For the professional user

Mechanic‘s Instructions

Für den professionellen Anwender

Mechanikeranleitung

Class: **VTD410EV**
Klasse:

Model: **1**
Ausführung:

Machine number:
Maschinen-Nr.:

Dated:
Stand:

STROBEL
Spezialmaschinen GmbH

The sign of quality

You find the Strobel trademark on every Strobel machine leaving our works. And with good reason. This symbol is a guaranteen of the high quality of our products. Quality which creates trust – trust in our technology, our service and, not least of all, in our good name.

Im Zeichen der Qualität

Sie finden die Strobel-Schutzmarke auf jeder Strobel-Maschine, die unser Werk verlässt. Und das aus gutem Grund. Denn dieses Zeichen garantiert Ihnen die hohe Qualität unserer Produkte. Qualität, die Vertrauen schafft – in unsere Technik, unseren Service und nicht zuletzt in unseren guten Namen.

A decision with future

Strobel clients know that they can expect a particularly high standard of performance from our company and our machines. Now you have settled for one of our products. For us this is a source of encouragement and of obligation to Justify your trust.

If you wish to profit from the performance and efficiency of your Strobel machine as long as possible, exact handling and thorough care is necessary. For this reason we kindly request that you read the operating instructions closely. It provides all the information you need for trouble free operation.

And if you do happen to need a spare part the enclosed spare parts list gives a complete overview. It is clearly classified according to components so that you can find the required part quickly and easily. In order to avoid errors we request you to quote machine class, machine number and part number completely on your spare part order.

We wish you lots of success in your work with your new Strobel machine.

STROBEL
Spezialmaschinen GmbH

STROBEL

Mechanics instruction
STROBEL-Class VTD410EV

Contents

Appendix

Circuit diagrams

Connecting the sewing machine:

259.00.46	Pneumatic circuit diagram Cl. VTD410EV
259.10.46	Pneumatic construction circuit diagram Cl. VTD410EV

1 General notes on safety

The non-compliance with the following notes on safety can lead to bodily injuries or to damages of the machine.

1. The machine must only be operated by persons familiar with the relevant operating instructions and who have been instructed accordingly.
2. Before commissioning also read the notes on safety and the operating instructions of the sewing drive manufacturer.
3. The machine must only be operated according to its designation and not without the appropriate guards; all explicit safety regulations must also be observed.
4. For threading, for changing the reels, for exchanging sewing tools such as needles, grippers, stitch plate, transport devices, if necessary cutter and cutting block, for cleaning, when leaving the workplace and for maintenance work, switch off main switch or pull mains plug. With a mechanically operated coupling motor without activation lock, wait until the motor has stopped.
5. General maintenance work must only be carried out by appropriately instructed persons in accordance with the operating instructions.
6. Repair, modification and maintenance work must only be carried out by qualified staff or by appropriately instructed persons.
7. During maintenance and repair work at pneumatic devices, the machine must be disconnected from the pneumatic supply network. Exceptions are only admissible during adjusting work and function test by appropriately instructed qualified staff.
8. Work at the electrical equipment must only be carried out by qualified staff.
9. Work at parts and devices under voltage is not allowed. Exceptions are regulated by the regulation EN50110 (DIN VDE0105).
10. Modification or alteration at the machine must only be undertaken under consideration of all explicit safety regulations.
11. Only spare parts released by us for use are to be used during repairs.
12. The commissioning of the upper part is prohibited until it has been determined that the entire sewing unit complies with the regulations of the EC guidelines.

13. Warning notes in the operating instructions of the machine, which point out special points of danger, are marked at the appropriate positions with the safety symbol.

Warning notes in the operating instructions of the machine which point out special dangers of injury for operating or qualified staff, are marked at the appropriate positions with the symbol

it is essential that you observe and follow these notes as well as the generally valid safety regulations.

2 General

In addition to the operating instructions distributed with each machine, this manual is intended to be some help for dismantling, assembling, setting, converting and repairing the single and two thread overseam machines.

2.1 Operating instructions

Any person involved in the installation, operation, maintenance and repair of the machine must have read and understood the operating instructions and mainly the safety instructions before starting the machine.

2.2 Class identification, serial number and orientation of the machine

The operating side of the machine is the basis for descriptions referring to sides. The class identification (type) as well as serial and model number (after the dash) is located below the left hand wheel.

These data are also shown on the front page of the operation instructions.

2.3 Range of application and intended use

High capacity insoling machine for attaching the insole to uppers made of Kevlar, leather and textile materials up to a total thickness of 11 mm, with differential feed for gathering low extra fullness at the ball part and with shaft coupling for the front cup drive.

2.4 Technical data

Speed:	max. mechanically admissible	1800 min^{-1}
	Recommended rated speed	1500 min^{-1}
Min. Motor power		550 W
Machine/pulley diameter		dw 80
V-belt profile		10 x 6 mm
Stitch length		3 – 8 mm
Kind of stitch		single thread overseam
Needle system		134 LR
Needle size		120 - 180
Recommended thread		twisted polyester filament
Thread size		20/3, 30, 40
Stitch type		501
Kind of feed		rear and front cup drive
Pneumatic connection		10 bar
Working pressure		5 – 6 bar
Air consumption – average value (SA = special design):		0.38 l
Required space		0.7 x 1.06 m

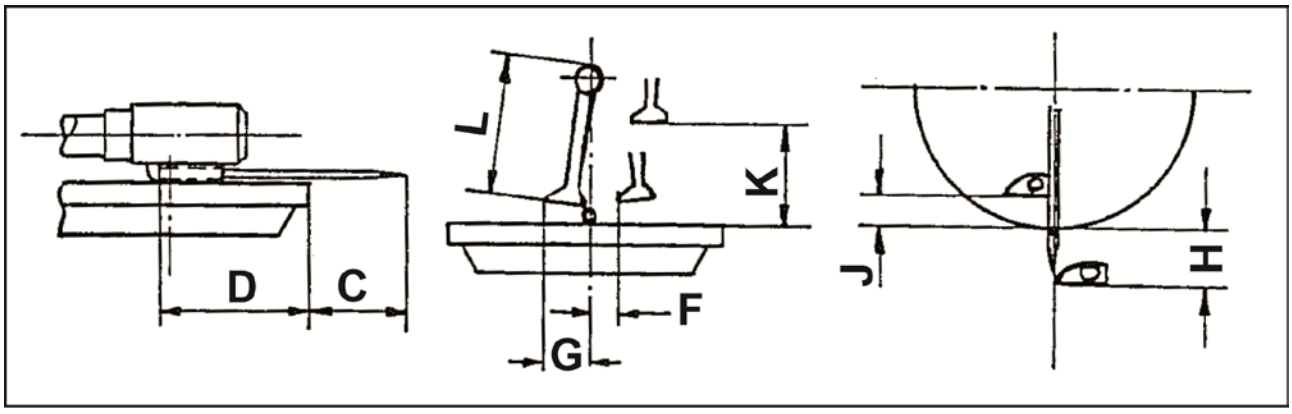
Noise:
Average noise level at a speed of
n = 1900 min^{-1}: LpAm 76 dB (A)
Noise test according to DIN 45635-48-1 KL3

2.5 Brief setting instructions

Cl. 410-1EVK

Needle type		134
Needle size		120 – 180
Stitch length	A	3 - 8
Stroke of loop	B	6
Needle point front measured from cup edge	C	25,6
Needle stop at needle bar until cup edge	D	13,8
Stroke of needle bar eccentric	E	38
Looper movement to the right from needle center to looper point	F	5,5
Looper movement to the left	G	11
Looper front position measured from cup edge	H	13,5
Looper rear position	J	6,5
Looper movement	K	10,5
Looper height inclusive shaft	L	41,5

The clearance between the feed cups amount 14 mm.



Einstellwerte_05

3 Hints for repair and settings

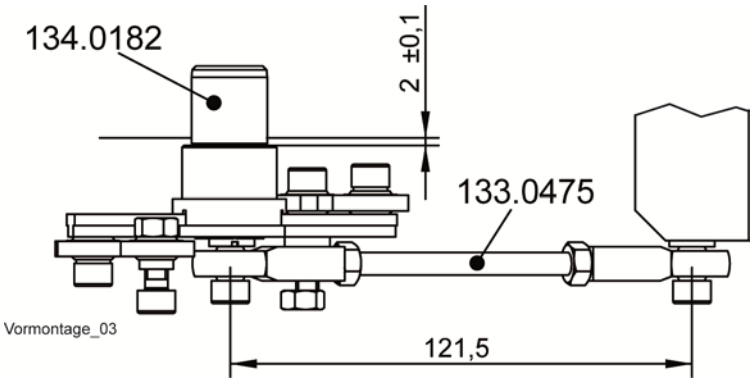
V O R S I C H T ! Verletzungsgefahr!

Vor Wartungs- und Reparaturarbeiten Sicherheitshinweise unter Punkt 1 und die Betriebsanleitung beachten. Bei deren Nichtbeachtung können schwerwiegende körperliche Schädigungen hervorgerufen werden.

3.1 Pre-assembly

Press in bearing bolt 134.0182 so that it's stopping face projects still 2 ±0.1 (Fig. 1).

Fig. 1

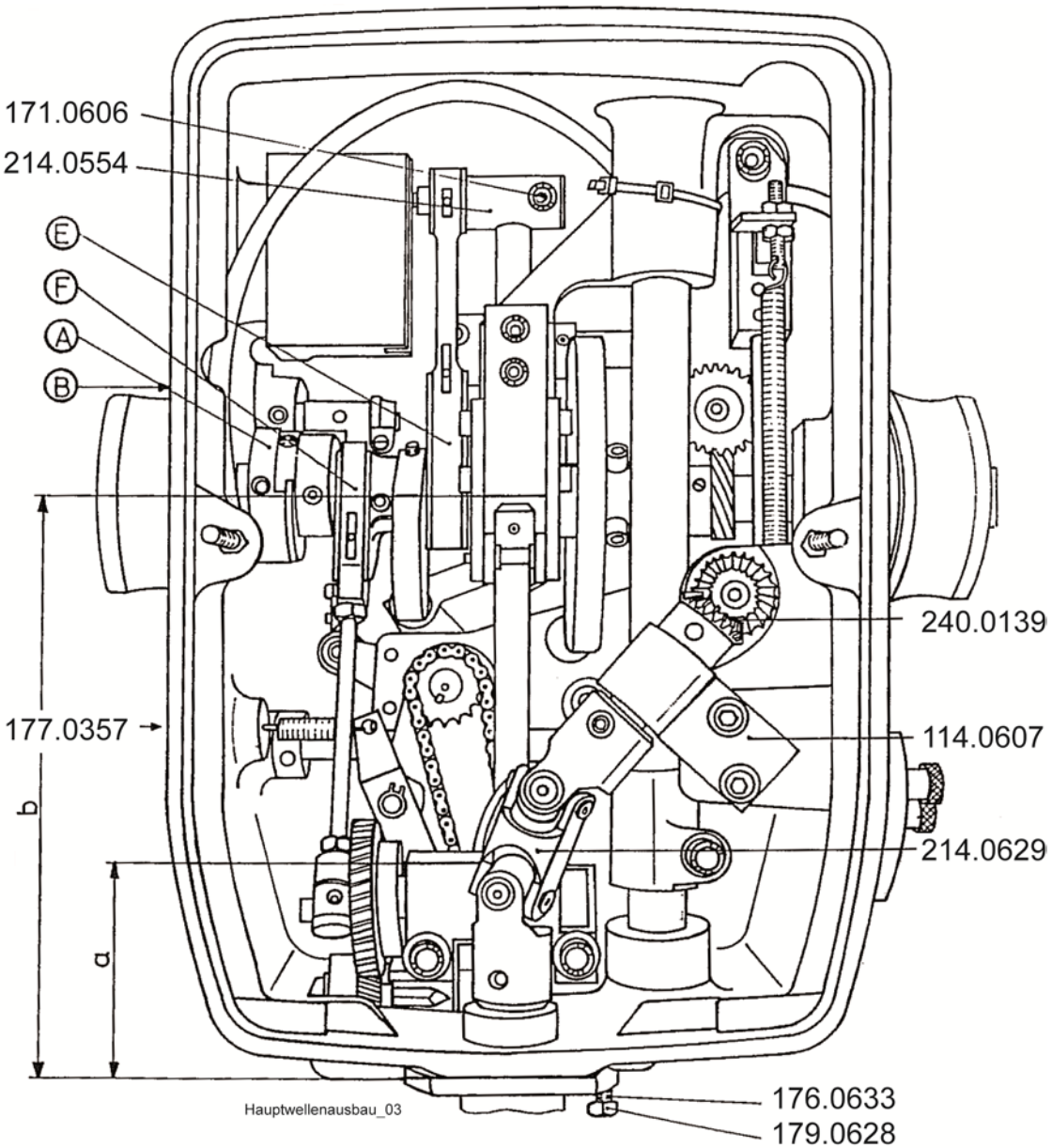


3.2 Main shaft assembly

3.2.1 Removing the main shaft

Before dismantling the main shaft we recommend to mark all parts on the shaft in a straight line by means of a ruler, respectively to note down all screw positions. If necessary, the measures of front and rear bearing block should be taken by means of a slide gauge from the edge of the machine column and should be noted down (measure a + b). This means a lot of time saving when assembling and setting the machine (Fig. 2).

Fig. 2

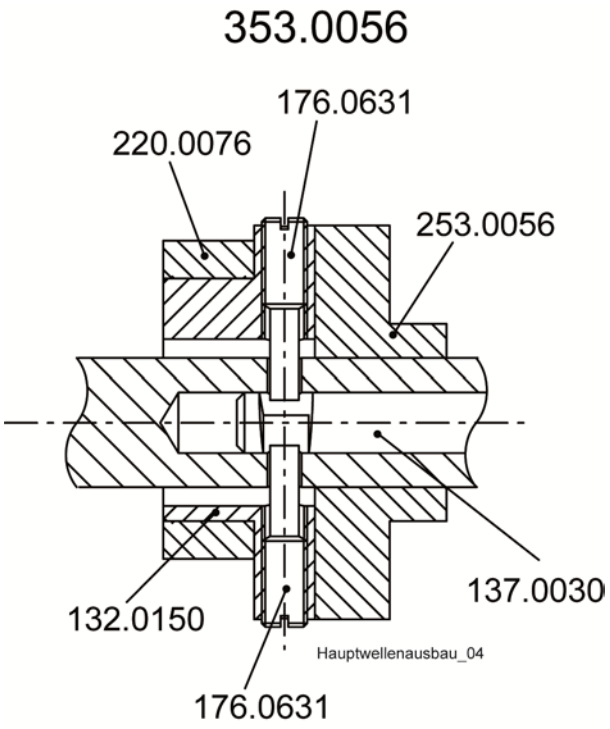


(Only) then loosen the screws of the parts on the shaft, remove the right hand wheel and push the shaft towards the left side by means of a pulling-off device without displacing the ball bearings.

Before dismantling the main shaft it is useful to pull the cup support arm towards the front to obtain better access to the set collar at the main shaft and to the toothed wheel at the oil pump. Dismantling see point “3.6.1 “Removing the feed cup (Fig. 16, Fig. 17 and Fig. 18)”.

ATTENTION: Take care of O-rings when assembling the shaft!

Fig. 3



3.2.2 Remounting the main shaft

When assembling the main shaft please observe that both O-rings 190.0142 are not damaged by introducing them into the drill holes of the ball bearings, to guarantee a good oil sealing.

After mounting all parts in the correct way, you may start Assembly of stitch regulating eccentric 353.0056.

3.2.3 Assembly of stitch regulating eccentric

The left hand wheel with the stitch regulation eccentric need not be removed. However, it is very important to ensure that the located on both sides of the adjustment cam bolts A 132.0150 176.0631 away. (Fig. 2 and Fig. 3).

ATTENTION! Mark correct position of guide disc 253.0056 and adjusting eccentric 132.0150!

Fit the left hand wheel onto the shaft so that the point of the first screw in sense of rotation fits into the drill hole on the left of the shaft and points upwards.

Turn guide disc 253.0056 so that you can easily slide down regulating eccentric 132.0150. Screw the first screw 176.0631 into the regulating eccentric but ensure that regulating bolt 137.0030 can still be freely turned in the shaft. Then turn handwheel with shaft by 180 degrees. Screw the second screw 176.0631 into the regulating eccentric right to the stop. Fasten guide disc 253.0056 on the shaft (Fig. 3). Push the shaft to the left up to the ball bearing and fasten it. The shaft is fix now. Let stitch regulating eccentric level out and tighten it (Fig. 4). Push two lubricated springs 161.0063 and two bolts 160.0183 into the drill hole of the hand wheel (Fig. 5).

Screw regulating knob 244.0209 onto regulating bolt 137.0030 and press it down until springs 161.0063 are urged, tighten knob.

The knob must be free from large to small random.

Fig. 4

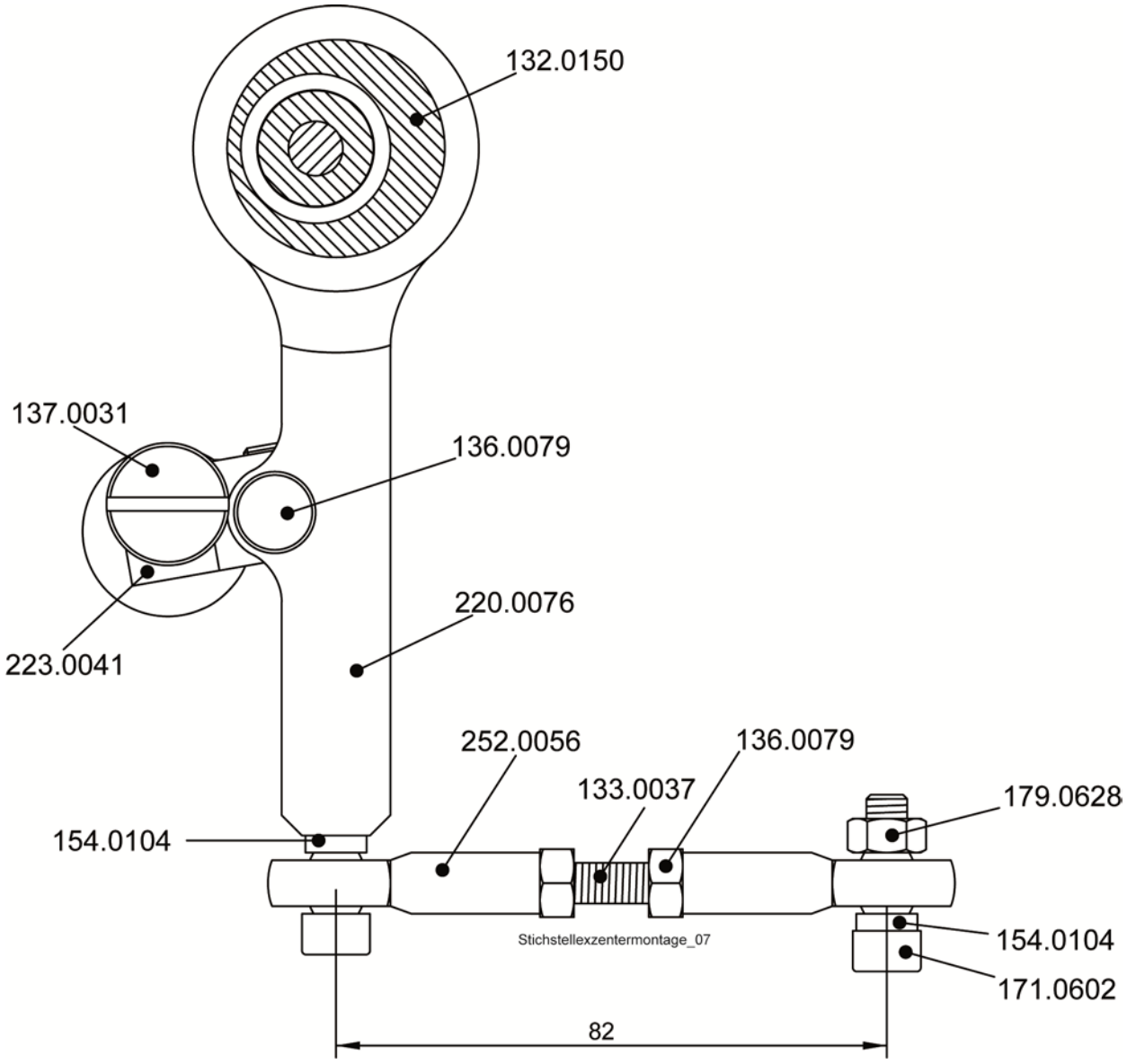
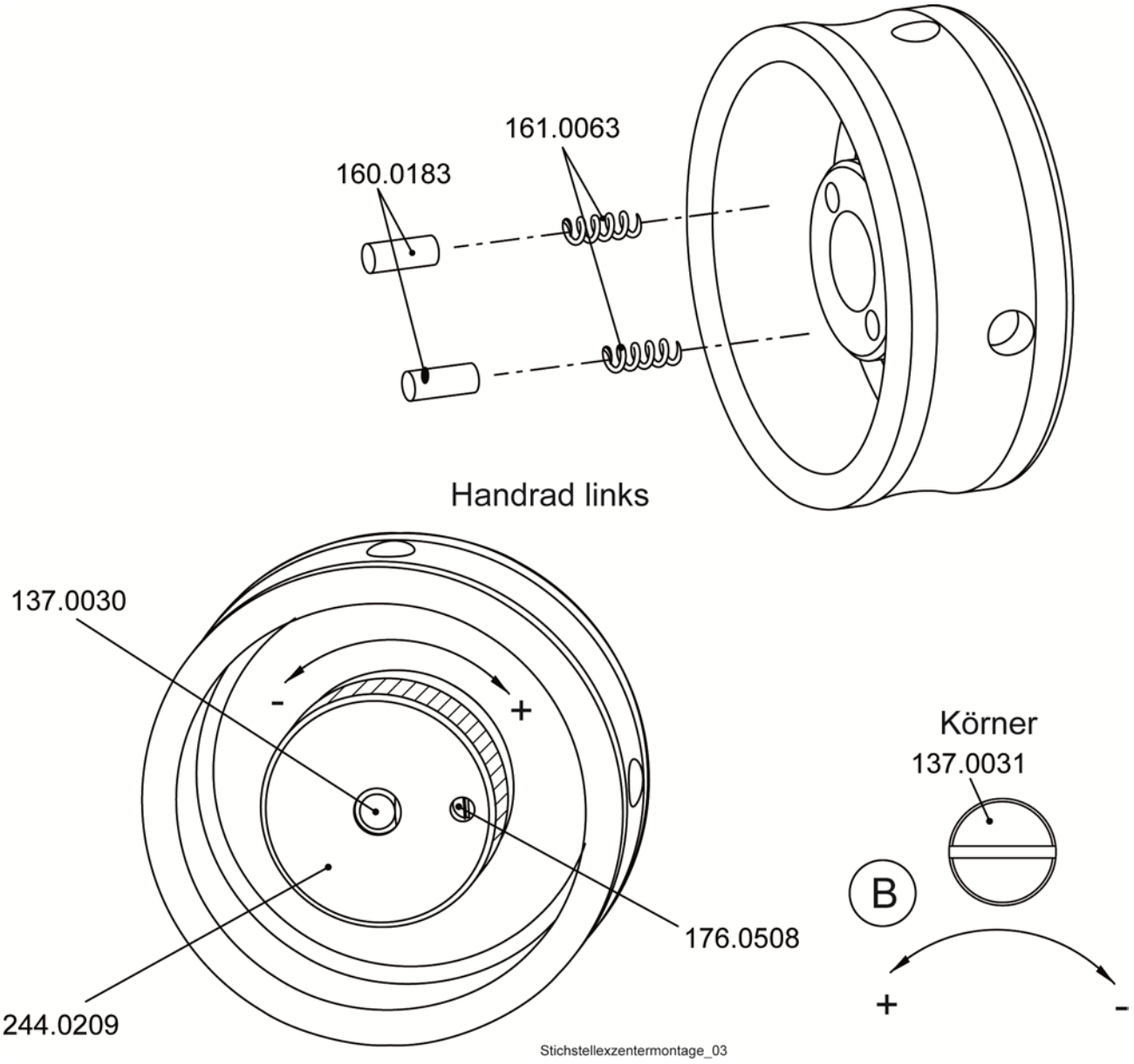

132.0150
137.0031
136.0079
220.0076
223.0041
252.0056
136.0079
133.0037
179.0628
154.0104
Stichstellexzentermontage_07
154.0104
171.0602
82

Fig. 5


161.0063
160.0183
Handrad links
137.0030
-
+
176.0508
244.0209
Körner
137.0031
B
+
-
Stichstellexzentermontage_03

3.3 Needle bar

3.3.1 Needle adjustment

A T T E N T I O N !

Switch off Machine electrically!

Setting values for the needle bar please see chart “setting values”, point “2.5 Brief setting instructions/C”.

3.3.2 Needle height adjustment (Fig. 6 and Fig. 7)

A T T E N T I O N !

Switch off Machine electrically!

The special design allows that the needle can be adjusted in height which is very suitable when using different needle sizes. By turning eccentric 132.0069 at the front side of the needle bar head the needle can be adjusted in height. Make sure that any needle passes the feed cup with a distance of approx. 0.1 mm.

First loosen screw 171.0406 of the needle setting plate 285.0193 respectively, adjust the needle in height, and retighten screw 171.0406.

Fig. 6

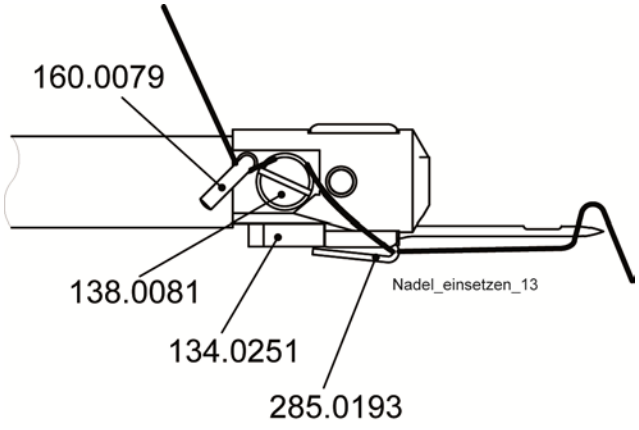
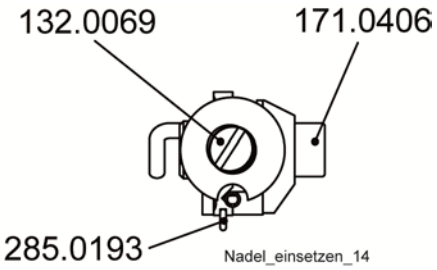


Fig. 7



3.3.3 How to adjust needle and feed motion

If the machine is set to produce the longest stitch (see chart), the feed motion stops when the point of the needle is placed ca. 4 mm within the cup edge before penetrating the fabric.

Transportation is beginning when the needle leaves the material and the needle tip with the nose is in line.

Needle- and feed motion are adjusted at needle bar eccentric (E) (Fig. 2). Please observe utmost front needle position (chart). When adjusting the needle bar, make sure that the needle clamp device at the needle bar head stands exactly rectangular to the rear feed cup.

3.4 Loop stroke

3.4.1 Setting the loop stroke

A C H T U N G !

Maschine elektrisch abschalten!

Each machine requires a certain stroke of loop B (see chart), which is regulated by turning the control cam and the looper eccentric measured from the needle's front dead point to the point where the looper stands above the centre of the needle.

To obtain a large stroke of loop	-	turn cam and looper eccentric opposite to the machine's direction of sewing,
To reduce the stroke of loop	-	turn cam and looper eccentric in direction of sewing.

Then the looper takes up the loop and puts it backwards over the sewing material (as straight as possible).

3.5 Looper

The looper motion is determined by the stroke of the looper eccentric (F) (Fig. 2) and by the crank distance. The looper motion must start and end at the same time as the needle bar motion.

The lateral looper movement is determined by the shape of the control cam and must be in accordance with the needle motion.

The looper shaft must be mounted exactly in the centre of the needle bar.

We recommend to fit the following parts onto the shaft in a way that they can still be moved, and to tighten them only after the final adjustment.

3.5.1 Exchanging the looper (Fig. 8)

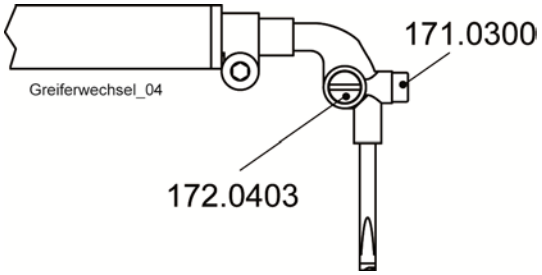
A T T E N T I O N !

Switch off Machine electrically!

The looper can be removed after loosening clamp screw 172.0403 and head screw 171.0300 at the looper shaft head. When remounting a new looper make sure that it does not touch the needle or the feed cups neither in its front nor in its rear position. (See also chart “setting values”, point “2.5 ”).

The looper back should be as parallel as possible to the needle.

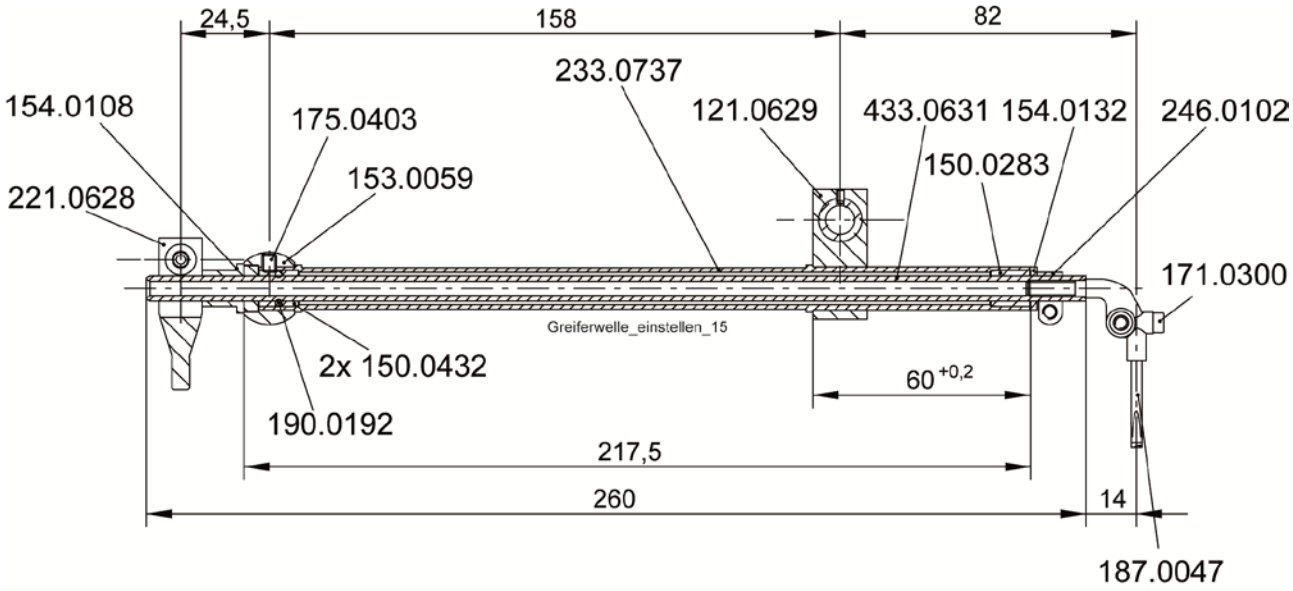
Fig. 8



3.5.2 How to set the looper shaft

The looper shaft can be pre-assembled outside the machine. Measure 82 from looper centre to centre of lever 121.0629 and 158 to centre of bearing 153.0059 (Fig. 9) are determined.

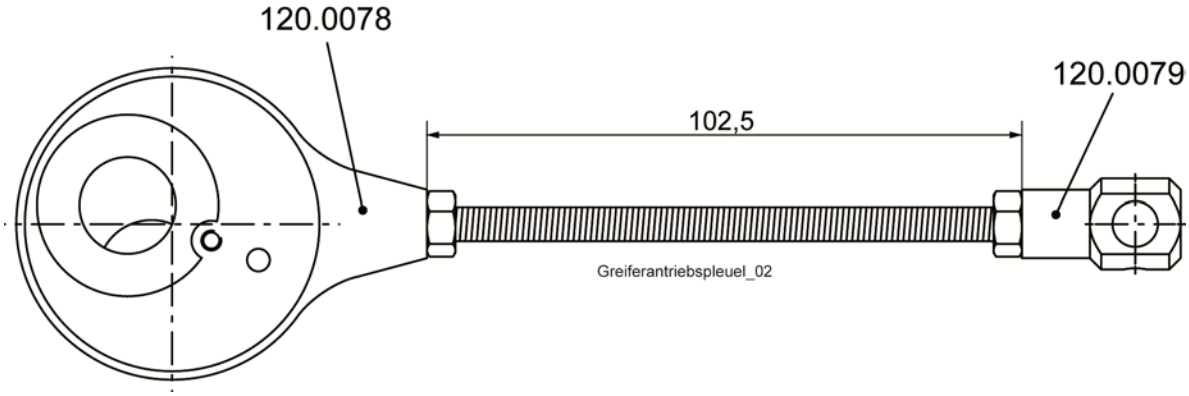
Fig. 9



3.5.3 How to set looper connecting rod (Fig. 10)

The looper connecting rod is mounted with a distance of 102.5 between connecting rod eyes 120.0078 and 120.0079. The connecting rod may not reach the cusp point. Observe angle deviation of drill holes.

Fig. 10



3.5.4 How to mount front bearing block 114.0606 (Fig. 11)

Two bushes 150.0170 are pressed into bearing block 114.0606 for the rear shaft 130.0280, whereby the right bush must be flush and the left bush (gearwheel side) should project by 1.5 mm. Both gearwheels are running on a level. Turn the eccentric front bush 151.0028 so that the eccentricity is going upwards. Set gearwheels tight so that they are running easily but have a minimum play (if not mounted correctly, looper motion is influenced too).

Depending on the gearwheel tolerance, the eccentric bush is showing more or less upwards (32 degrees position).

To ensure that the looper in front or rear position has the correct distance to the needle, loosen both screws at the small gearwheel 240.0144 and set the right distance to the needle by moving the crank forwards or backwards.

When installing the gears 240.0143 and 240.0144, make sure that the large gear 240.0143 of the crank bolt is to the rear and the two fixing screws on the gear 240.0144 looking forward a screw and a bolt to the rear. Important for setting the crank! (Fig. 12).

Fig. 11

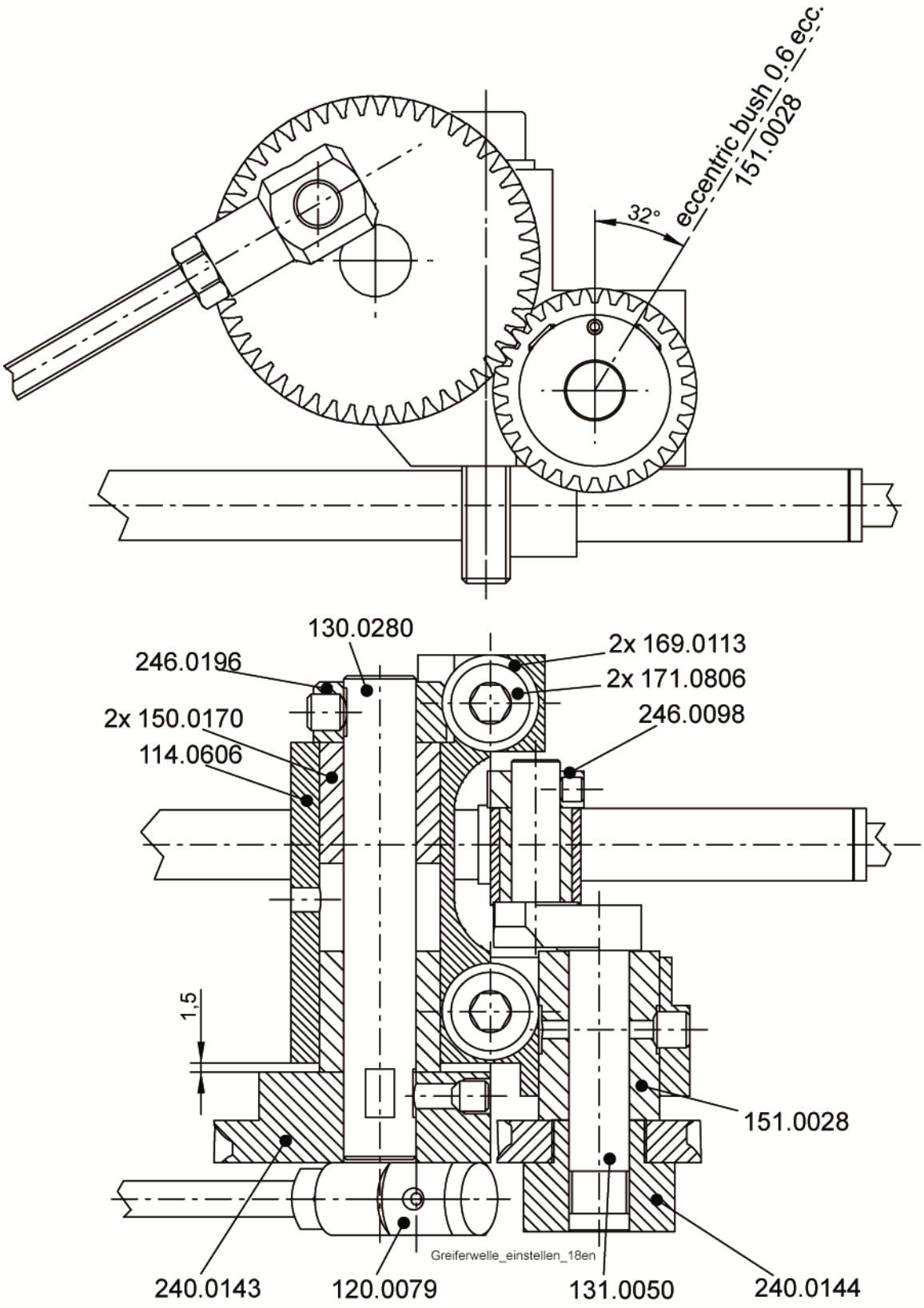
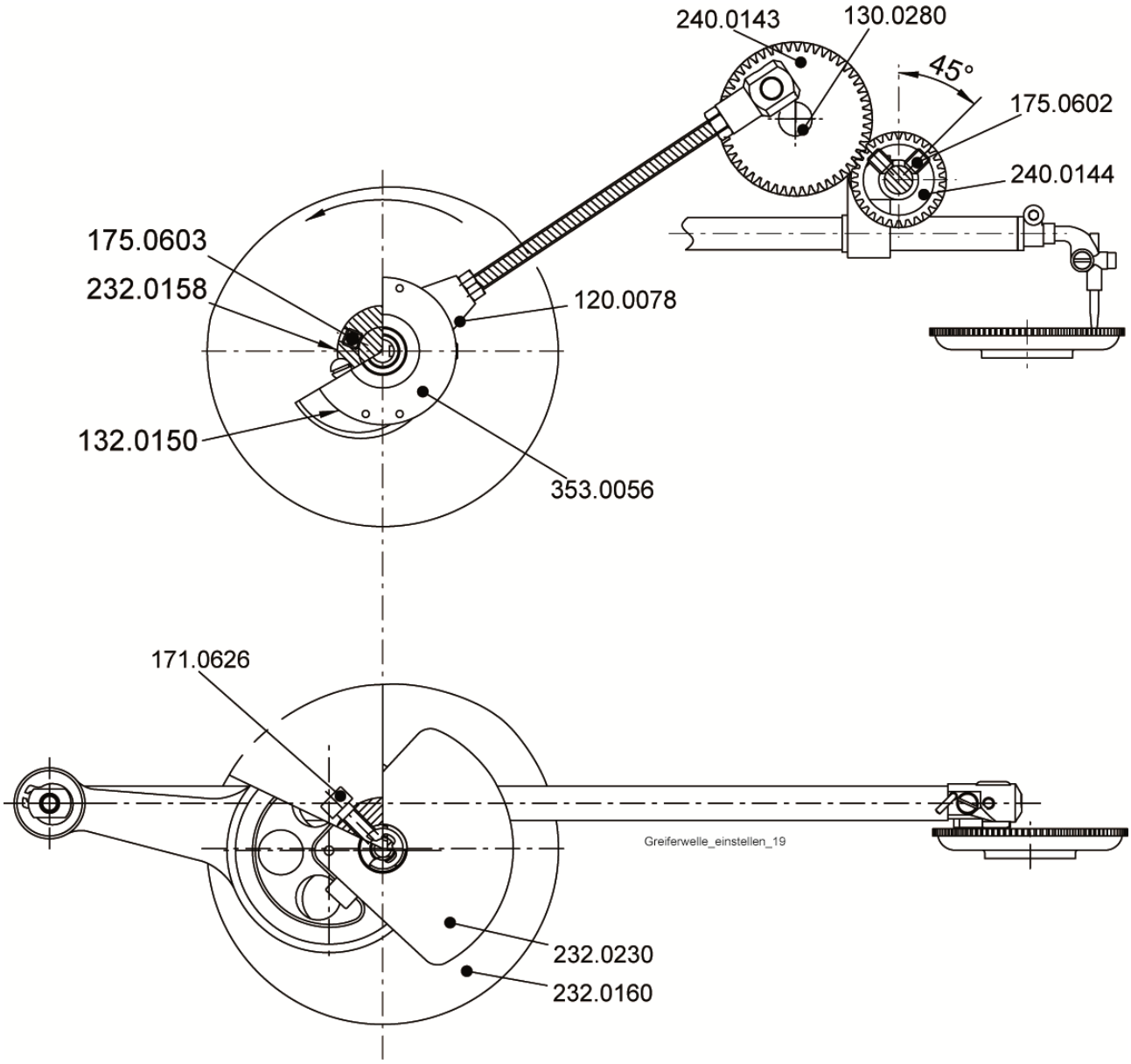

eccentric bush 0.6 ecc.
151.0028
32°
130.0280
246.0196
2x 150.0170
114.0606
2x 169.0113
2x 171.0806
246.0098
1,5
151.0028
240.0143
120.0079
131.0050
240.0144
Greiferwelle_einstellen_18en

Fig. 12



3.5.5 How to mount rear bearing block

The height dimensions of the rear bearing block 114.0595 are as follows:

Single-thread machines with distance piece 124.0203 14 mm

Length of rear bearing block can only be adjusted according to fastening drill holes. It should always be mounted centrically to the drill hole. When displacing it to the front the looper is moving more to the right side and vice versa.

3.5.6 How to set the looper motion (Fig. 12)

The completely assembled looper shaft (see “3.5.4 How to mount front bearing block 114.0606 (Fig. 11)”) together with bearing block (see “3.5.5 How to mount rear bearing block”) can now be mounted to the machine. Needle motion has already been set. Needle bar eccentric is positioned in direction of rotation in a way that the surface of the counterweight is facing vertically to the front (normal position). In this position the first screw of the needle bar eccentric is facing upwards, the crank bolt of the big gearwheel 240.0143 backwards and the first screw of the small gearwheel 240.0144 approx. 45 degrees to the front. The looper point is above the needle centre (Fig. 12).

From the initial position, the first screw in the direction of rotation of the cam 171.0626 projects upward. In this position the needle bar has reached the rear cusp point. The looper is placed ca. 2 mm left from the needle and abt. 1 mm above the same (Fig. 13). At forward motion the needle point reaches the right looper edge whereby the needle is ca. 1 mm above the looper and passes the looper at uniform distance (Fig. 14).

At rear dead centre position of the lateral and lengthwise looper motion the needle point, depending on the set stroke of loop, is positioned ca. 7 mm within the rear feed cup.

Fig. 13

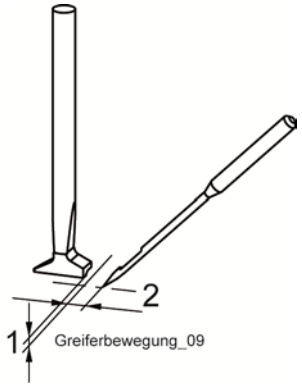
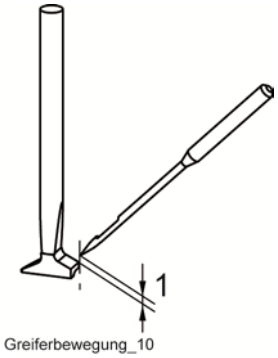


Fig. 14



3.5.7 How to set the looper in its front position to the rear feed cup

The looper reaches its utmost front position on turning the cam by 180 degrees. To be set as per measure H - see chart.
It is important that the looper height L, incl. shaft, is properly adjusted (see chart).

It has to be controlled if measure H coincides with looper shaft set as described under 3.5.2 „How to set the looper shaft", re-adjust, if necessary.

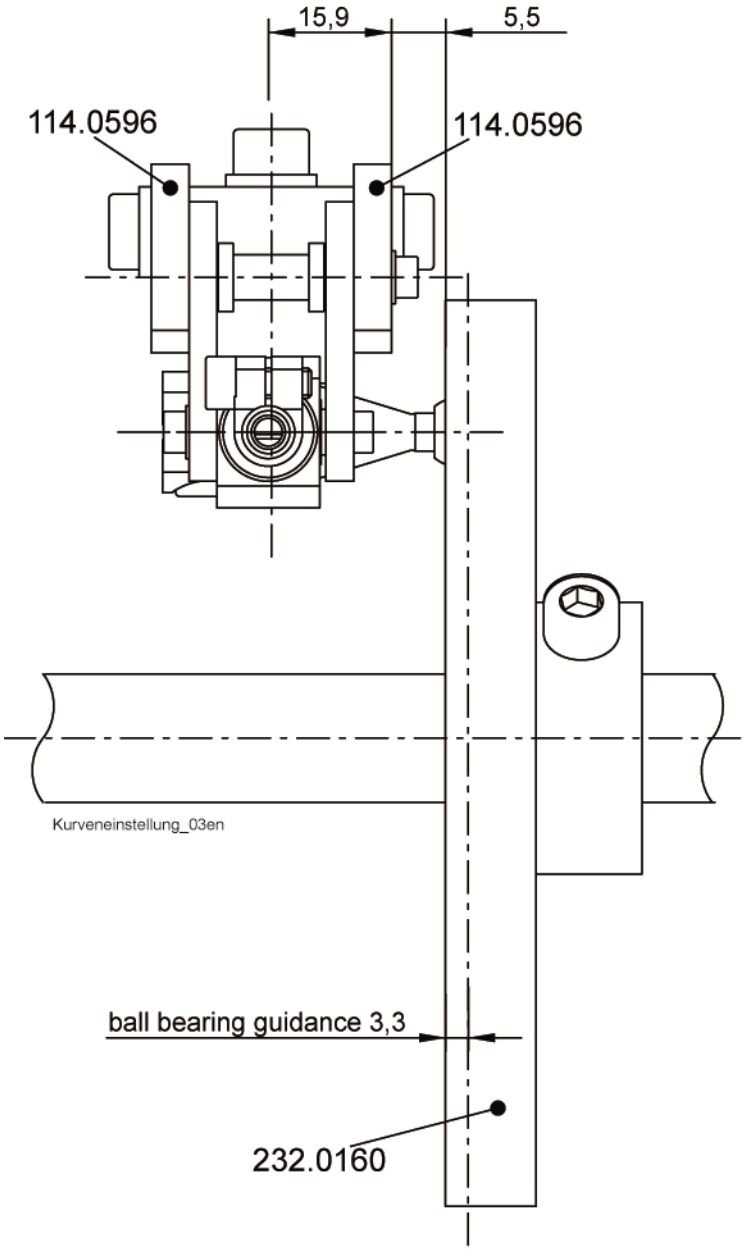
3.5.8 Adjustment of curves (Fig. 15)

Curve has to be mounted in the way that between flange 114.0596 and curve the distance 5.5 is available.

If distance is enlarged looper deflection to the right will become smaller. The total movement of looper is insignificantly changed.

(The distance 5.5 cannot be reduced since otherwise lever will abrase in curve.)

Fig. 15


15,9
5,5
114.0596
114.0596
Kurveneinstellung_03en
ball bearing guidance 3,3
232.0160

3.6 Feed cup

3.6.1 Removing the feed cup (Fig. 16, Fig. 17 and Fig. 18)

If the standard feed cups have to be replaced by differently toothed ones, proceed as follows:

1. Remove material guide - 2x screw 171.0503 (Fig. 18).
2. Needle, cylinder screw 171.0406, 185.0192 needle clamp plate, pressure plate adjusting needle and spring 161.0032 285.0193 pull out. (Fig. 16)
3. Unscrew flat head screw 174.0520 of feed cup fastening, remove feed cup upwards (Fig. 17).
4. Mounting of replaced feed cups vice versa.

Fig. 16

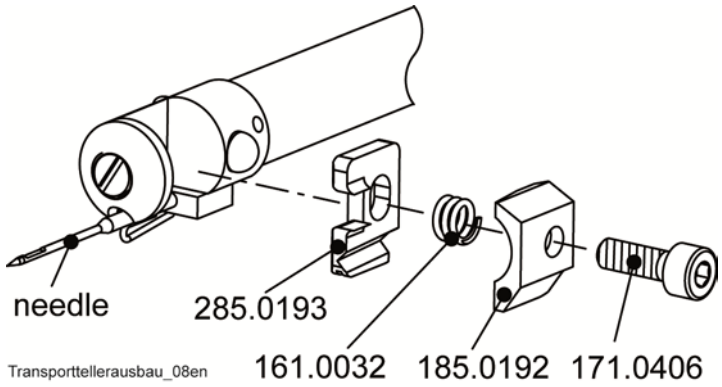


Fig. 17

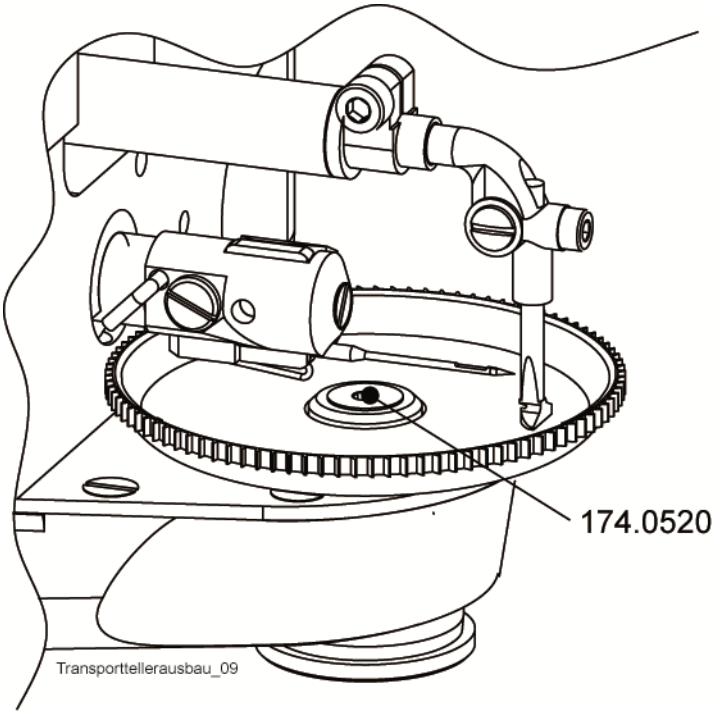
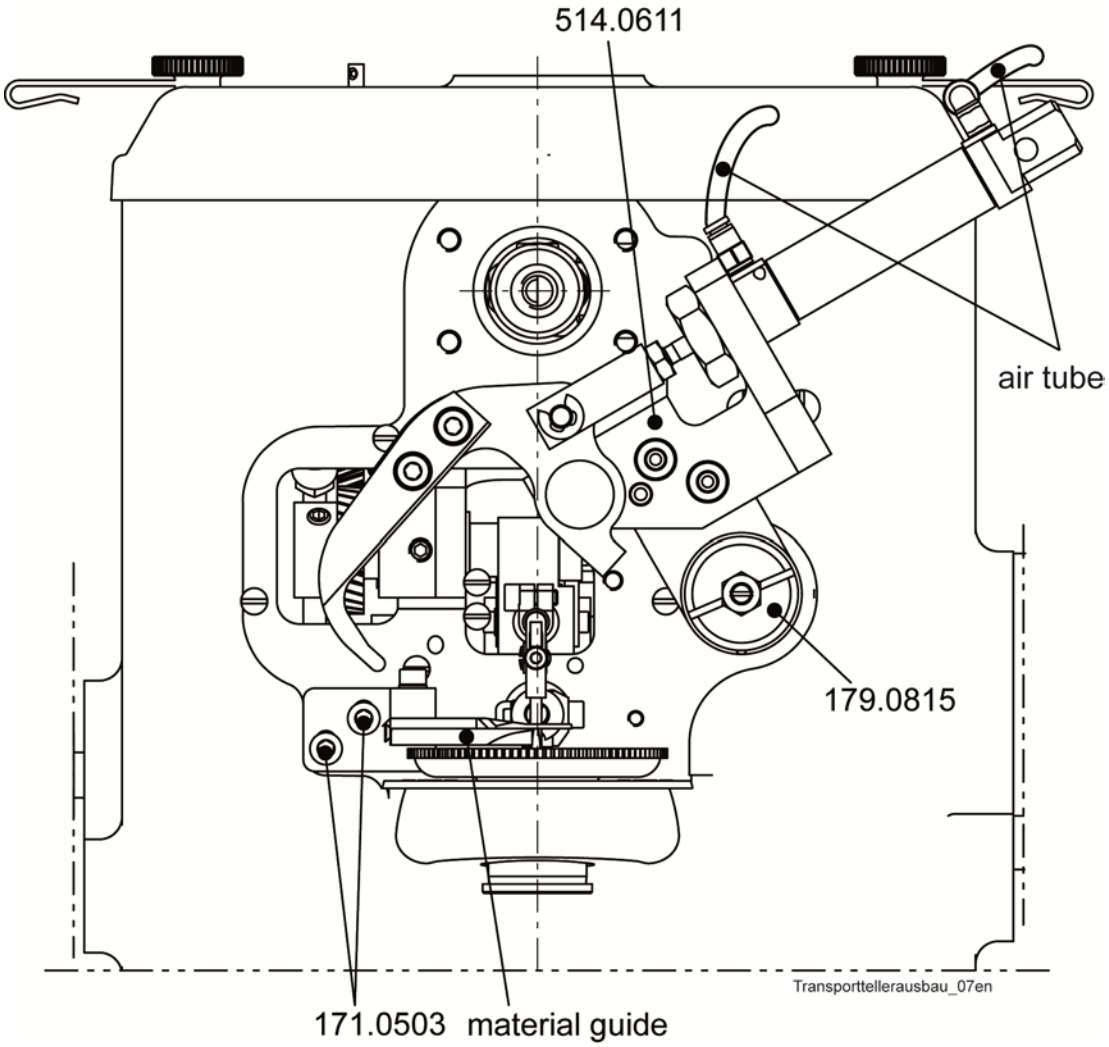


Fig. 18



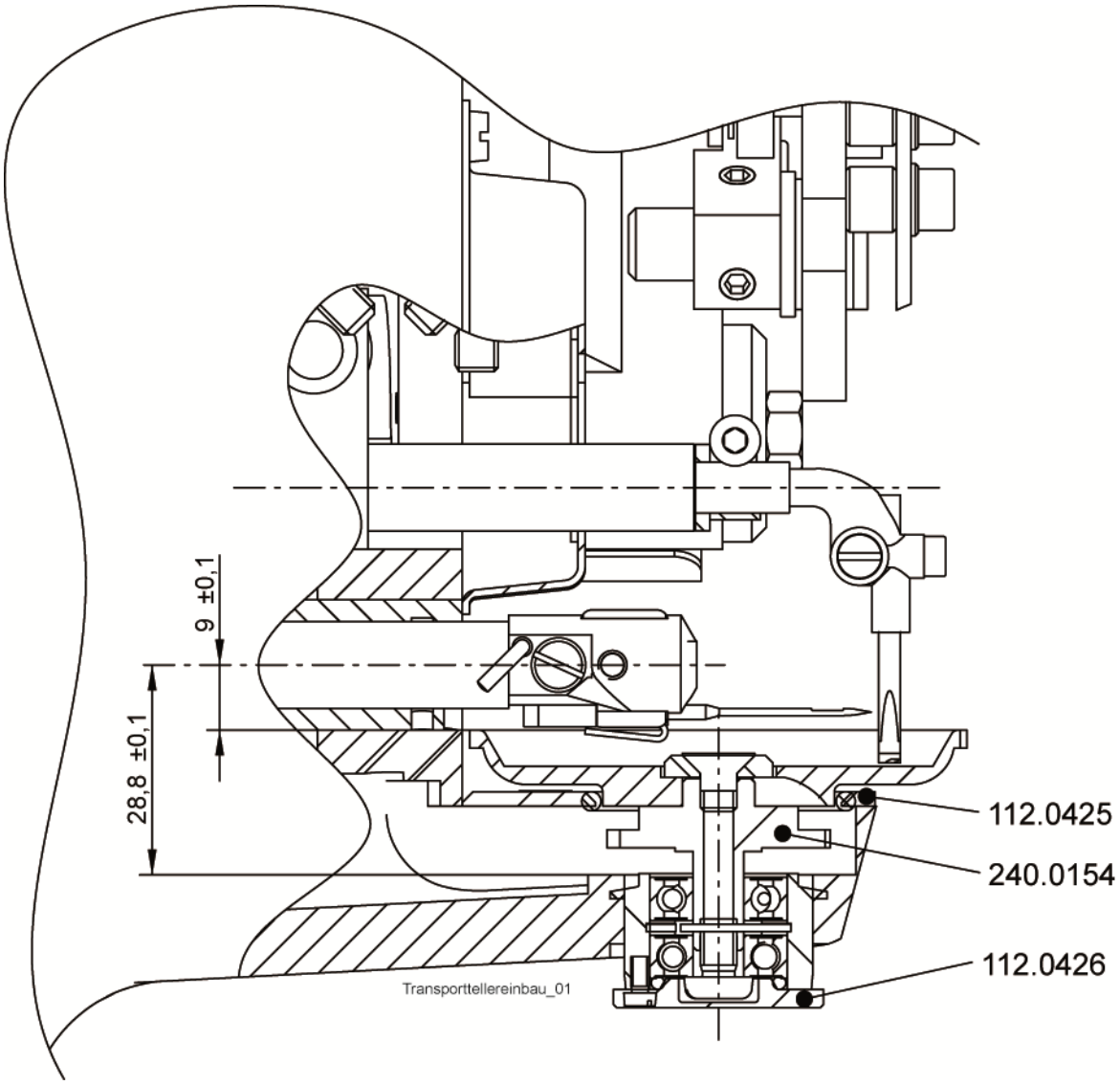
3.6.2 Remounting the feed cup (Fig. 19)

After the clutches were installed, the transport plate bearing can be mounted with the drive chain. It is important to ensure that a dimension transport plate top edge to center of needle bar is 9 ± 0.1 mm.

After the assembly of the sprocket 240.0154 112.0425 the lid can be inserted and fixed by silastic coated. Then the transport plate is mounted.

And the lower oil seal cover 112.0426 is fastened with silastic.

Fig. 19



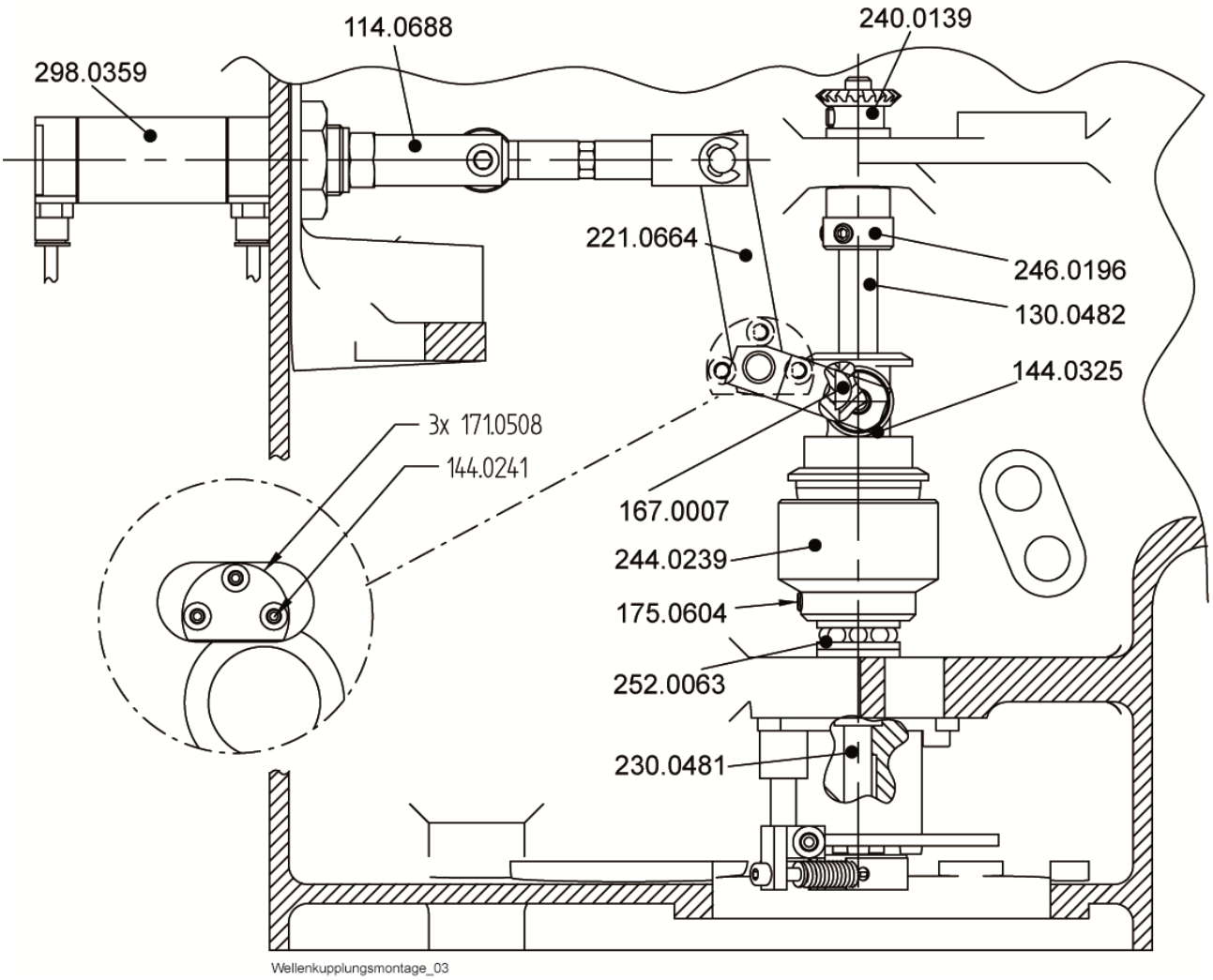
3.6.2.1 Chain tension

The chain for the feed cup drive can be tensed by means of set screw 177.0357 at the left front side (Fig. 2).

3.6.2.2 Mounting of pneumatically controlled shaft

Mount freewheel with shaft 230.0481. Put lower coupling part 244.0239 on thrust bearing 252.0063 close to freewheel by means of screws 175.0604. Mount upper shaft 130.0482 closely, upper coupling 144.0325, set collar 246.0196 and conical gearwheel 240.0139 closely. The shaft ends must have a distance of 1 mm from each other.

Fig. 20



In radial direction the upper coupling part 144.0325 is rigidly mounted to shaft 130.0482 by means of key 167.0007. It is (however) movable in axial direction.

The pre-assembled control lever 221.0664 with rolls is than put in the upper coupling part and attached to the machine body by means of flange 144.0241 which itself is fixed to machine body by screws 171.0508.

The pneumatic cylinder 298.0359 to be joined with block 114.0688 has to be adjusted so that, when uncoupled, the cylinder block is in rear position, (Fig. 20)

3.6.2.3 Front cup assembly

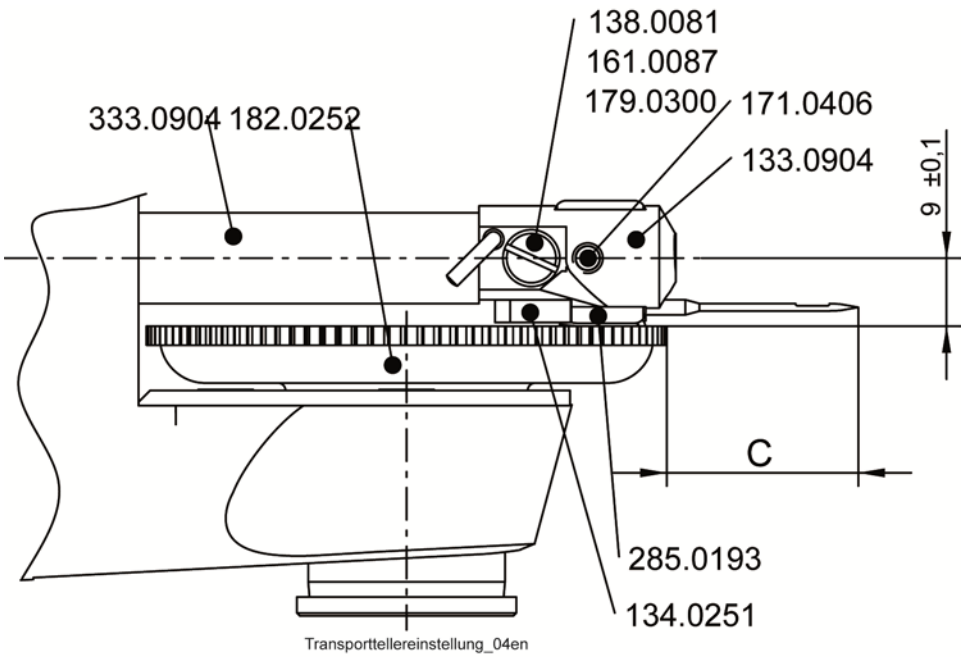
The conical gear wheels 240.0139 should be set so that they can rotate easily but have little play between the teeth. The height can be compensated by adjusting bush 150.0170 (see “3.1 Pre-assembly”) or by means of shims.

When properly adjusted, you can easily turn the regulating knob from the fixed stop „long stitch“ to the fixed stop „short stitch“. At „long stitch“, stitch regulating eccentric 132.0150 must be set at upper dead point and regulating knob in front position. To set the short stitch the regulating knob has to be turned backwards by abt. 150 degrees. Hereby screw 176.0508 cemented into regulating knob stops at spring urged bolts 160.0183 in the hand wheel.

3.6.3 Height adjustment of feed cups

The rear feed cup is mounted with a distance of 9 ±0.1 mm from upper edge front cup to centre of needle shaft. The front cup should be mounted horizontally and by 0.1 mm lower than the rear feed cup. If the machine is equipped with a needle guide, this has to be mounted again 0.1 mm lower than the upper edge of the front cup (Fig. 21).

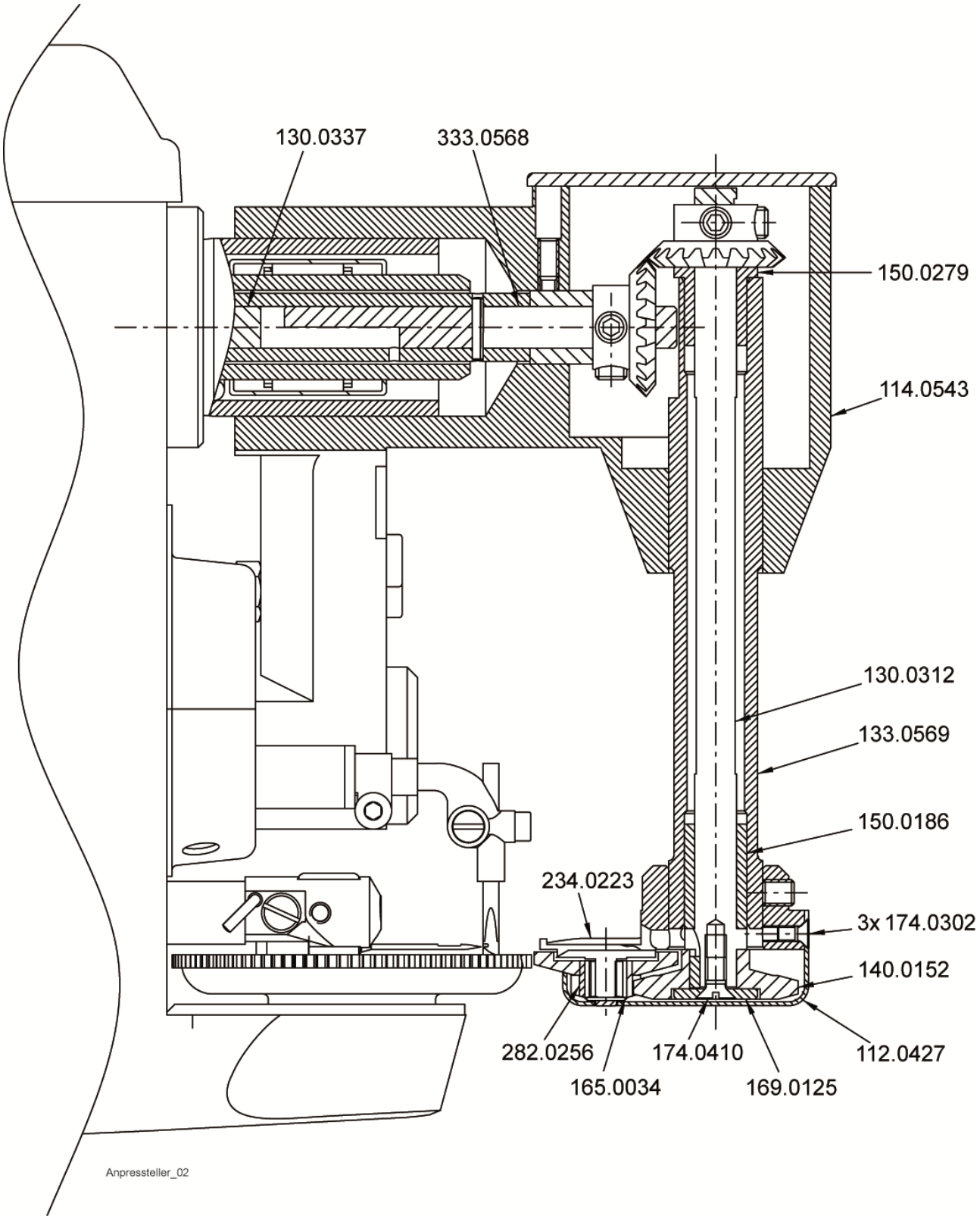
Fig. 21



needle bar stroke of eccentric = 38
C = setting data (see 4 “Setting data“)

3.7 Front cup

Fig. 22



3.7.1 Front cup assembly (Fig. 22)

After removing cover 112.0427 (three screws 174.0302), screw 174.0410 can be unscrewed and the big toothed wheel 140.0152 can be pulled off.

Then remove locking ring 165.0034 from bearing bolt of the small front cup and replace front cup.

To maintain a good ball bearing seat we recommend and to screw needle guard 134.0160 and to dismantle the front cup in a bench vice.

Assembly the opposite way, please observe setting data of 3.6.2 “Remounting the feed cup (Fig. 19)” and 3.6.3 “Height adjustment of feed cups”.

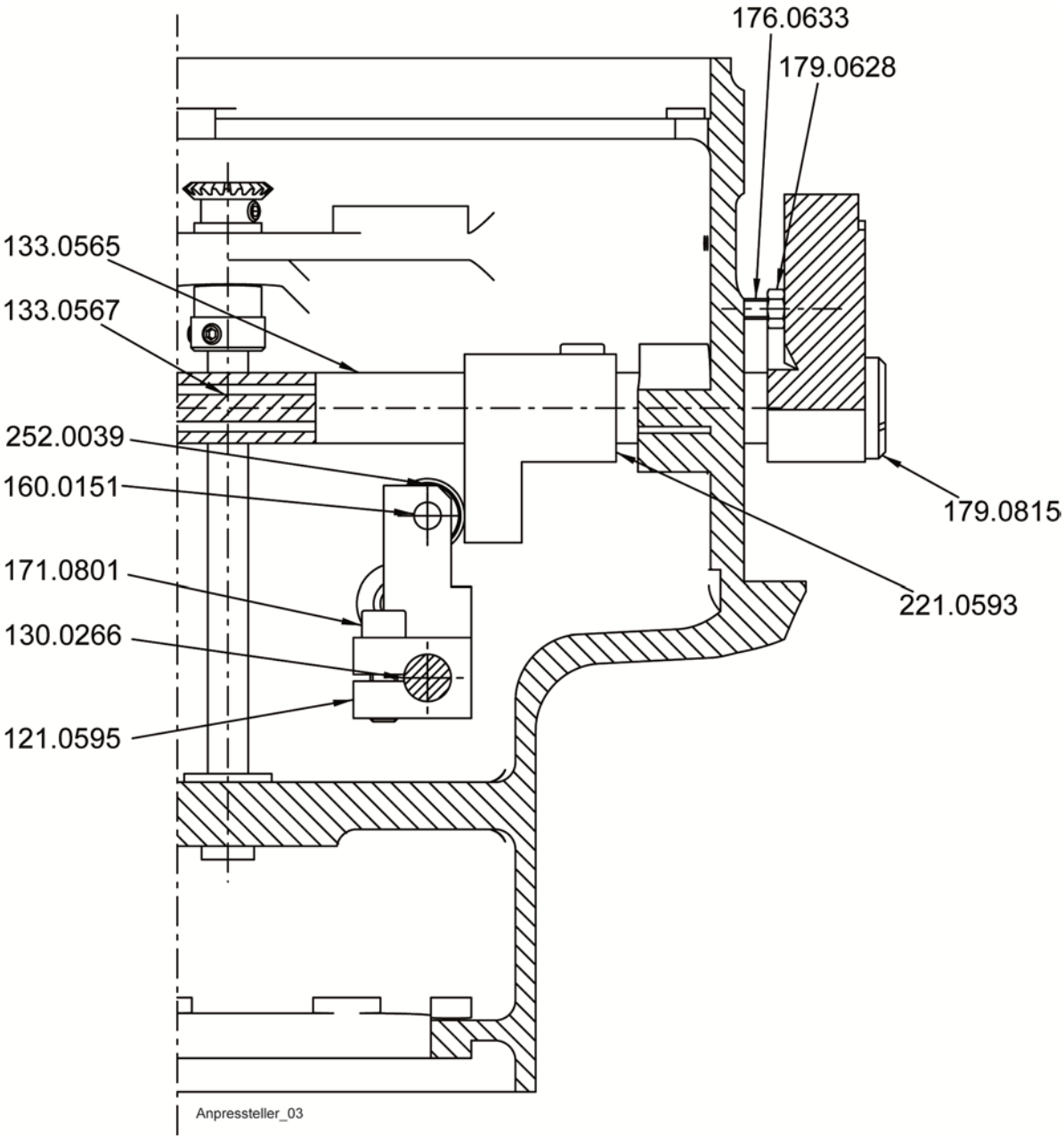
3.7.2 Front cup support arm

After unscrewing spring tension nut 179.0815 and loosening lifting lever 221.0593 which is placed at guide tube 133.0565, the support arm of the front feed cup can be removed to the front.

During installation, make sure that the two surfaces of the drive shafts 333.0568 and 130.0337 vote on each other. You may be represent presser plate to rotate by hand until the support arm can be pushed.

To avoid damages at the feed cup teeth during idle running, there should remain a gap of 0.2 - 0.3 mm between the feed cups. The distance can be set by means of stop screw 176.0633 and counter nut 179.0628 (Fig. 23).

Fig. 23



3.7.2.1 Spring tension

The spring tension of the cup support arm necessary for the sewing process can be adjusted by means of spring tension nut 179.0815. Depending on the fabric the setting value is between 150 N and 250 N. Normal tension is 250 N.

3.7.2.2 Feed cup opening

Max. opening of feed cups is 16 mm. Adjustment by means of lever 221.0593 or 121.0595 resp. (Fig. 23).

3.7.3 Setting the cup support arm

A T T E N T I O N !

Switch off Machine electrically!

Depending on the material to be sewn the spring pressure of the cup support arm can be adjusted from 150 to 250 N by means of adjusting nut 179.0815 at the front part of the cup support arm. The pressure for sewing Kevlar shoes is approx. 250 N (Fig. 23).

3.7.3.1 Setting the pneumatic two-stage feed cup opening (Fig. 24)

A T T E N T I O N !

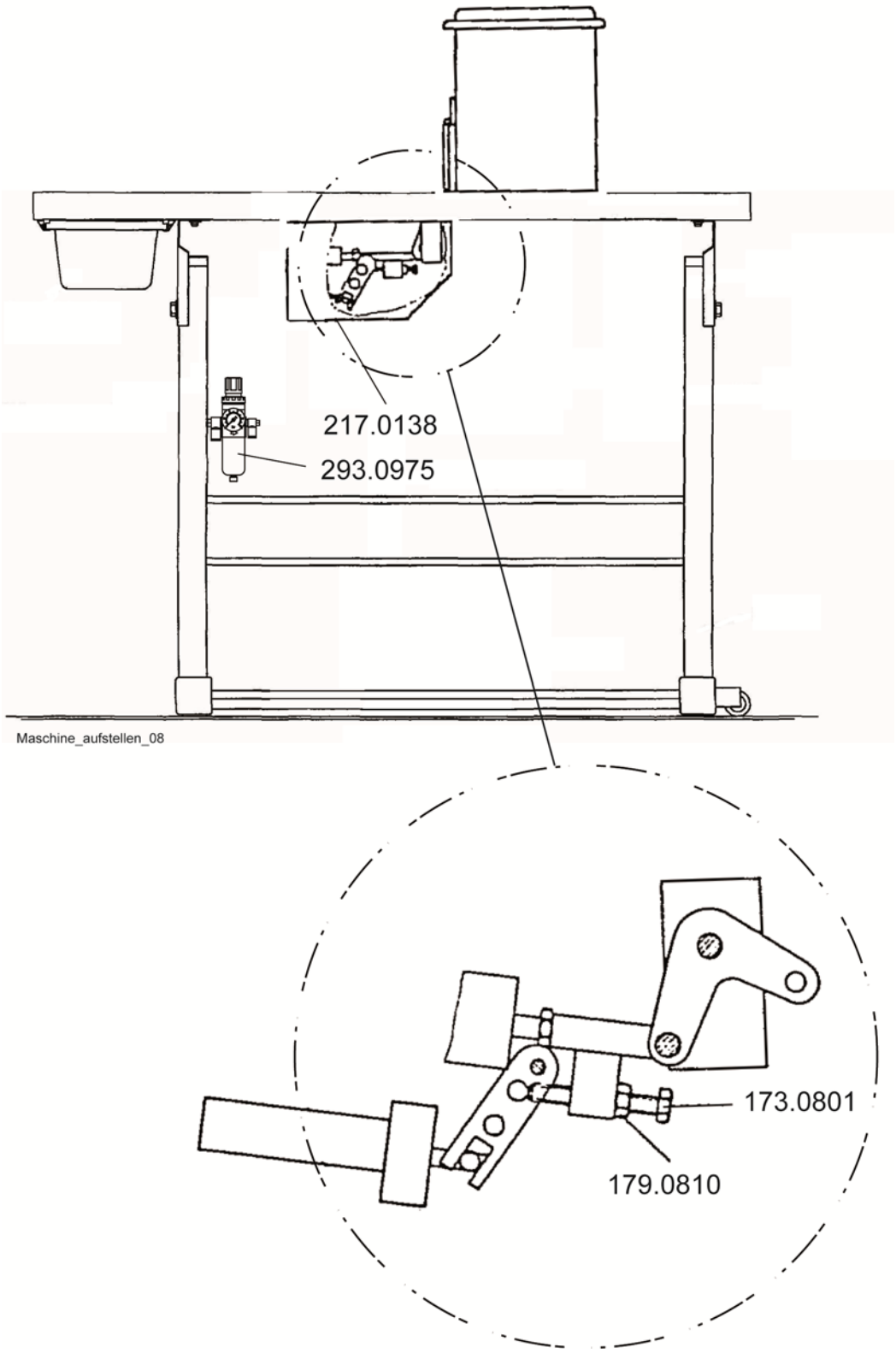
Switch off Machine electrically!

The lifting distance of the front cup is determined by the cylinder stroke and reaches approx. 14 mm.

However, the clearance needed for swiveling down the gathering device is adjustable. It amounts to approx. 7 mm. After removing protective cover 217.0138, and after loosening nut 179.0810 stop screw 173.0801 can be set to the required distance. Set the distance so that material plus gathering device fit easily between the feed cups.

Screwing in of screw 173.0801 means a larger, unscrewing a smaller clearance between the feed cups.

Fig. 24



3.8 Transport

3.8.1 Differential adjustment

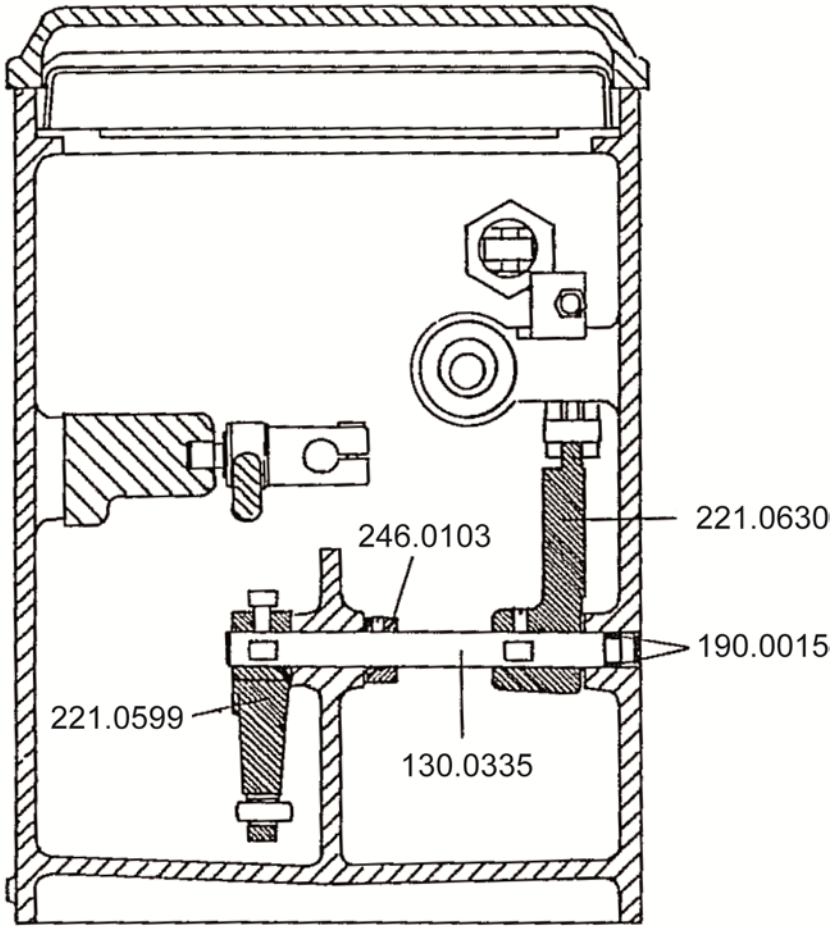
Because of easier handling start with differential adjustment when assembling the machine.

Lever 221.0630 with set collar 246.0103 and lever 221.0599 has to be sticked to shaft 130.0335 with O-ring 190.0015 (Fig. 25). Shaft should be more or less flush with outer edge of machine column. Tighten lever 221.0599 by fixing ring 246.0103. Mount bearing bolt 134.0183 with all belonging parts (Fig. 27)

Adjust rods 138.0274 with blocks 114.0602 and 114.0603 to measure 173, adjust borings parallel and mount with lever 221.0631 in true alignment to lever 221.0630. (Fig. 27)

Adjust spring 162.0079 by means of a spring clamp to a tension of 40 +5 N which you may measure at bolt 138.0273 under the gear shifting gate (Fig. 27).

Fig. 25



Differentialverstellung_02

Before assembling, joint rod 133.0475 should be adjusted to measure 121.5. It has to be observed, that, when bolt 138.0273 (Fig. 27) is in zero position, bar 122.0031 stands exactly within the centre of rotation of bearing flange 214.0605 to guarantee synchronous running of the feed cups (control from the bottom side: centre may not move at zero position) Possible tolerances are to be corrected by adjusting threaded rod 138.0274 accordingly (Fig. 1 and Fig. 26).

Fig. 26

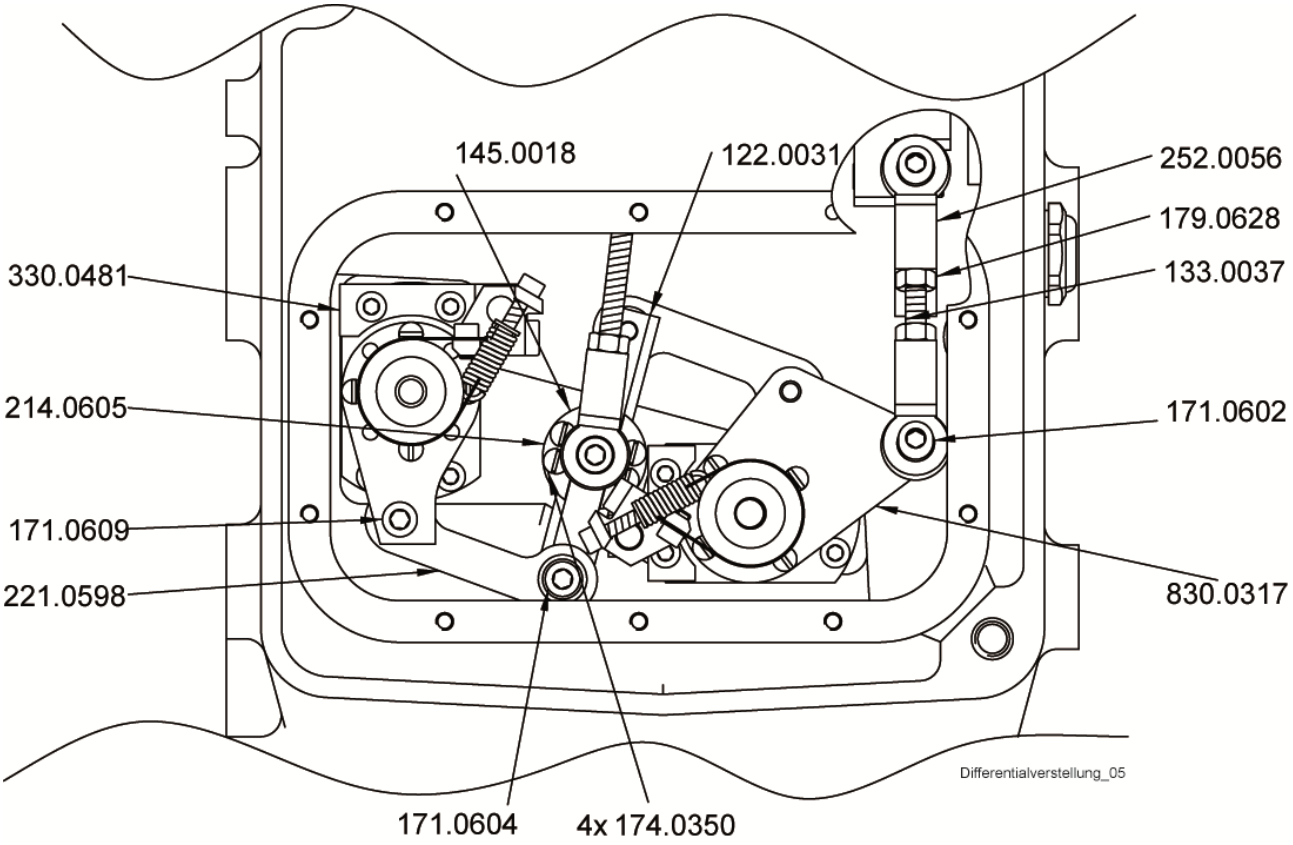
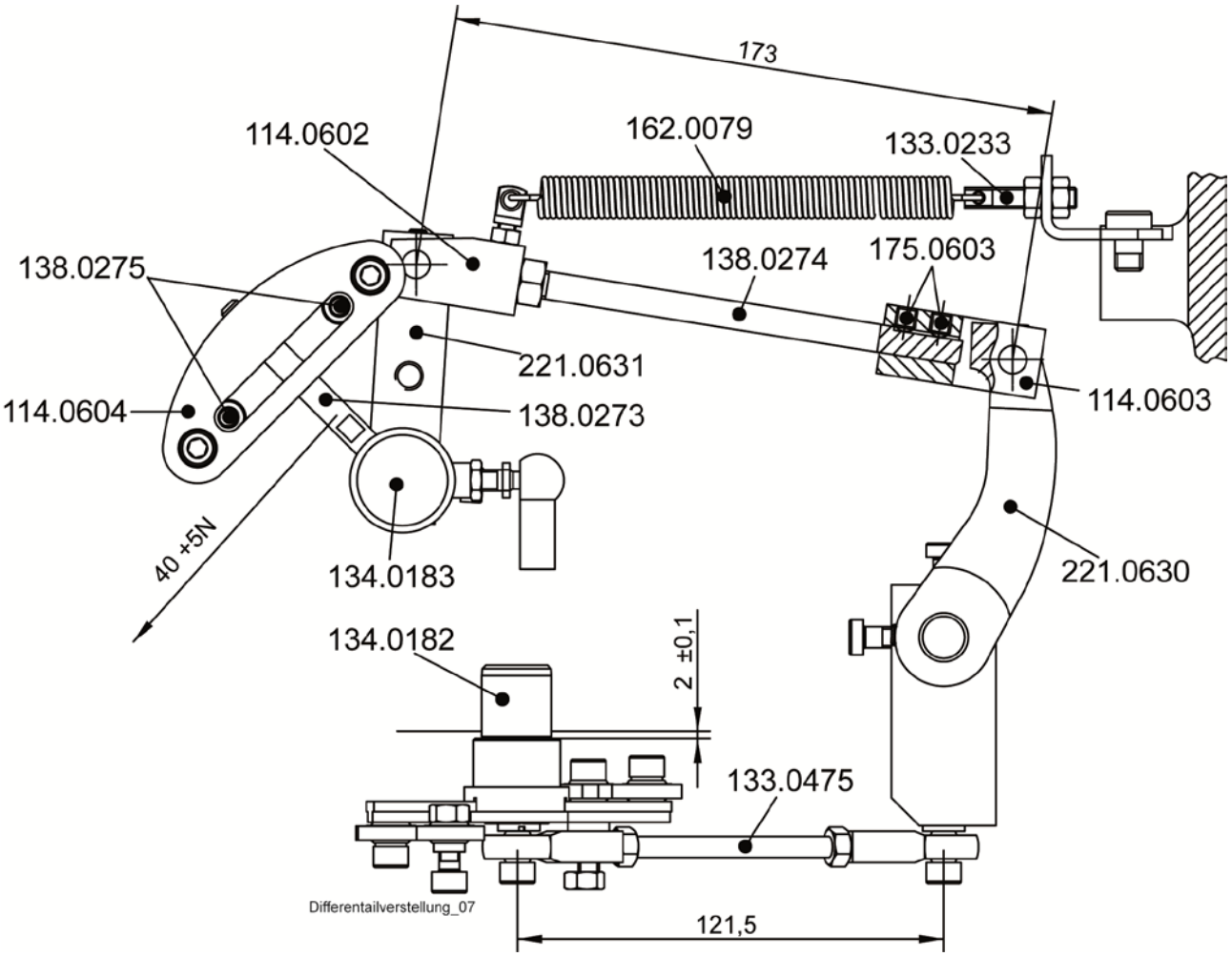


Fig. 27



After mounting gear shifting gate 114.0604 with all belonging parts, trip dog 138.0275 may be adjusted provisionally. It should sit close to bolt 138.0273 when lever 221.0630 is in zero position. (Fig. 27)

The synchronous adjustment can be corrected by loosening both screws 175.0603 in connecting piece 114.0603 and displacing rod 138.0274 (Fig. 27).

Synchronous adjustment at speed 1500 min-1 and 4 mm stitch length.

Shortening rods 138.0274 means slower running of front cup, lengthening (measure 173) means faster running. Result of the differential adjustment is, that per graduation mark the front cup runs ca. 8% of the rotational speed slower, i.e. a total of ca. 48% at 6 graduation marks.

3.9 Pneumatic lifting

3.9.1 One-way restrictor

A T T E N T I O N !

Switch off Machine electrically!

The one-way restrictor lets the air current pass in one way and throttles it in the other direction. The throttling effect can be adjusted by means of a setting screw.

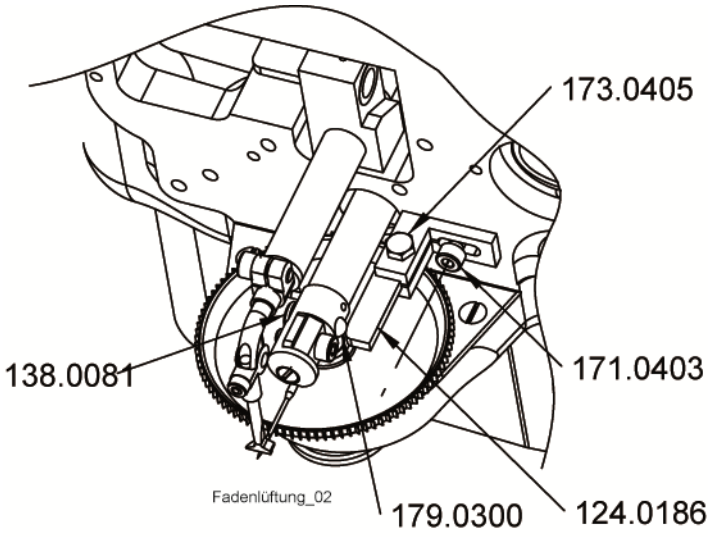
In the pneumatic lifting the one-way restrictor serves to open the front cup smoothly. It should be mounted in the direction shown in the connecting diagram.

Turning the set screw to the right the front cup opens smoother, turning it to the left it opens quicker.

3.10 Thread lifting mechanism at needle bar head

The fan tray 124.0186 for the thread ventilation (ball nut 179.0300 and bolt 138.0081) in the needle bar head must be adjusted so that the thread (free) is released when the gripper has taken the noose. The fan can be set by bar 124.0186 the screw 171.0403 to the left and to the right, and with the screw. (Fig. 28)

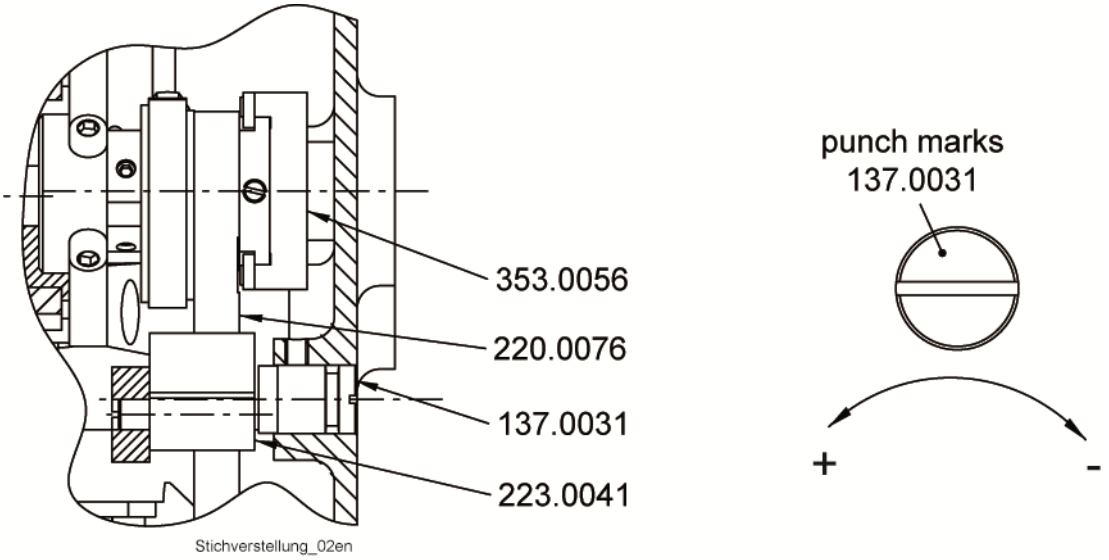
Fig. 28



3.11 How to adjust stitch regulating bolt 137.0031 (Fig. 29)

Eccentric 353.0056 and bolt 137.0031 have to be adjusted to the specific stitch length required. Make sure that wing 223.0041 and rod 220.0076 are correctly set. Bolt 137.0031 must be mounted with the dotting mark facing upwards because this mark indicates the stitch length, i.e. it moves - in direction of arrow - to the right (-) when the smallest, and to the left (+) when the longest stitch is being formed.

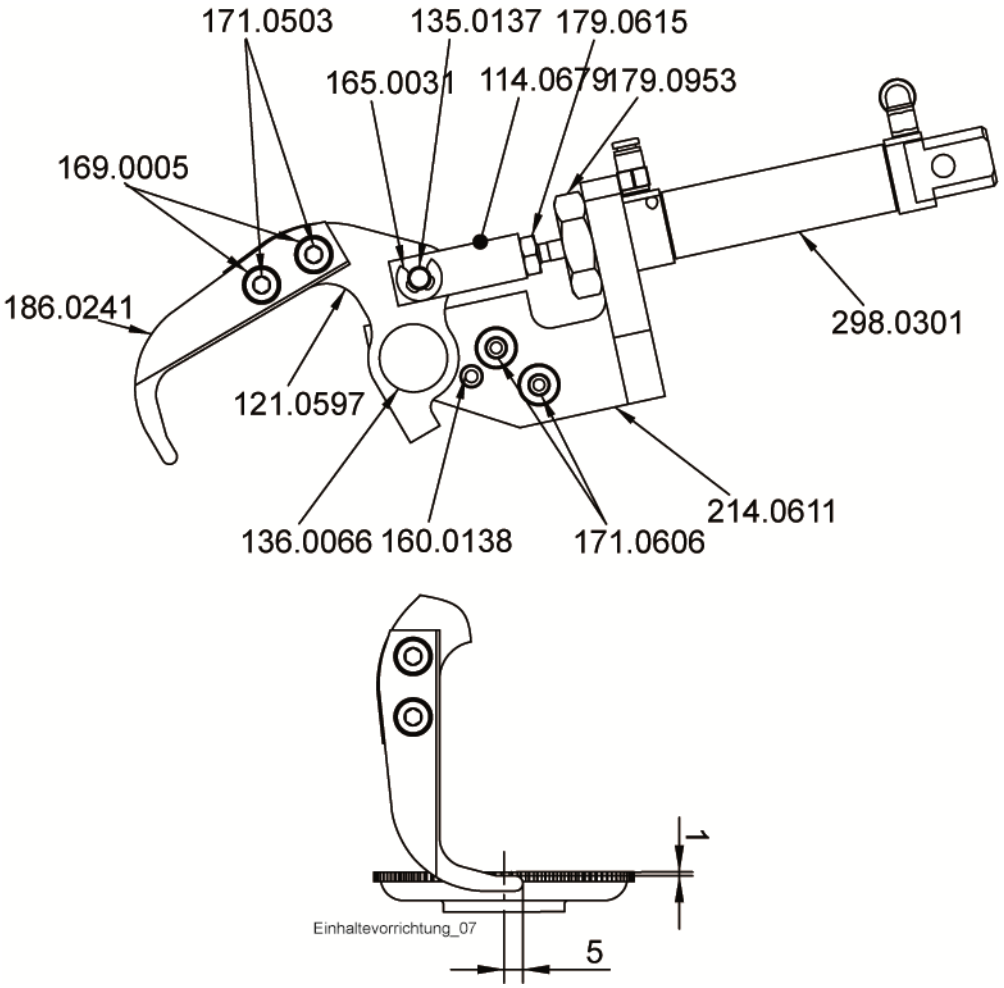
Fig. 29



3.12 Setting and mounting instructions for STROBEL gathering device No. 514.0611 (Fig. 30)

The gathering device is fixed to the cup support arm by means of 2 screws 171.0606. After swiveling the guide 186.0241 down between the feed cups, this should be placed approx. 1 mm below the cup edge and ca. 5 - 6 mm to the right of the needle.

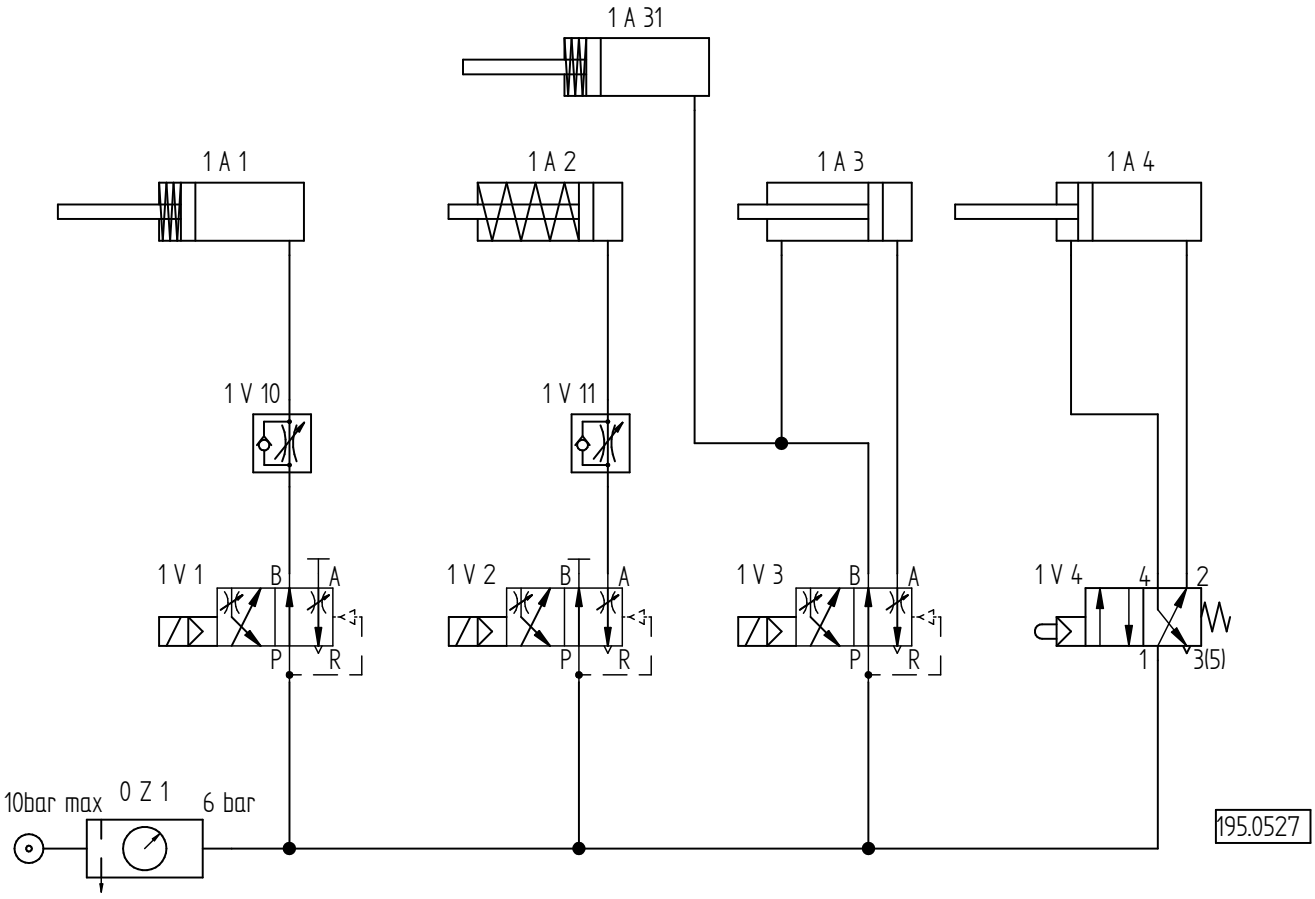
Fig. 30



STROBEL

259.00.46

Pneumatischer Schaltplan Kl. VTD410EV
Pneumatic circuit diagram cl. VTD410EV



0 Z 1	Wartungseinheit	Service unit
1 V 1	4/2-Magnetventil "Lüftung"	4/2-solenoid-way valve "lifting"
1 V 2	4/2-Magnetventil "Teillüftung"	4/2-solenoid-way valve "partial lifting"
1 V 3	4/2-Magnetventil "Einhalten"	4/2-solenoid-way valve "gather"
1 V 4	4/2-Mechanisch betätigtes Ventil "Kupplung"	4/2-mechanically actuated valve "clutch"
1 V 10	Drossel-Rückschlagventil "Lüftung"	One-way flow restictor "lifting"
1 V 11	Drossel-Rückschlagventil "Teillüftung"	One-way flow restictor "partial lifting"
1 A 1	Zylinder "Lüftung"	Cylinder "lifting"
1 A 2	Zylinder "Teillüftung"	Cylinder "partial lifting"
1 A 3	Zylinder "Einhalten"	Cylinder "gather"
1 A 31	Zylinder "Fadenspannungslüftung"	Cylinder "thread tension lifting"
1 A 4	Zylinder "Kupplung"	Cylinder "clutch"

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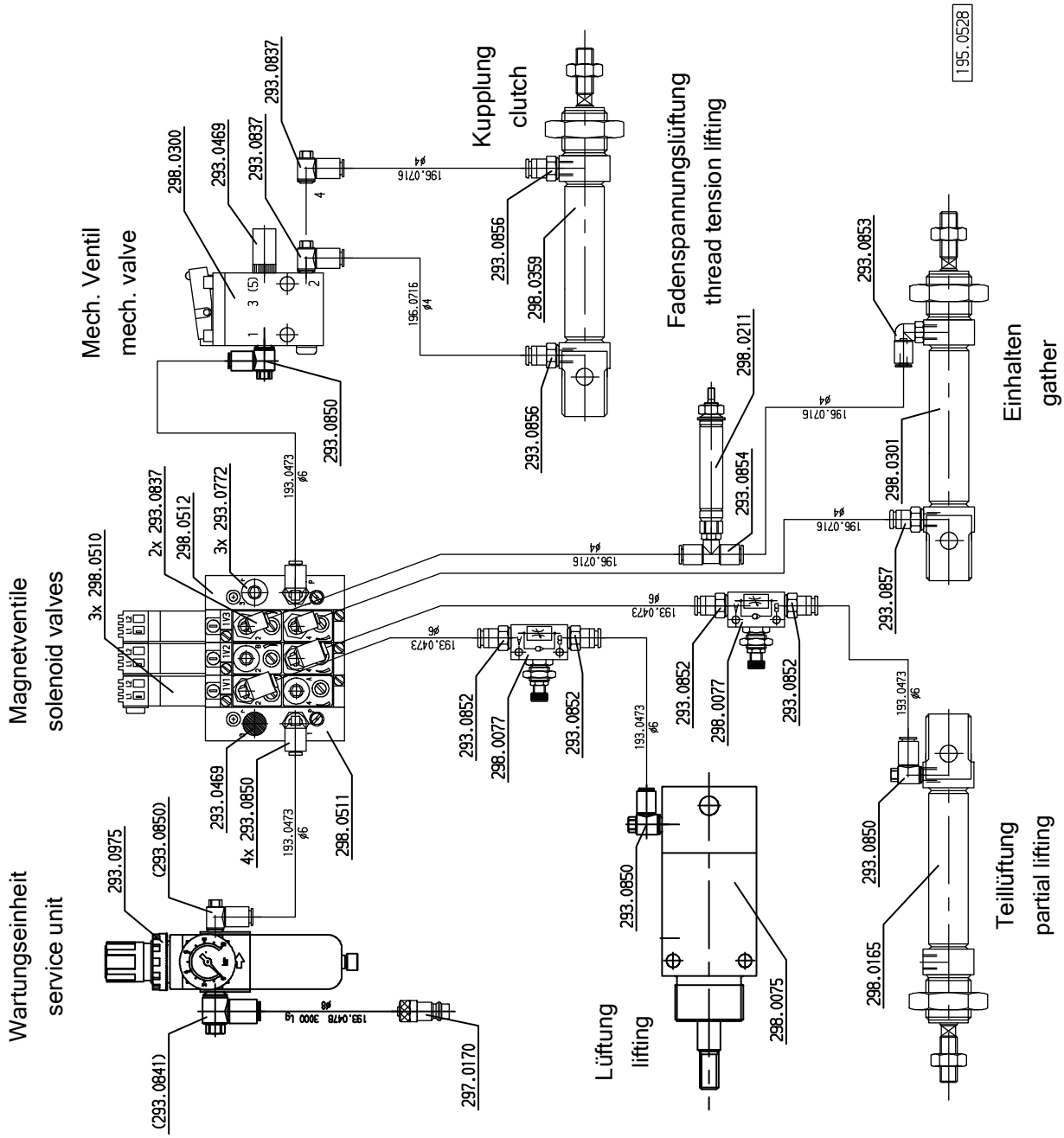
259.10.46

Pneumatischer Bauschaltplan Kl. VTD410EV
Pneumatic construction circuit diagram cl. VTD410EV

293.0469	2	Schalldämpfer R1/8
193.0473	3000	PA-Schlauch Ø6
193.0478	3000	PA-Schlauch Ø8
293.0772	3	Verschlußschraube R1/8
293.0837	4	L-Einschraubanschluß R1/8-4
293.0850	7	L-Einschraubanschluß R1/8-6
293.0852	4	G-Einschraubanschluß R1/8-6
293.0853	1	L-Einschraubanschluß M5-4
293.0854	1	T-Einschraubanschluß M5-4
293.0856	2	G-Einschraubanschluß R1/8-4
293.0857	1	G-Einschraubanschluß M5-4
293.0975	1	Wartungseinheit
196.0716	4650	PA-Schlauch Ø4
297.0170	1	Kupplungsstecker Ø8
298.0075	1	Spannzylinder
298.0077	2	Drossel-Rückschlagventil R1/8
298.0165	1	Miniatur-Zylinder
298.0211	1	Miniatur-Zylinder
298.0300	1	4/2-mech. betätigtes Ventil
298.0301	1	Miniatur-Zylinder
298.0359	1	Miniatur-Zylinder
298.0510	3	4/2 Wege-Magnetventil
298.0511	1	Eingangsmodul G1/8 links
298.0512	1	Eingangsmodul G1/8 rechts



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