

# Maintenance



## W head

Version 1.5

Published by:

ZSK Stickmaschinen GmbH  
- Dokumentation -  
D-47800 Krefeld-Gartenstadt  
Magdeburger Str. 38 - 40



© '06 by ZSK, Printed in Germany



# Contents

|   |              |
|---|--------------|
| <b>W head maintenance</b>                                 | <b>1 - 1</b> |
| For your safety   | 1 - 1        |
| Lubricants  | 1 - 1        |
| Alternative lubricants                                    | 1 - 1        |
| Overview of maintenance intervals                         | 1 - 2        |
| General maintenance                                       | 1 - 7        |
| Clean rotary hook and surrounding area                    | 1 - 7        |
| Oil rotary hook   | 1 - 7        |
| Foot plate  | 1 - 8        |
| Cleaning thread trimmer                                   | 1 - 8        |
| Thread trimmer drive                                      | 1 - 8        |
| Grease drive wheels                                       | 1 - 9        |
| Grease connecting rod                                     | 1 - 10       |
| Cylinder arm  | 1 - 11       |
| Cleaning thread trimmer                                   | 1 - 11       |
| Thread trimmer drive                                      | 1 - 11       |
| Grease drive wheel  | 1 - 12       |
| Greasing, connecting rod                                  | 1 - 13       |
| Thread trimmer drive (underneath cylinder arm)            | 1 - 13       |
| W head  | 1 - 14       |
| Greasing driver thrust bearing                            | 1 - 14       |
| Checking toothed belt (zigzag drive)                      | 1 - 15       |
| Oiling needle bar (top bearing)                           | 1 - 16       |
| Only with embroidery heads equipped with steel needle bar | 1 - 16       |
| Oiling retainer with pawl                                 | 1 - 17       |
| Oiling connecting rod                                     | 1 - 18       |
| Greasing helical gear                                     | 1 - 19       |
| Oiling zigzag drive shaft                                 | 1 - 20       |
| Checking toothed belt (presser foot drive)                | 1 - 21       |
| Adjusting toothed belt tension                            | 1 - 21       |

|   |        |
|---|--------|
| Oiling needle bar (presser foot sleeve) . . . . .                 | 1 - 22 |
| Only with embroidery heads equipped with steel needle bar: 1 - 22 |        |
| Greasing presser foot sleeve (steel bearing) . . . . .            | 1 - 23 |
| Grease zigzag sleeve (aluminum sleeve) . . . . .                  | 1 - 24 |
| Checking toothed belt (coiling shaft) . . . . .                   | 1 - 25 |
| Greasing zigzag fork halves (zigzag sleeve) . . . . .             | 1 - 26 |
| Oiling zigzag sleeve driver . . . . .                             | 1 - 27 |
| Cleaning thread guide (upper thread) . . . . .                    | 1 - 28 |
| Troubleshooting . . . . .   | 1 - 29 |
| W head, general. . . . .  | 1 - 29 |
| Zigzag stitch type . . . . .                                      | 1 - 29 |
| Cord/tape stitch type . . . . .                                   | 1 - 30 |
| Coiling stitch type . . . . .                                     | 1 - 30 |

|              |              |
|--------------|--------------|
| <b>Index</b> | <b>I - 1</b> |
|--------------|--------------|

## 1. W head maintenance

### 1.1 For your safety

**DANGER**



00400035

#### **Before undertaking any cleaning or maintenance work:**

**Make certain that the machine cannot be switched on unintentionally by unauthorized persons.**

**Covers have to be removed to perform some maintenance work. On no account is the machine to be restarted before you have re-installed all covers properly.**

### 1.2 Lubricants

The standard machine accessories include:

- A spray can containing sewing machine oil (JC W 35 Super Lubrifiant, ZSK order No. 750 081)
- A grease cartridge (Gleitmo 585M, ZSK order No. 667 055).

Special accessories

- A grease cartridge (ISOFLEX TOPAS L 32, ZSK order No. 750 105).

As far as possible, use only the original lubricants supplied with the machine when carrying out maintenance work. These lubricants are available from ZSK.

#### **NOTE**



00400040

**Waste grease and oil are to be treated in compliance with the disposal regulations applicable in the country concerned or surrendered to a hazardous waste facility.**


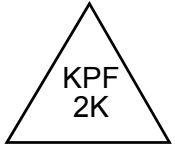
## NOTE

### 1.2.1 Alternative lubricants

**Note the remarks below if you elect to use different lubricants.**

**If using other lubricants, choose only greases and oils that are in the same category as the original lubricants and thus have similar properties. See table below.**

The table below contains the DIN 51 502 designations and the principal properties of the lubricants supplied with the machine.

| Lubricant                   | Designation acc. to DIN 51 502  | Description/properties  |
|-----------------------------|---|---|
| JC W 35<br>Super Lubrifiant |   | Circulation system lubricating oil with additives to improve resistance to ageing and corrosion according to DIN 51 517 Part 2.<br>Viscosity at 40°C: 22 ± 2.2 mm <sup>2</sup> /s (cSt)   |
| Gleitmo 585M                |  | Lubricating grease for high pressures, water resistant, with additives to improve resistance to corrosion and wear, and solid lubricant based on MoS <sub>2</sub> .<br>Worked penetration: 265-295 10 <sup>-1</sup> mm,<br>Service temperature: -20 to +120°C |

## 1.3 Overview of maintenance intervals

### NOTE

The stated maintenance intervals apply as guidelines for normal single-shift operation. In case of 2 or 3-shift duty cycles, the intervals are to be reduced accordingly.

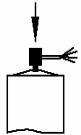




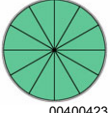
Before applying grease or oil, remove dirt and old residual lubricant.

All installed lifting magnets are maintenance-free and must not be oiled.

### CAUTION

Do not apply an excessive amount of grease or oil, otherwise moving parts can hurl off lubricant or give rise to dripping. This could cause the work to be soiled.













#### Key to maintenance table

|   |  |
|---|--|
| <br>1x<br>(No. of shots)<br>00400425 | <br>every three months<br>00400421  |
| <br>24h every day<br>00400424        | <br>every six months<br>00400422    |
| <br>every month<br>00400420          | <br>every twelve months<br>00400423 |
| ~ as necessary  |  |





**A** JC W-35 Super Lubrifiant - sewing machine oil

**B** Gleitmo 585M - grease








**C** ISOFLEX TOPAS L 32 - grease

| Item    | Maintenance – head                                 | Lubri-cant     | Quantity | Frequency   | Remarks  |
|---------|--|----------------|----------|---|--|
| 1.1-1   | Lever/spring/guide of driver thrust bearing        | B <sup>a</sup> | medium   |    |  |
| 1.1-2   | Toothed belt - zigzag drive                        |                |          |    | Toothed belt must remain clean and free from lubricant; take up slack if necessary |
| 1.1-3   | Steel needle bar/upper housing bearing             | A <sup>b</sup> | medium   |    | on felt  |
|         | Aluminum needle bar (coated)/upper housing bearing | —              | —        | —   |  |
| 1.1-4   | Retainer with pawl/shaft                           | A              | medium   |    |  |
| 1.1-5   | Connecting rod                                     | A              | medium   |    |  |
| 1.1-6 a | Helical gear - teeth                               | B              | medium   |    | on teeth   |
| 1.1-6 b | Helical gear - flat-head lubricating nipple        |                |          |    |  |
| 1.1-7   | Zigzag drive shaft/guide                           | A              | medium   |    |  |
| 1.1-8   | Toothed belt - presser foot drive                  |                |          |    | Toothed belt must remain clean and free from lubricant; take up slack if necessary |
| 1.1-9   | Steel needle bar/presser foot sleeve               | A              | small    |  | on needle bar  |
|         | Aluminum needle bar (coated)/presser foot sleeve   | —              | —        | —   |  |
| 1.1-10  | Presser foot sleeve/steel bearing                  | C <sup>c</sup> | small    |  |  |
| 1.1-11  | Zigzag sleeve/aluminum sleeve                      | C              | small    |  |  |



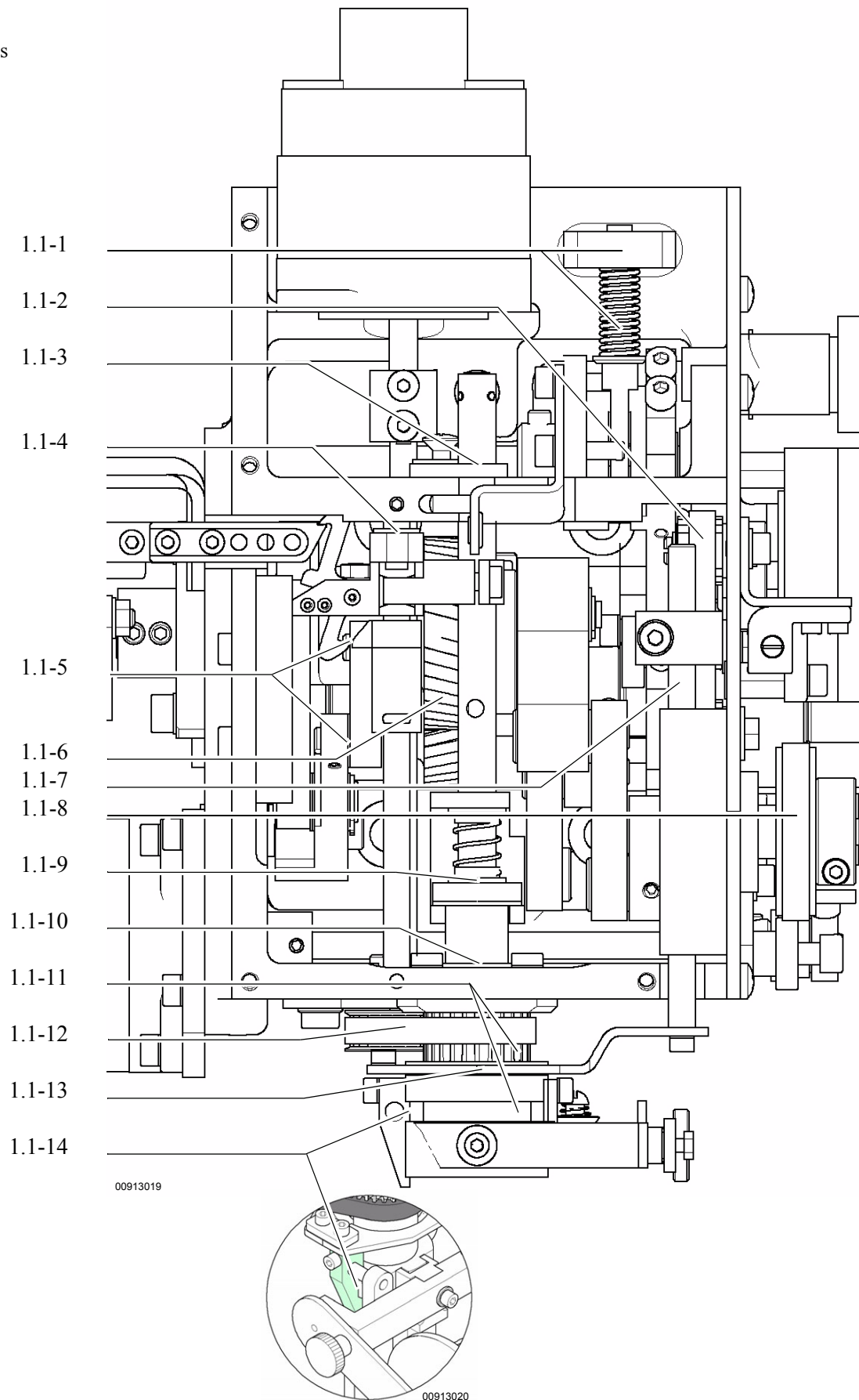
|        |                                   |   |       |   |  |
|--------|-----------------------------------|---|-------|---|--|
| 1.1-12 | Toothed belt - coiling shaft      |   |       |  | Toothed belt must remain clean and free from lubricant; take up slack if necessary |
| 1.1-13 | Zigzag fork halves/zigzag sleeve  | B | small |  |  |
| 1.1-14 | Zigzag sleeve driver              | B | small |  |  |
|        | Clean upper thread guide elements |   |       |  | as necessary   |

a. *Gleitmo 585M* - greaseb. *JC W-35 Super Lubrifiant* - sewing machine oilc. *ISOFLEX TOPAS L 32* - grease

| Item | Maintenance - foot plate/cylinder arm                 | Lubri-cant     | Quantity | Frequency   | Remarks |
|------|---|----------------|----------|---|---------|
|      | Clean rotary hook and surrounding area                |                |          |    |         |
|      | Oil rotary hook                                       | A <sup>a</sup> | small    |    |         |
|      | Clean thread trimmers and bobbin thread monitor       |                |          |    |         |
|      | Grease thread trimmer drive (underneath cylinder arm) | B <sup>b</sup> |          |    |         |
|      | Grease helical gear wheel                             | B              |          |  |         |
|      | Grease drive wheels (foot plate/cylinder arm)         | B              |          |  |         |
|      | Grease connecting rod (foot plate/cylinder arm)       | B              |          |  |         |

a. *JC W-35 Super Lubrifiant* - sewing machine oilb. *Gleitmo 585M* - grease

Figure 1.1:  
W head,  
maintenance points



**DANGER**



00400424



00400424

Figure 1.2:  
Oil rotary hook

## 1.4 General maintenance

Switch off the machine at the main switch and remove the plug from the mains socket.

### 1.4.1 Clean rotary hook and surrounding area

- The rotary hook and surrounding area must be kept clean **at all times**.

### 1.4.2 Oil rotary hook

- Oil the rotary hook every day

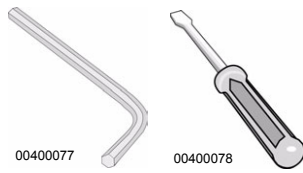


00013004

- Take out the bobbin.
- Free the rotary hook of any loose threads and lint.
- Clean the rotary hook and surrounding area (thread trimmer, thread monitor, picker) with a brush or compressed air.
- Oil the rotary hook with a **small shot of oil** from the spray can supplied with the machine (JC W-35 Super Lubrifiant) or sewing machine oil (1 to 2 drops).

**DANGER**

Do not restart the machine until any covers that have been removed have been properly reinstalled.



## NOTE

Figure 1.3:  
Foot plate,  
thread trimmer area

Blade

Counter blade

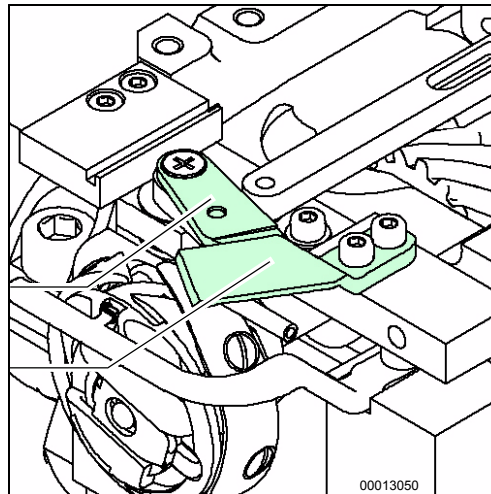
## 1.5 Foot plate

- Detach the stitch plate with a suitable tool.

### 1.5.1 Cleaning thread trimmer

Thread waste that becomes lodged between or beneath the blades of the thread trimmer *Fig. 1.3* can cause the thread trimmer to malfunction. For this reason, remove thread waste at least once a day and more frequently in the event of severe contamination.

To clean the thread trimmer, move the blade to the cleaning position (see *Appendix F Thread trimmer cleaning position*).



### Thread trimmer drive

## NOTE

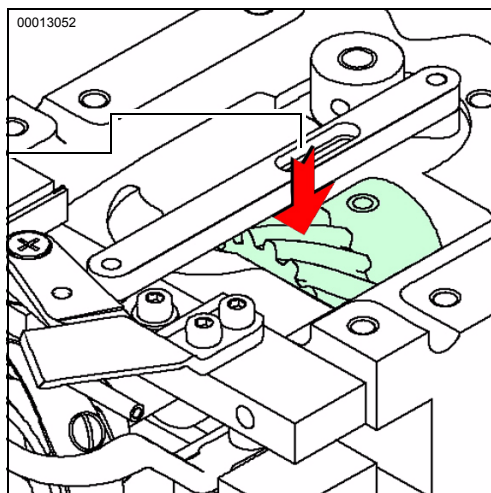
The thread trimmer drive assemblies do not require any maintenance.



Figure 1.4:  
Foot plate,  
greasing drive wheel

Top helical gear wheel

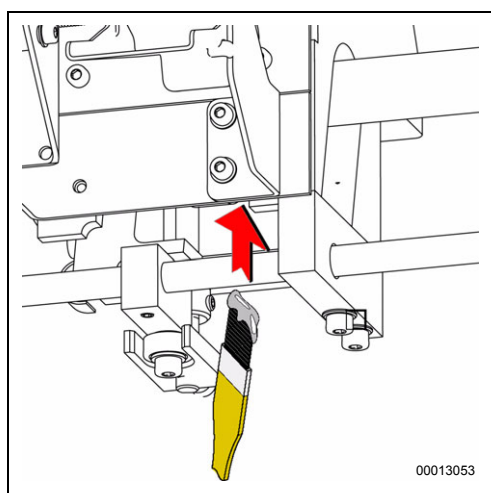
## 1.5.2 Grease drive wheels



- With the stitch plate removed, apply a little grease (Gleitmo 585M) to the upper drive wheel of the foot plate.

Figure 1.5:  
Foot plate,  
greasing drive wheel

Bottom helical gear wheel



- The bottom helical gear wheel is accessible through the open base of the foot plate. Apply grease (Gleitmo 585M) to the gear wheel from underneath with a brush.
- Use the handwheel to rotate the shaft in order to gain access to the teeth at the back as well.

- Make sure that **all the teeth** of the helical gear wheels are adequately coated with grease.

### NOTE

To turn the main/bottom shaft by hand, the brake has to be released. To do this, switch on the machine again. The brake can then be released by means of a control function.

De-energize the machine again after greasing.

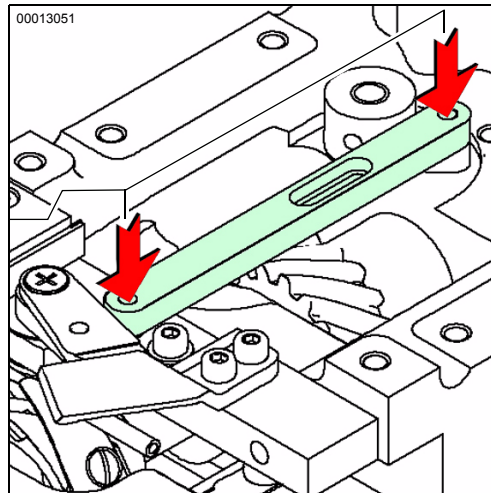


Figure 1.6:  
Foot plate, connecting rod  
lubrication points

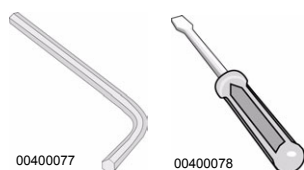
Bearing of thread trimmer  
connecting rod

## 1.5.3 Grease connecting rod

- The lubrication points of the connecting rod are marked by arrows in the drawing below. Grease these points **every six months** with Gleitmo 585M grease.



- Reinstall the stitch plate.
- When installing, align the stitch plate so that the **needle hole is located centrally under the needle**.
- Turn the handwheel to make certain that the active needle enters the middle of the needle hole.



## NOTE

Figure 1.7:  
View of front,  
stitch plate removed

Blade

Counter blade

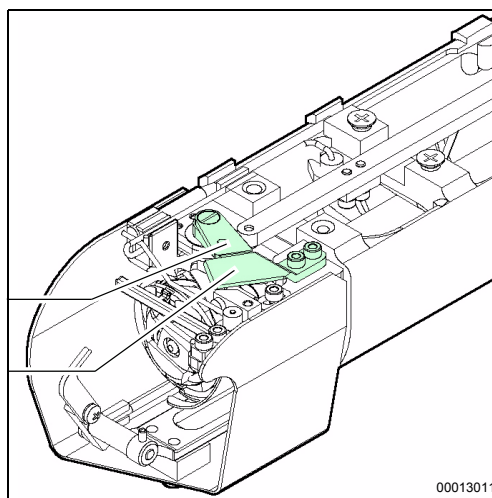
## 1.6 Cylinder arm

- Detach the stitch plate with a suitable tool.

### 1.6.1 Cleaning thread trimmer

Thread waste that becomes lodged between or beneath the blades of the thread trimmer(cf. Fig. 1.3) can cause the thread trimmer to malfunction. For this reason, remove thread waste at least once a day and more frequently in the event of severe contamination.

To clean the thread trimmer, move the blade to the cleaning position (see *Appendix F Thread trimmer cleaning position*).



### Thread trimmer drive

## NOTE

The thread trimmer drive assemblies do not require any maintenance.

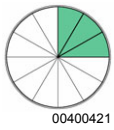
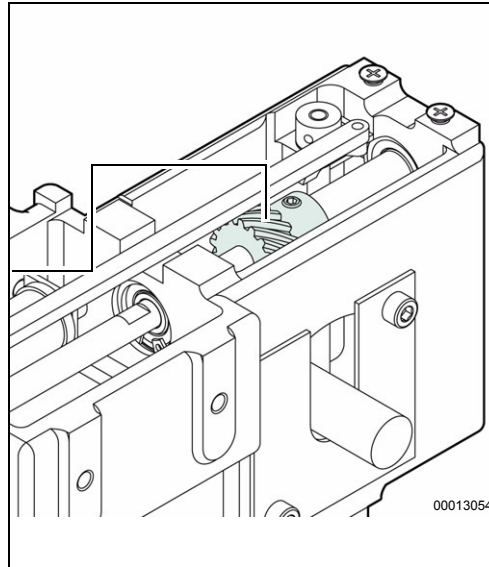


Figure 1.8:  
Cylinder arm, thread  
trimmer drive wheel

Helical gear wheel

## 1.6.2 Grease drive wheel



- With the covers removed, apply a little grease (Gleitmo 585M) to the upper drive wheel of the cylinder arm.
- Use the handwheel to rotate the shaft in order to gain access to the teeth at the back as well.

### NOTE

**To turn the main/bottom shaft by hand, the brake has to be released. To do this, switch on the machine again. The brake can then be released by means of a control function.**

**De-energize the machine again after greasing.**





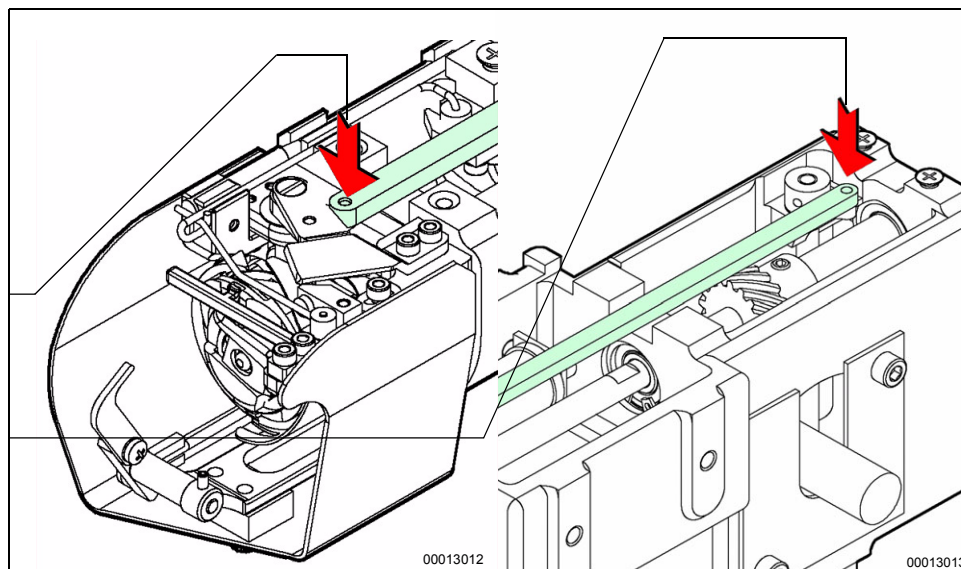
Figure 1.9:  
Cylinder arm,  
connecting rod  
lubrication points

Front bearing of thread  
trimmer connecting rod

Rear bearing of thread  
trimmer connecting rod

## 1.6.3 Greasing, connecting rod

The lubrication points of the connecting rod are marked by arrows in the drawing below. Grease these points **every six months** with Gleitmo 585M grease.

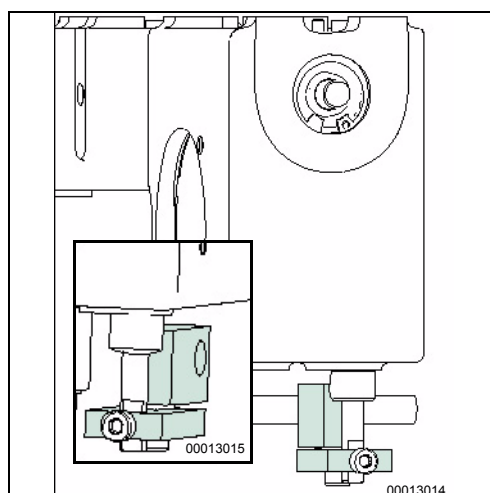


- Reinstall the stitch plate and the two cylinder arm cover plates.
- When installing, align the stitch plate so that the **needle hole is located centrally under the needle**.
- Turn the handwheel to make certain that the active needle enters the middle of the needle hole.



Figure 1.10:  
Thread trimmer drive  
lubrication points  
(view of  
cylinder arm from the rear)

## 1.6.4 Thread trimmer drive (underneath cylinder arm)



## 1.7 W head

### 1.7.1 Greasing driver thrust bearing



The maintenance point is marked on the following drawing *Fig. 1.11* (also see *Fig. 1.1*). Apply grease to the lever, spring and guide of the driver thrust bearing **every six months**. The interval must be shortened accordingly in the case of two or three-shift duty cycles.

**DANGER**

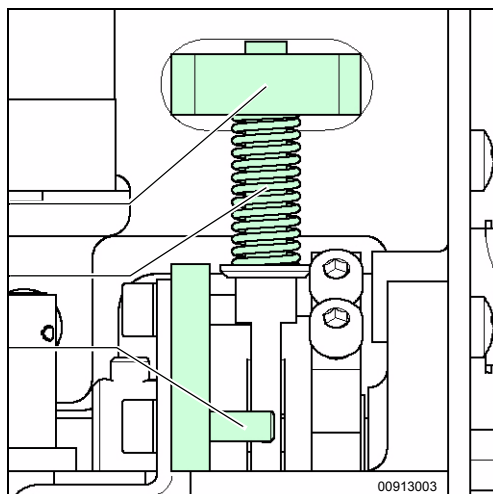
**Switch off the machine at the main switch and remove the plug from the mains socket.**

Figure 1.11:  
W head,  
driver thrust bearing

1.11-1

1.11-2

1.11-3



- Take off embroidery head cover.
- Grease guide (1.11-1) in the vicinity of the guide bar. (Gleitmo 585M).
- Grease spring (1.11-2) (Gleitmo 585M).
- Grease lever in the vicinity of bottom bearing (1.11-3) (Gleitmo 585M).
- Reinstall cover.

**DANGER**

**Do not restart the machine until all covers have been properly re-installed.**



**DANGER**

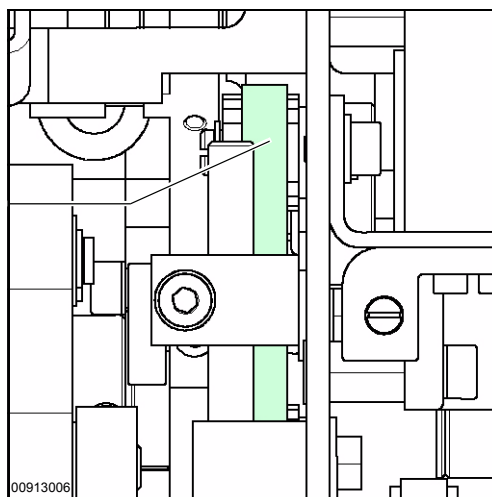
Figure 1.12:  
W-head,  
toothed belt,  
(zigzag drive)

1.12-1

## 1.7.2 Checking toothed belt (zigzag drive)

The maintenance point is marked on the following drawing *Fig. 1.12* (also see *Fig. 1.1*). Check the condition of the toothed belt **every month**. The interval must be shortened accordingly in the case of two or three-shift duty cycles.

**Switch off the machine at the main switch and remove the plug from the mains socket.**



- Take off embroidery head cover.
- Check the tension of the toothed belt and extent of contamination (*1.12-1*). The toothed belt must be clean and free from lubricant. Clean toothed belt and take up slack if necessary.
- Reinstall cover.

**DANGER**

**Do not restart the machine until all covers have been properly re-installed.**



## 1.7.3 Oiling needle bar (top bearing)

The maintenance point is marked on the following drawing *Fig. 1.13* (also see *Fig. 1.1*). Apply oil to the felt **every month** if the embroidery head is equipped with a steel needle bar. The interval must be shortened accordingly in the case of two or three-shift duty cycles.

An embroidery head with an aluminum needle bar does not require any maintenance.

**Only with embroidery heads equipped with steel needle bar:**

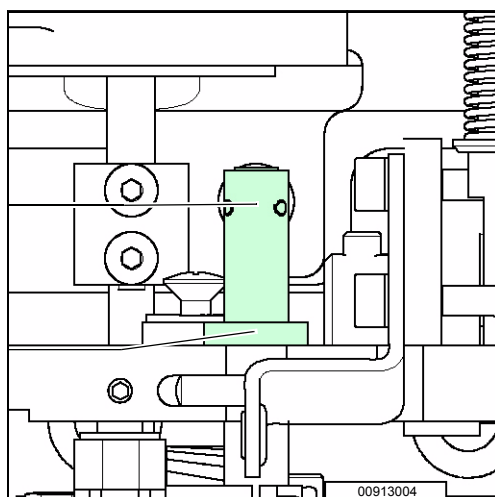
**DANGER**

**Switch off the machine at the main switch and remove the plug from the mains socket.**

Figure 1.13:  
W head,  
steel needle bar,  
top bearing

1.13-1

1.13-2



- Take off embroidery head cover.
- Saturate felt ring (1.13-2) on needle bar (1.13-1) with oil (JC W-35 Super Lubrifiant).
- Reinstall cover.

**DANGER**

**Do not restart the machine until all covers have been properly re-installed.**



**DANGER**

Figure 1.14:  
W head,  
retainer with pawl

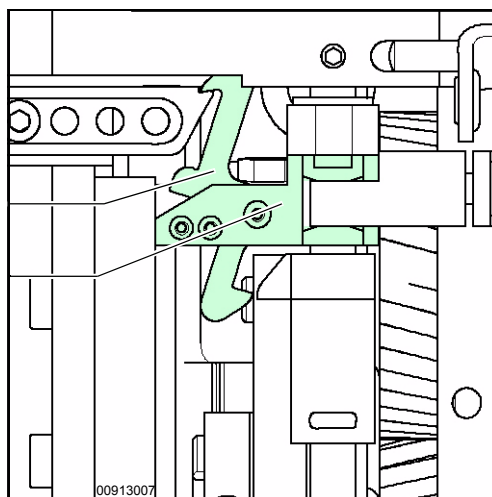
1.14-1

1.14-2

## 1.7.4 Oiling retainer with pawl

The maintenance point is marked on the following drawing *Fig. 1.14* (also see *Fig. 1.1*). Apply oil to the retainer with pawl **every three months**. The interval must be shortened accordingly in the case of two or three-shift duty cycles.

**Switch off the machine at the main switch and remove the plug from the mains socket.**



- Take off embroidery head cover.
- Oil the moving parts of retainer (1.14-2) with pawl (1.14-1) (JC W-35 Super Lubrifiant).
- Reinstall cover.

**DANGER**

**Do not restart the machine until all covers have been properly re-installed.**



## 1.7.5 Oiling connecting rod

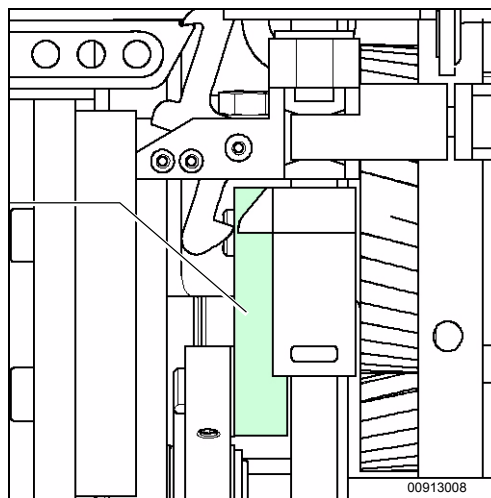
The maintenance point is marked on the following drawing *Fig. 1.15* (also see *Fig. 1.1*). Apply oil to connecting rod **every six months**. The interval must be shortened accordingly in the case of two or three-shift duty cycles.

**DANGER**

**Switch off the machine at the main switch and remove the plug from the mains socket.**

Figure 1.15:  
W head,  
connecting rod

1.15-1



- Take off embroidery head cover.
- Oil both connecting rod bearings (*1.15-1*) (JC W-35 Super Lubri-fiant).
- Reinstall cover.

**DANGER**

**Do not restart the machine until all covers have been properly re-installed.**



**DANGER**

Figure 1.16:  
W head,  
helical gear wheel

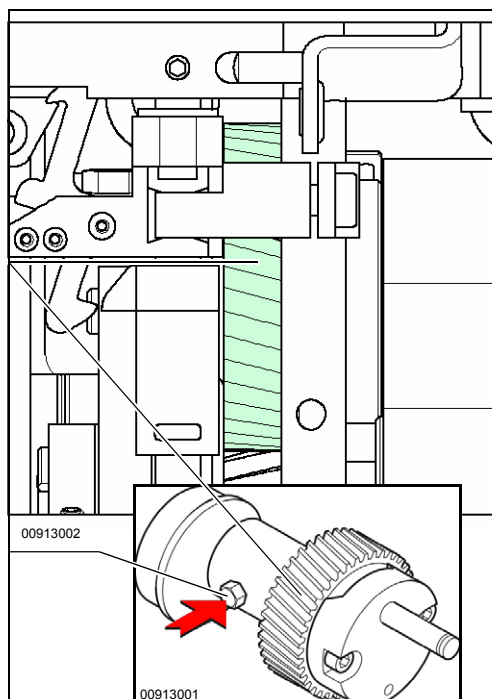
1.16-1

1.16-2

## 1.7.6 Greasing helical gear

The maintenance point is marked on the following drawing *Fig. 1.16* (also see *Fig. 1.1*). Apply grease to the helical gear at the lubricating nipple **every six months** and grease the teeth **every twelve months**. The interval must be shortened accordingly in the case of two or three-shift duty cycles.

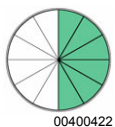
**Switch off the machine at the main switch and remove the plug from the mains socket.**



- Take off embroidery head cover.
- Apply grease to helical gear (1.16-1) at lubricating nipple (1.16-2) with grease gun (Gleitmo 585M).
- Apply grease to teeth of helical gear with a brush (Gleitmo 585M).
- Reinstall cover.

**DANGER**

**Do not restart the machine until all covers have been properly re-installed.**



## 1.7.7 Oiling zigzag drive shaft

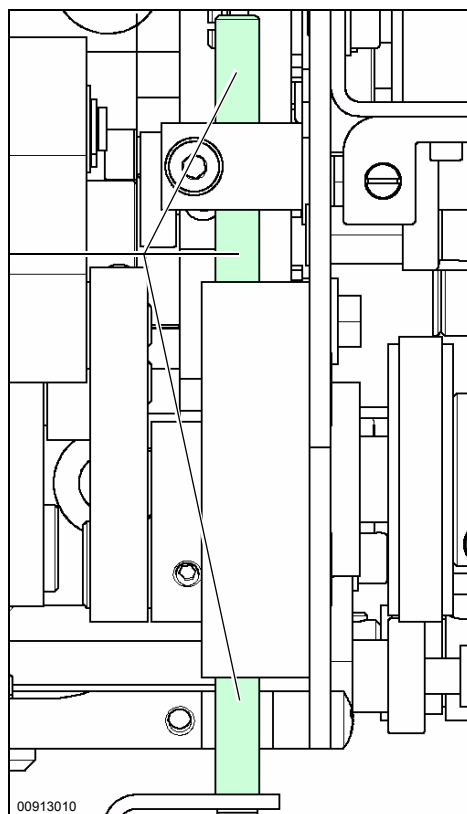
The maintenance point is marked on the following drawing *Fig. 1.17* (also see *Fig. 1.1*). Apply oil to the zigzag drive shaft **every six months**. The interval must be shortened accordingly in the case of two or three-shift duty cycles.

**DANGER**

**Switch off the machine at the main switch and remove the plug from the mains socket.**

Figure 1.17:  
W head,  
zigzag drive shaft

1.17-1



- Take off embroidery head cover.
- Oil visible parts of zigzag drive shaft (*1.17-1*) (JC W-35 Super Lubrifiant).
- Reinstall cover.

**DANGER**

**Do not restart the machine until all covers have been properly re-installed.**





**DANGER**

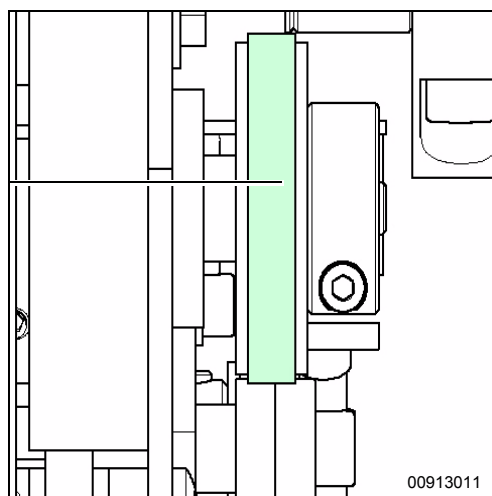
Figure 1.18:  
W head,  
toothed belt,  
presser foot drive

1.18-1

## 1.7.8 Checking toothed belt (presser foot drive)

The maintenance point is marked on the following drawing *Fig. 1.18* (also see *Fig. 1.1*). Check the condition of the toothed belt **every month**. The interval must be shortened accordingly in the case of two or three-shift duty cycles.

**Switch off the machine at the main switch and remove the plug from the mains socket.**



The toothed belt is located on the right, outside the embroidery head.

- Check the tension of the toothed belt and extent of contamination (*1.18-1*). The toothed belt must be clean and free from lubricant. Clean toothed belt and take up slack if necessary.

**NOTE**

**It is not necessary to remove protective covers when carrying out this maintenance procedure. To make this task easier and monitor the work, use a mirror placed flat on the work table.**

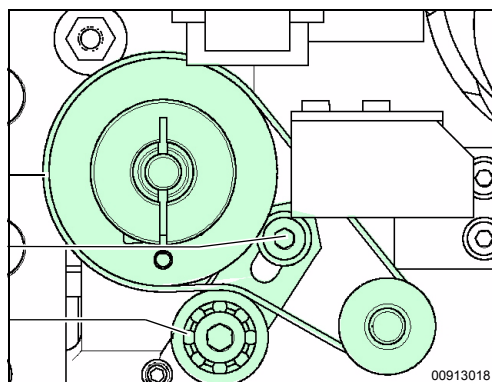
## Adjusting toothed belt tension

Figure 1.19:  
W head,  
adjusting toothed belt  
tension

1.19-1

1.19-2

1.19-3



If the belt tension is too slack (*1.19-1*):

- Slacken off screw (*1.19-2*).
- Push belt adjuster (*1.19-3*) upwards.
- Tighten screw (*1.19-2*).

**DANGER**

**Do not restart the machine until all covers have been properly re-installed.**



## 1.7.9 Oiling needle bar (presser foot sleeve)

The maintenance point is marked on the following drawing *Fig. 1.20* (also see *Fig. 1.1*). Apply oil to the needle bar **every month** if the embroidery head is equipped with a steel needle bar. The interval must be shortened accordingly in the case of two or three-shift duty cycles.

An embroidery head with an aluminum needle bar does not require any maintenance.

**Only with embroidery heads equipped with steel needle bar:**

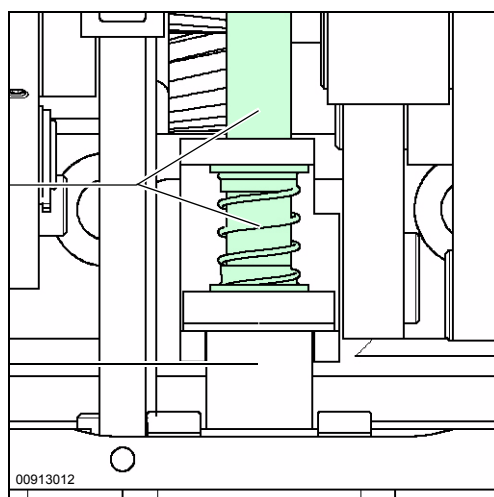
**DANGER**

**Switch off the machine at the main switch and remove the plug from the mains socket.**

Figure 1.20:  
W head,  
steel needle bar,  
presser foot sleeve

1.20-1

1.20-2



- Take off embroidery head cover.
- Lubricate needle bar (1.20-1) above presser foot sleeve (1.20-2) (JC W-35 Super Lubrifiant).
- Reinstall cover.

**DANGER**

**Do not restart the machine until all covers have been properly re-installed.**



**DANGER**

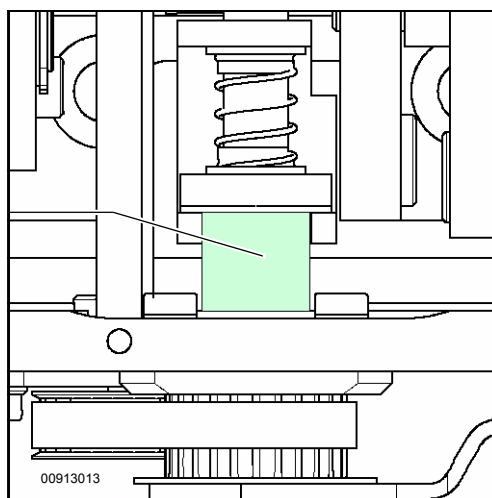
Figure 1.21:  
W head,  
presser foot sleeve,  
steel bearing

1.21-1

## 1.7.10 Greasing presser foot sleeve (steel bearing)

The maintenance point is marked on the following drawing *Fig. 1.21* (also see *Fig. 1.1*). Grease the presser foot sleeve **once every six months**. The interval must be shortened accordingly in the case of two or three-shift duty cycles.

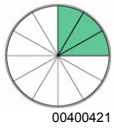
**Switch off the machine at the main switch and remove the plug from the mains socket.**



- Take off embroidery head cover.
- Apply grease to presser foot sleeve (*1.21-1*) above the steel bearing (ISOFLEX TOPAS L 32).
- Reinstall cover.

**DANGER**

**Do not restart the machine until all covers have been properly re-installed.**



## 1.7.11 Grease zigzag sleeve (aluminum sleeve)

The maintenance point is marked on the following drawing *Fig. 1.22* (also see *Fig. 1.1*). Grease the zigzag sleeve **every three months**. The interval must be shortened accordingly in the case of two or three-shift duty cycles.

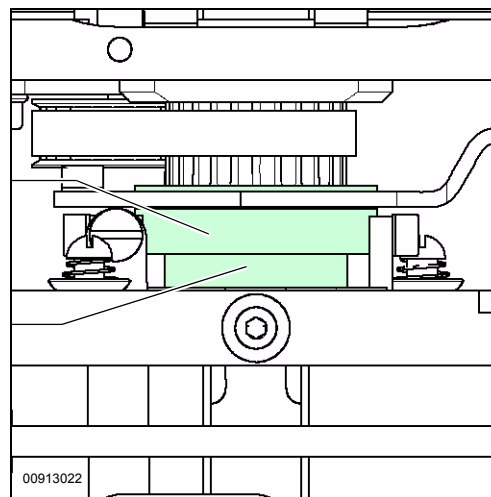
**DANGER**

**Switch off the machine at the main switch and remove the plug from the mains socket.**

Figure 1.22:  
W head,  
zigzag sleeve,  
aluminum sleeve

1.22-1

1.22-2



- Apply grease to aluminum sleeve (1.22-1) in the vicinity of zigzag sleeve (1.22-2) (ISOFLX TOPAS L 32).

**DANGER**

**Do not restart the machine until all covers have been properly re-installed.**



**DANGER**

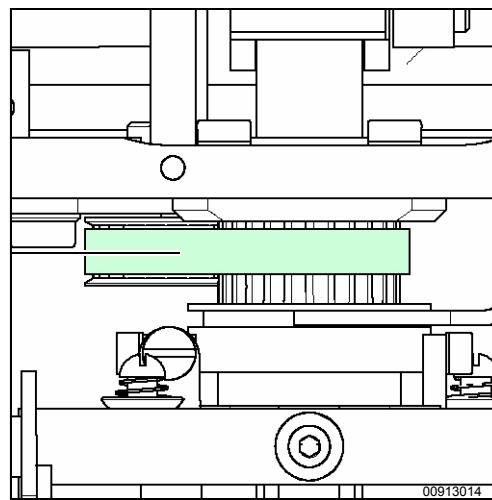
Figure 1.23:  
W head,  
toothed belt, coiling shaft

1.23-1

## 1.7.12 Checking toothed belt (coiling shaft)

The maintenance point is marked on the following drawing *Fig. 1.23* (also see *Fig. 1.1*). Check the condition of the toothed belt **every month**. The interval must be shortened accordingly in the case of two or three-shift duty cycles.

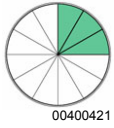
**Switch off the machine at the main switch and remove the plug from the mains socket.**



- Check the tension of the toothed belt and extent of contamination (*1.23-1*). The toothed belt must be clean and free from lubricant. Clean toothed belt and take up slack if necessary.

**DANGER**

**Do not restart the machine until all covers have been properly re-installed.**



## 1.7.13 Greasing zigzag fork halves (zigzag sleeve)

The maintenance point is marked on the following drawing *Fig. 1.24* (also see *Fig. 1.1*). Grease the zigzag fork halves **every three months**. The interval must be shortened accordingly in the case of two or three-shift duty cycles.

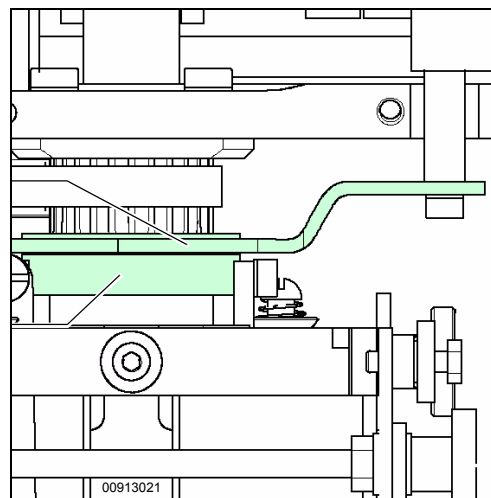
**DANGER**

**Switch off the machine at the main switch and remove the plug from the mains socket.**

Figure 1.24:  
W head,  
zigzag fork halves,  
zigzag sleeve

1.24-1

1.24-2



- Apply grease to zigzag fork halves (1.24-1) in the vicinity of the groove in zigzag sleeve (1.24-2) (Gleitmo 585M).

**DANGER**

**Do not restart the machine until all covers have been properly re-installed.**



**DANGER**

Figure 1.25:  
W head,  
zigzag sleeve driver

1.25-1

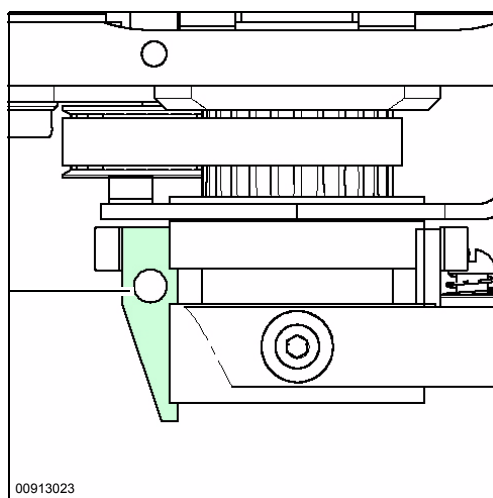
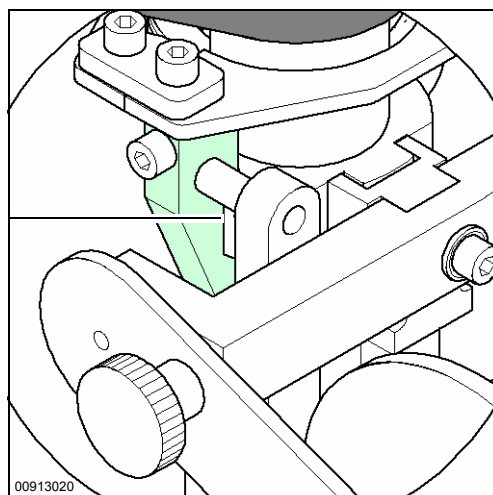


Figure 1.26:  
W head,  
zigzag sleeve driver

1.26-1



- Grease driver (1.25-1) in the vicinity of the guide groove (1.26-1) (Gleitmo 585M).

**DANGER**

**Do not restart the machine until all covers have been properly re-installed.**

## 1.7.15 Cleaning thread guide (upper thread)

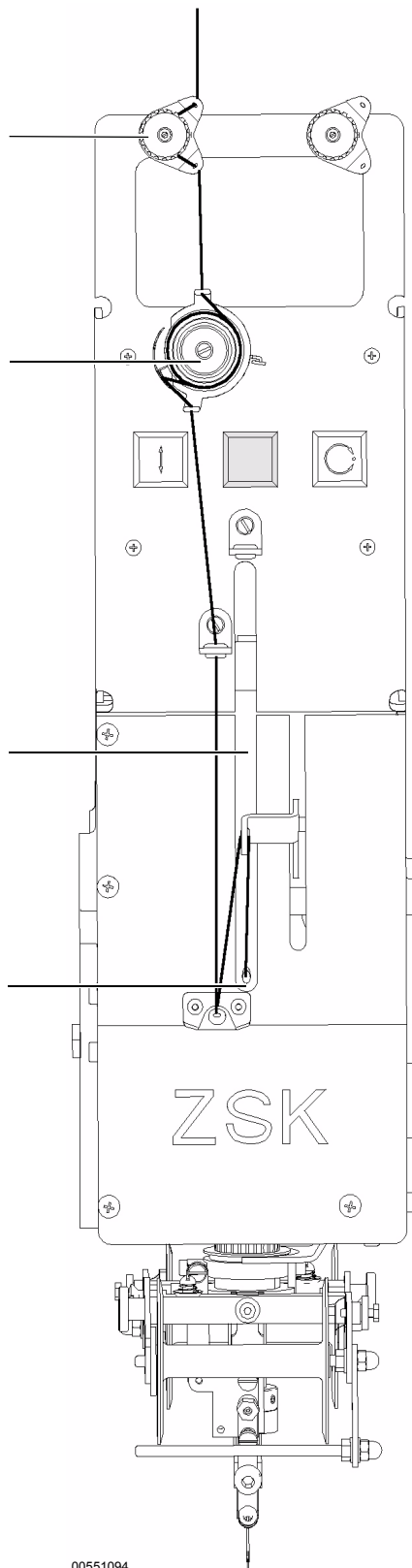
Figure 1.27:  
W head,  
threading upper thread

Pretension regulator  
(holding tension)

Main tension regulator  
(bobbin tension)

Needle bar

Hole in front of needle bar



00551094

Dust and lint gradually collect in the holes of the upper thread guide elements and at the thread tension devices (especially the pretension regulators). It is therefore necessary to clean the upper thread guide **regularly**.

- In the event of **severe** obstruction, unthread the upper threads.
- Clean the upper thread guide elements with a small brush or compressed air.



## NOTE

### 1.8 Troubleshooting

The following tables are designed to help you rectify faults caused by incorrect operation or minor damage.

If faults occur frequently, note whether they are occurring at the same needle. If customer service is required, this information is important to ensure a quick remedy.

#### 1.8.1 W head, general

| Fault         | Cause  | Remedy  |
|---------------|--|---|
| Z axis offset | Toothed belt too loose   | <ul style="list-style-type: none"> <li>Tighten toothed belt</li> </ul>                              |
|               | Movement of rotating parts (in Z axis) impeded by incorrect screws | <ul style="list-style-type: none"> <li>Use screws with correct length for bobbin holders</li> </ul> |
|               | Toothed belt coated with oil or defective                          | <ul style="list-style-type: none"> <li>Clean or exchange toothed belt</li> </ul>                    |

#### 1.8.2 Zigzag stitch type

| Fault                        | Cause                                    | Remedy   |
|------------------------------|--|--|
| Untidy work (zigzag)         | Irregular sequence of stitches in design | <ul style="list-style-type: none"> <li>Recalculate stitch length in the editor</li> </ul>                    |
|                              | Incorrect zigzag foot                    | <ul style="list-style-type: none"> <li>Change zigzag foot</li> </ul>   |
|                              | Effect yarn poorly wound on bobbin       | <ul style="list-style-type: none"> <li>Wind on effect yarn/tape according to yarn/tape properties</li> </ul> |
| Zigzag not on center of tape | Zigzag foot not engaged                  | <ul style="list-style-type: none"> <li>Engage foot</li> </ul>  |
|                              | Incorrect or irregular stitch length     | <ul style="list-style-type: none"> <li>Recalculate stitch length in the editor</li> </ul>                    |
|                              | Unsymmetrical pivoting of zigzag foot    | <ul style="list-style-type: none"> <li>Properly adjust zigzag drive clamp in the head</li> </ul>             |
| Stitches missing (zigzag)    | Presser foot height incorrectly set      | <ul style="list-style-type: none"> <li>Set presser foot height in the parameters dialog</li> </ul>           |

## 1.8.3 Cord/tape stitch type

| Fault                          | Cause                            | Remedy  |
|--------------------------------|----------------------------------|---|
| <b>Tape is not embroidered</b> | Incorrect tape foot              | <ul style="list-style-type: none"> <li>Change tape foot</li> </ul>                                  |
|                                | Incorrect stitch length          | <ul style="list-style-type: none"> <li>Recalculate stitch length in the editor</li> </ul>           |
|                                | Tape foot height incorrectly set | <ul style="list-style-type: none"> <li>Set tape foot height electrically or mechanically</li> </ul> |

## 1.8.4 Coiling stitch type

| Fault                    | Cause                                      | Remedy   |
|--------------------------|--|--|
| <b>Irregular coiling</b> | Irregular stitch lengths                   | <ul style="list-style-type: none"> <li>Recalculate stitch length in the editor</li> </ul>                    |
|                          |  | <ul style="list-style-type: none"> <li>Modify parameters to suit materials</li> </ul>                        |
|                          |  | <ul style="list-style-type: none"> <li>Adjust presser foot height / coiling ratio</li> </ul>                 |
| <b>Coiling too wide</b>  | Coiling / feed thread too thick            | <ul style="list-style-type: none"> <li>Modify parameters to suit materials</li> </ul>                        |
|                          | Coiling foot set too low                   | <ul style="list-style-type: none"> <li>Adjust presser foot height in parameters to suit materials</li> </ul> |
|                          | Incorrect stitch length                    | <ul style="list-style-type: none"> <li>Recalculate stitch length in the editor</li> </ul>                    |
|                          |  | <ul style="list-style-type: none"> <li>Modify parameters to suit materials</li> </ul>                        |
|                          | Incorrect coiling ratio                    | <ul style="list-style-type: none"> <li>Modify parameters to suit materials</li> </ul>                        |
|                          | Incorrect tension of coiling / feed thread | <ul style="list-style-type: none"> <li>Recalculate stitch length in the editor</li> </ul>                    |
|                          |  | <ul style="list-style-type: none"> <li>Modify parameters to suit materials</li> </ul>                        |

|  |  |   |
|--|--|---|
| <p><b>Inconsistent appearance of mirrored design parts</b></p> | <p>Design is mirrored, but coiling direction is not reversed</p> | <ul style="list-style-type: none"> <li>• Change coiling direction</li> </ul> <p><u>Caution:</u> The effect yarn behaves differently according to the coiling direction (yarn twist direction, S or Z-twist)</p> |
|--|--|---|



# Index

## A

|                                 |        |
|---------------------------------|--------|
| Adjusting toothed belt tension  | 1 - 21 |
| Adjusting, toothed belt tension | 1 - 21 |

## B

|                          |        |
|--------------------------|--------|
| Bearings, connecting rod | 1 - 18 |
| Belt adjuster            | 1 - 21 |
| Bobbin tension           | 1 - 28 |
| Bobbin thread bobbin     | 1 - 7  |
| Brake, releasing         | 1 - 9  |
|                          | 1 - 12 |
| Brush                    | 1 - 28 |

## C

|  |        |
|--|--------|
| Checking, toothed belt                 | 1 - 21 |
|  | 1 - 25 |
| Circulation system lubricating oil     | 1 - 2  |
| Cleaning position, thread trimmer      | 1 - 11 |
| Cleaning thread trimmer                | 1 - 8  |
|  | 1 - 11 |
| Cleaning work                          | 1 - 1  |
| Cleaning, rotary hook/surrounding area | 1 - 7  |
| Cleaning, thread trimmer               | 1 - 8  |
|  | 1 - 11 |
| Coiling stitch type, troubleshooting   | 1 - 30 |
| Compressed air                         | 1 - 7  |
|  | 1 - 28 |
| Connecting rod                         | 1 - 10 |
|  | 1 - 18 |
| Connecting rod, front                  | 1 - 13 |
| Connecting rod, rear                   | 1 - 13 |
| Cord/tape stitch type, troubleshooting | 1 - 30 |
| Cylinder arm, maintenance              | 1 - 11 |

## D

|                       |        |
|-----------------------|--------|
| Driver thrust bearing | 1 - 14 |
|-----------------------|--------|

## E

|                                       |        |
|---------------------------------------|--------|
| Embroidery head (W head), maintenance | 1 - 14 |
|---------------------------------------|--------|

## F

|                         |        |
|-------------------------|--------|
| Felt ring, needle bar   | 1 - 16 |
| Foot plate, maintenance | 1 - 8  |

## G

|                            |        |
|----------------------------|--------|
| Grease connecting rod      | 1 - 10 |
| Grease drive wheel         | 1 - 12 |
| Grease drive wheels        | 1 - 9  |
| Grease presser foot sleeve | 1 - 23 |
| Grease, Gleitmo 585M       | 1 - 1  |
| Grease, ISOFLEX TOPAS L 32 | 1 - 3  |

|                                 |        |
|---------------------------------|--------|
| Greasing driver thrust bearing  | 1 - 14 |
| Greasing helical gear           | 1 - 19 |
| Greasing, connecting rod        | 1 - 10 |
|                                 | 1 - 13 |
| Greasing, drive wheel           | 1 - 12 |
| Greasing, drive wheels          | 1 - 9  |
| Greasing, driver thrust bearing | 1 - 14 |
| Greasing, helical gear          | 1 - 19 |
| Greasing, presser foot sleeve   | 1 - 23 |
| Greasing, teeth                 | 1 - 19 |
| Greasing, zigzag fork           | 1 - 26 |

## H

|                            |        |
|----------------------------|--------|
| Helical gear wheel         | 1 - 12 |
|                            | 1 - 19 |
| Helical gear wheel, bottom | 1 - 9  |
| Helical gear wheel, top    | 1 - 9  |

## L

|  |        |
|--|--------|
| Lubricant                              | 1 - 3  |
|  | 1 - 5  |
| Lubricants                             | 1 - 1  |
| Lubricants, alternative                | 1 - 1  |
| Lubricating grease                     | 1 - 2  |
| Lubricating nipple, helical gear wheel | 1 - 19 |

## M

|                                      |        |
|--------------------------------------|--------|
| Main tension regulator               | 1 - 28 |
| Maintenance intervals                | 1 - 2  |
|                                      | 1 - 3  |
|                                      | 1 - 5  |
| Maintenance intervals, overview      | 1 - 2  |
| Maintenance points, graphic overview | 1 - 6  |
| Maintenance table, key               | 1 - 3  |
| Maintenance work                     | 1 - 1  |
| Maintenance work, general            | 1 - 7  |
| Maintenance, foot plate/cylinder arm | 1 - 5  |
| Maintenance, head                    | 1 - 3  |
| Maintenance, overview                | 1 - 2  |
| maintenance-free                     | 1 - 3  |
|                                      | 1 - 8  |
|                                      | 1 - 11 |
|                                      | 1 - 16 |
|                                      | 1 - 22 |

## N

|                       |        |
|-----------------------|--------|
| Needle bar            | 1 - 16 |
|                       | 1 - 22 |
|                       | 1 - 28 |
| Needle bar, felt ring | 1 - 16 |
| Needle bar, oiling    | 1 - 16 |
|                       | 1 - 22 |

|   |        |  |        |
|---|--------|--|--------|
| Needle bar, presser foot sleeve             | 1 - 22 | Troubleshooting, W head general                | 1 - 29 |
| <b>O</b>                                    |        | Troubleshooting, Z axis offset                 | 1 - 29 |
| Oil needle bar                              | 1 - 16 | Troubleshooting, zigzag stitch type            | 1 - 29 |
|   | 1 - 22 | Troubleshooting, zigzag, not on center of tape | 1 - 29 |
| Oil rotary hook                             | 1 - 7  | Troubleshooting, zigzag, stitches missing      | 1 - 29 |
| Oil, JC W 35 Super Lubrifiant               | 1 - 1  | Troubleshooting, zigzag, untidy work           | 1 - 29 |
| Oiling connecting rod                       | 1 - 18 | <b>U</b>                                       |        |
| Oiling retainer with pawl                   | 1 - 17 | Upper thread guide elements                    | 1 - 28 |
| Oiling zigzag drive shaft                   | 1 - 20 | <b>Z</b>                                       |        |
| Oiling, connecting rod                      | 1 - 18 | Zigzag drive shaft                             | 1 - 20 |
| Oiling, retainer with pawl                  | 1 - 17 | Zigzag fork                                    | 1 - 26 |
| Oiling, rotary hook                         | 1 - 7  | Zigzag fork, greasing                          | 1 - 26 |
| Oiling, zigzag drive shaft                  | 1 - 20 | Zigzag sleeve driver                           | 1 - 27 |
| Oiling, zigzag sleeve driver                | 1 - 27 | Zigzag stitch type, troubleshooting            | 1 - 29 |
| <b>P</b>                                    |        |  |        |
| Picker                                      | 1 - 7  |  |        |
| Presser foot sleeve                         | 1 - 23 |  |        |
| Pre-tension                                 | 1 - 28 |  |        |
| <b>R</b>                                    |        |  |        |
| Retainer with pawl                          | 1 - 17 |  |        |
| Rotary hook/surrounding area, cleaning      | 1 - 7  |  |        |
| <b>S</b>                                    |        |  |        |
| Safety, for your                            | 1 - 1  |  |        |
| Sewing machine oil                          | 1 - 7  |  |        |
| Steel bearing                               | 1 - 23 |  |        |
| Stitch plate, alignment                     | 1 - 10 |  |        |
|   | 1 - 13 |  |        |
| Substitute lubricants                       | 1 - 2  |  |        |
| <b>T</b>                                    |        |  |        |
| Tension regulator                           | 1 - 28 |  |        |
| Thread guide, cleaning, (upper thread)      | 1 - 28 |  |        |
| Thread monitor                              | 1 - 7  |  |        |
| Thread tension                              | 1 - 28 |  |        |
| Thread trimmer                              | 1 - 7  |  |        |
| Thread trimmer drive                        | 1 - 11 |  |        |
| Thread trimmer, cleaning position           | 1 - 8  |  |        |
| Thread waste                                | 1 - 8  |  |        |
|   | 1 - 11 |  |        |
| Toothed belt                                | 1 - 15 |  |        |
| Toothed belt tension                        | 1 - 21 |  |        |
|   | 1 - 25 |  |        |
| Toothed belt, checking                      | 1 - 21 |  |        |
|   | 1 - 25 |  |        |
| Toothed belt, coiling shaft                 | 1 - 25 |  |        |
| Toothed belt, presser foot drive            | 1 - 21 |  |        |
| Troubleshooting                             | 1 - 29 |  |        |
| Troubleshooting, coiling stitch type        | 1 - 30 |  |        |
| Troubleshooting, coiling, coiling too wide  | 1 - 30 |  |        |
| Troubleshooting, coiling, irregular coiling | 1 - 30 |  |        |
| Troubleshooting, cord/tape                  | 1 - 30 |  |        |
| Troubleshooting, cord/tape stitch type      | 1 - 30 |  |        |



