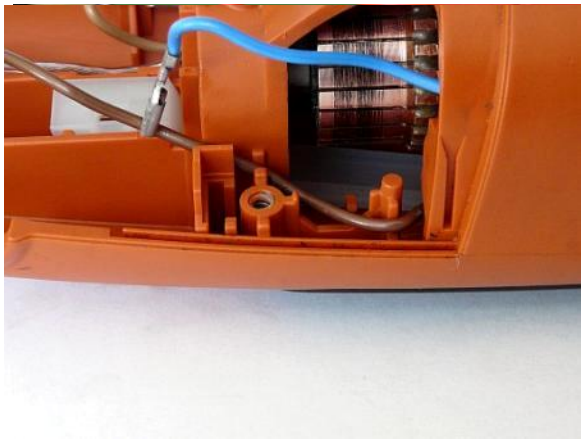
- Screwdriver
  Torx 15
-Cable hooks

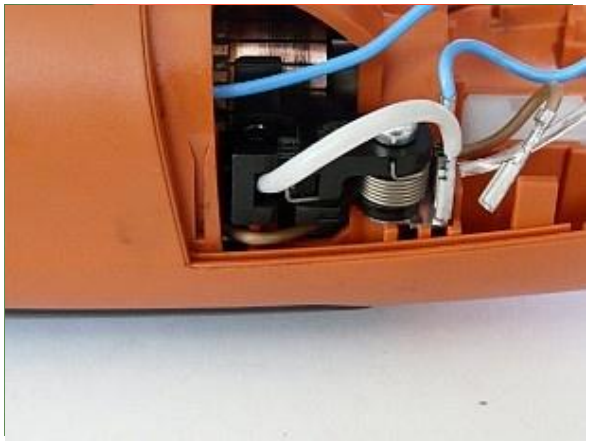
5.7. Assembly - Motor / armature and intermediate bearing

1. Insert air guide ring in housing
2. Fit both protective grilles on intermediate bearing
3. Insert armature and intermediate bearing into motor housing

5.8. Assembly - Carbon holder





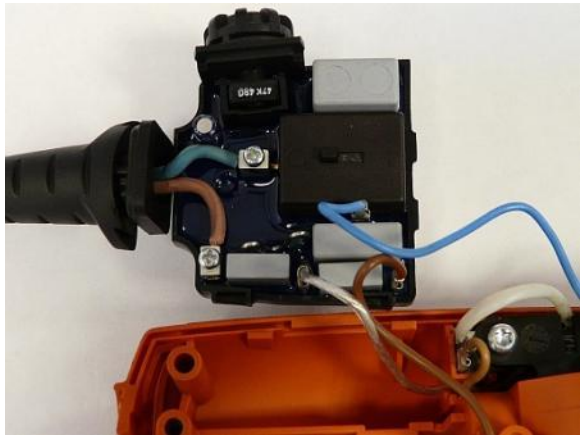


1. Note cable routing
2. Fit carbon holder, fit and connect carbon brush

Tool:

- Screwdriver
  Torx 15
- Cable hooks

5.9. Assembly - Switch / mains cable



1. Connect motor cable to electronic unit
2. Insert electronic unit in housing
   NOTE
   Ensure that switch engages in control rod.

3. Screw down traction relief
4. Fit and screw down cover
   Make sure cable is not trapped!

Tool:

- Screwdriver
  Torx 15

5.10. Assembly - Motor / gearbox housing

1. Place sealing ring on intermediate bearing.
2. Seal sealing surface between intermediate bearing and gearbox head with Loctite 574.
3. Fit gearbox head on intermediate bearing and screw in place.
4. Perform function check

Tool:

- Screwdriver
  Torx 15

8. Connection diagram