FISCHBEIN

SEWING HEAD

”EMPRESS” MODEL : 200SC

MANUAL

CE

FABRICATION YEAR: …….

SERIAL NUMBER : .H.....

TYPE : .....…….200SC

WEIGHT : .....26,300 kg

NOISE LEVEL :…….....77 dB

EDITION : .....03 / 2007

VALID FROM SERIAL NUMBER 070400

N.M.C NUMBER.:……**50310B-200**

MANUFACTURED BY:
FISCHBEIN LLC
151 WALKER ROAD
STATESVILLE NC 28625 USA

ASSEMBLED BY :
FISCHBEIN S.A..
PAEPSEM BUSINESS PARK
BOULEVARD PAEPSEM, 18b
1070 BRUSSELS
BELGIUM

1 CONTENTS

2 FOREWORD

The contents of this manual are considered to be proprietary and confidential to **FISCHBEIN** and should not be reproduced without the prior written permission of **FISCHBEIN**.

Nothing contained in this document is intended to extend any promise, warranty or representation, expressed or implied, regarding the **FISCHBEIN** products described herein.
Any such warranties or other terms and conditions of products shall be in accordance with the standard terms and conditions of sale for such products, witch are available upon request.

FISCHBEIN reserves the right to make changes and improvements to products without notice and without incurring any obligation to make such changes or add such improvements to products sold previously.

The use of repair parts other than those included within the **FISCHBEIN** approved parts list may create hazardous conditions over which **FISCHBEIN** has no control.

Therefore **FISCHBEIN** cannot be held responsible or warranty for equipment in which non-approved repair parts are installed.

READ THIS MANUAL BEFORE INSTALLING, OPERATING OR PERFORMING MAINTENANCE ON THE 200 "EMPRESS" SEWING HEAD.

3 GENERAL.

3.1 Description.

The Fischbein heads 200S/C type are heavy duty, commercial sewing machines. These heads sew bags of different materials, such as plastic, woven poly-propylene, multi-wall paper bags, composite bags, jute bags and so forth.
Typical application for this sewing head, potatoes packing lines.
For correct operation, these heads are normally mounted on –Fischbein pedestals and conveyor systems. These enable adjustment of the system for bag height and bag speed through the system. A variety of infeeds and other special attachments are available to enhance and support the operation of the head.

The model 200 is intended for standard sewing, two thread applications.

3.2 General recommendations and warnings.

1. A certain amount of technical knowledge and familiarity with these types of equipment are required to operate and maintain the system. Proper eye, hand and foot protection must be worn while working on the 200S/C sewing heads.
2. The sewing head is not a stand-alone machine, therefore, care must be taken to provide the correct drive system and protection from the drive components.
3. Read this manual carefully before making any changes to the sewing head.
4. Always use genuine Fischbein parts.
5. Use the genuine screws, because they are not metric size.
6. Turn off and lock out air and power sources before performing maintenance.
7. When running let the machine do the work. Do not pull the bag or materials through it.
8. The sewing head is not suitable for operation in an area where explosive materials are present (explosive gas, vapor or liquids.)
9. When used in dusty environment , minimum IP54 electrical equipment must be used.
10. Frequently clean the machine to prevent accumulation of dust. This is to prevent accumulation of material that may cause a fire explosion and or mal function.
11. Any sources of leaks of the machine's lubricating oil must be repaired immediately to prevent possible contamination of the product to be packed and safety hazards around the system.
12. Do not clean internally with water, it is recommended to use Fischbein cleaning oil ref: 12802.

13. Don't use aggressive cleaning products as they may damage the rubber seals.
14. The recommended sewing thread is Fischbein Premium 20/4 ref: 25154…., available in various colours.
15. When building the sewing head into other equipment, it is necessary to install a safety device on looper door and drive guard.
16. The sewing head is suitable for closing bags or sewing together pieces of material (not clothing), paper or similar. The maximum thickness of the material is 8 mm for soft materials all kind. It is not possible to sew very thin materials together (thin plastic or paper bags).
17. Don't put metal objects in to the sewing area.
18. Keep always your fingers away from the needle, looper area and the knife area.
19. Use only the Fischbein Lubrication oil ref: 31080 MOBIL SHC 626 for the sewing head.
20. Don't operate the machine without all guards in place.
21. During the maintenance or cleaning of the sewing head, be sure that the sewing head cannot run. (changing thread, remove the dust, etc…)
22. If in doubt, consult your dealer or Fischbein Brussels.

3.3 Characteristics .

Maximum speed: ……2600 rpm

Minimum stitch length: ……7,0mm

Maximum stitch length:……11,5 mm

Weight:……26,3 Kg

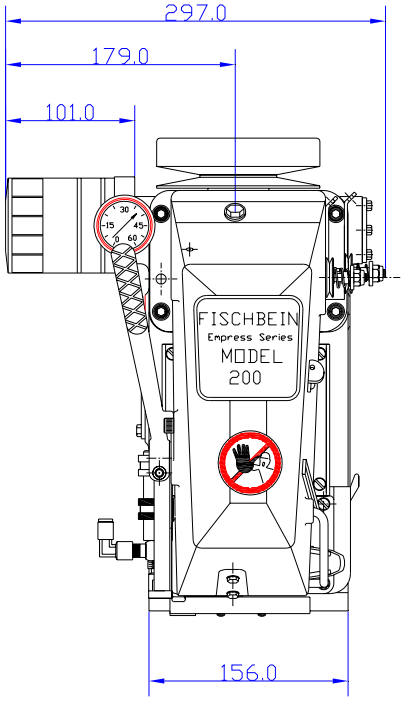
Oil content:……0,950 Litres

Oil type:……MOBIL SHC 626

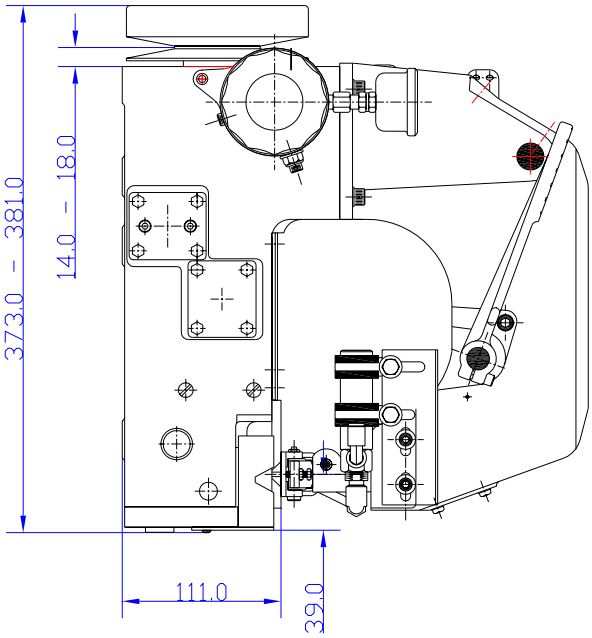
Maximum material thickness: ……..8 mm

4 Dimensional drawings.

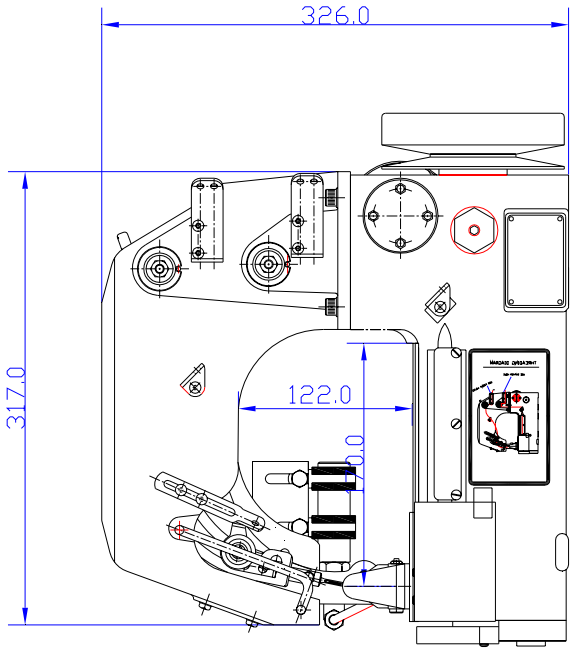
4.1 Front View



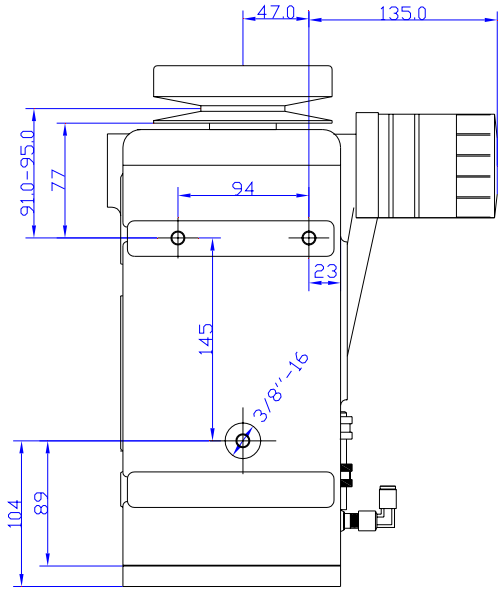
4.2 Left View



4.3 Right View



4.4 Back View



5 INSTALLATION .

5.1 Unpacking sewing head.

The Fischbein sewing head is packaged to protect the unit during normal shipping, storage and handling. Each sewing head is packed in a corrugated box with cardboard padding around it. The box is than taped shut. Before the unit is unpacked, inspect the box for any sign of damage incurred during shipping. After the unit is unpacked inspect the sewing head for damage. Report any damage in writing to the shipper and your authorized Fischbein representative.

The sewing head is very heavy and can be awkward to handle alone. For safety of the installers and the sewing head, a dolly platform should be used to transport the sewing head.

5.2 Drive recommendations.

For this sewing head we recommend a 3 phase motor with a minimum power rating of 1,1 Kw , 1½ Hp and a speed of 2780 rpm Provide an adequate guarding.

WARNING :
MAXIMUM ROTATION SPEED FOR THE SEWING HEAD IS 2600 RPM AND MUST NOT BE EXCEEDED.

5.3 Lubrication.

Refer to Figure 1. The sewing head is delivered with a screw in the breather plug. This must be removed prior to starting up the head. Failure to do so will result in build up of internal pressure and consequent damage to seals and other components, with possible injuries to the operator.
The sewing head is factory filled with 0,95 litre of oil.

5.3.1 Pre-start up checks:

- ✓ Oil level (indicated at the oil window located near the bottom left hand side of the housing.
- ✓ Check for oil leaks. If any are found, locate and repair.
- ✓ After a few seconds, the oil pressure gauge should indicate a pressure between 15 PSI (= 0,1 Mpa = 1 bar) and 40 PSI (= 0,28Mpa = 2,8 bar).

WARNING:
DO NOT RUN THE MACHINE WITH OIL PRESSURE BELOW 15 PSI (= 0,1 Mpa = 1 bar).
NO SUBSTITUTION OILS ARE ACCEPTED. USE OF ANY OTHER OIL WILL VOID THE PRODUCT WARRANTY.

5.3.2 Oil lubrication maintenance.

- ✓ Replace the oil and oil filter every 1000 hours of operation (see section 2.4)
- ✓ Approximately 0,95 litre will adequately fill the machine. Fischbein MOBIL SHC 626 (ref: 31080) is recommended.
- ✓ Check the oil level when the machine is operating and the pressure is in the specified range 15 PSI (= 0,1 Mpa = 1 bar) – 40 PSI (= 0,28 Mpa = 2,8 bar). In the event the oil level falls below the marker line, add oil until level is reached.

5.4 Maintenance .

NOTE: A certain amount of technical knowledge is required to perform any maintenance on Fischbein sewing heads type 200S/C.

5.4.1 Daily .

- ✓ Keep the machine free of dust.
- ✓ Clean with compressed air, or use a vacuum cleaner, this is the best.
- ✓ Check all seals for oil leaks before start up.
- ✓ Lubricate knife blades and presser foot hinges manually with standard lubricating oil.

5.4.2 Periodic – oil change.

Oil changes are part of periodic maintenance and performed every 1000 hours of operation.

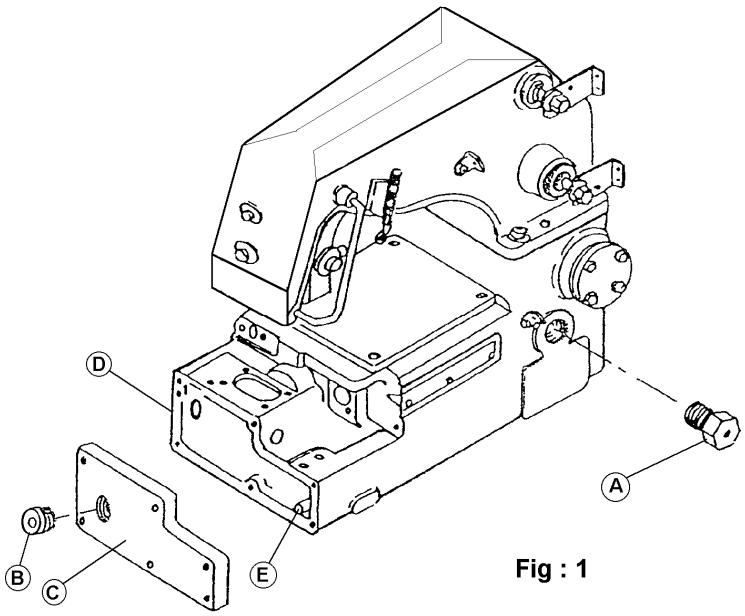


Fig : 1

01 Lock out compressed air and electrical power so the machine cannot run.
02 Remove breather plug **(A).**
03 Unscrew the drain plug **(B)** in the bottom of the cover **(C).**
04 Drain the used oil into a container.
05 Remove metal particles and dirt from the drain plug **(B).**
06 Take the drain plug **(B)** and fit a new Teflon seal around the drain plug
07 Screw the plug into the bottom plate **(C)**.
08 Fill the machine with the correct quantity of oil through the breather plug hole **(A)** , a funnel and flexible tube are provided with the toolkit.
09 Screw back the breather plug **(A).**
10 Follow the recommendations for daily start up, see point 2.5.

5.4.3 Periodic – oil filter replacement.

Oil filter replacement is part of the periodic maintenance performed after 1000 hours of operation.

- Lock out compressed air and electrical power so the machine cannot run.
- Fill the new filter with oil.
- Use a genuine Fischbein oil filter ref: 15054-E.
- Coat the seal on the new oil filter with a thin film of oil.
- Remove the old oil filter.(be careful not to spill the oil in the filter)
- Install the new filter (hand tightening is sufficient).
- Run the sewing head in short, 2 or 3 second cycles until the filter is filled and the pressure falls in the normal 15 PSI (=0,1 Mpa= 1bar) to 40 PSI (=0,28 Mpa= 2,8bar) range.

5.5 Start up recommendations.

5.5.1 Daily use :

Initially start the machine in short 2 to 3 second cycles until the correct oil pressure is reached.

5.5.2 Sporadic use :

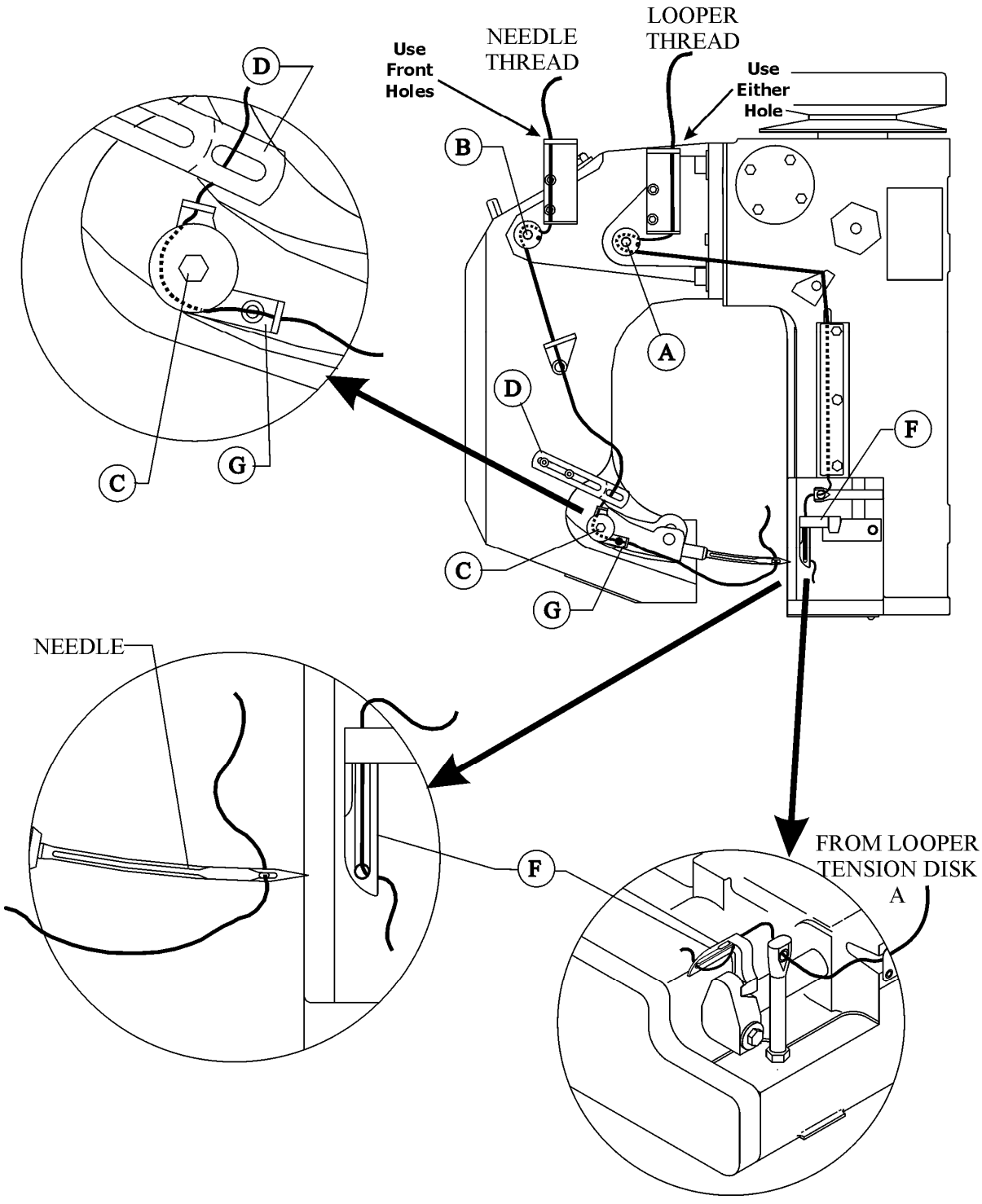
Initially see 5.5.1. Then follow the machine to warm up by running steadily for a few minutes before closing any bags. This also applies for start up in very cold environment. Check oil pressure and safety devices on the machine.

5.5.3 Running after prolonged shut down. :

To eliminate eventual condensation, replace the oil and follow procedure 5.5.2.

6 GENERAL OVERVIEW THREADING

WARNING: ALWAYS LOCK OUT THE ELECTRICAL AND PNEUMATIC SYSTEMS BEFORE WORKING ON THE SEWING HEAD!



7 THREADING THE SEWING HEAD.

1. Ensure that the machine cannot start, but it must be possible to turn it manually.
2. Insert the needle thread as shown in Fig:2.
3. At the needle, the thread is laced through from the machine's entry side to the needle.
4. Ensure that the thread runs properly through the thread tensioning discs.
5. Feed the thread towards the looper, as shown in Fig:2.
6. At the looper, the thread should first go through the top hole and then through the bottom hole. Also here, about 10 cm should be left sticking out of the looper (see small Figure:2.1).
7. To complete chain off a piece of bag material should be placed between the presser foot and the throat plate before starting the machine. If this procedure is not followed, a knot may be formed around the looper and the machine will not work properly.

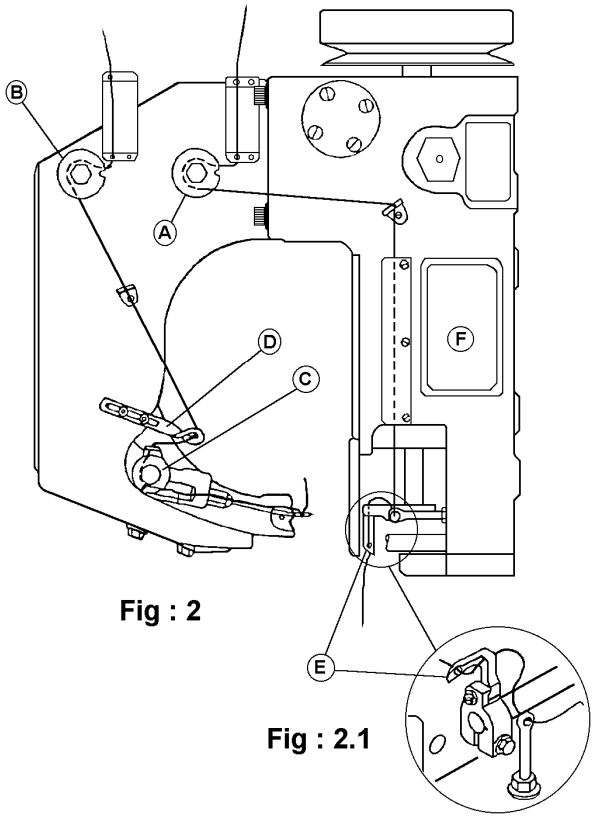


Fig : 2

Fig : 2.1

8 THREAD TENSION ADJUSTMENT .

8.1 Looper thread tension (A).

The tension must be a very low one it should run very smoothly and the tension should be barely noticeable when pulling the thread by hand.

8.2 Needle thread tension (B).

The needle thread tension is adjusted with the thread tensioner (B). The needle thread tension should be firm and put a noticeable drag on the thread. It also varies with stitch length and thickness of material to be sewn.

This adjustment can be combined with thread pull off position (D). On the needle arm thread tensioner (C) avoids thread pulled by the thread pull off from sagging near the needle.
Tension is very slight and the adjustment is fixed. Factory settings of tension are made to a 4-ply paper bag with a stitch length of 9 mm which is valid in most cases.

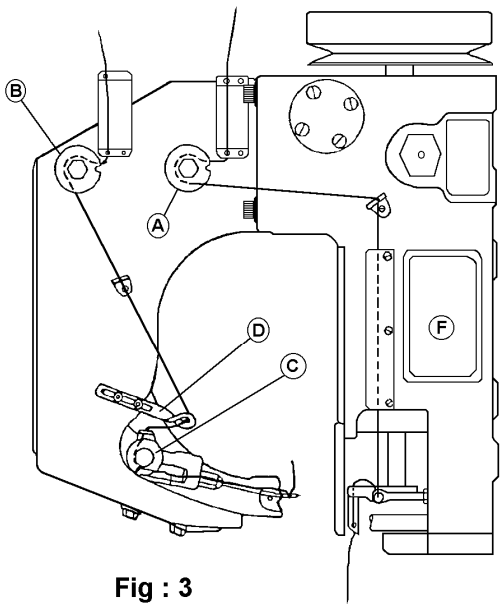


Fig : 3

8.3 Thread pull off adjustment (Fig:4).

Figure 4 shows the factory setting. this is suitable in many cases.

For thin materials, distance X must be longer.

For thicker materials, distance X must be shorter.

If the stitch is to loose, try first to adjust with the needle thread tension before shortening the distance X of the thread pull off.

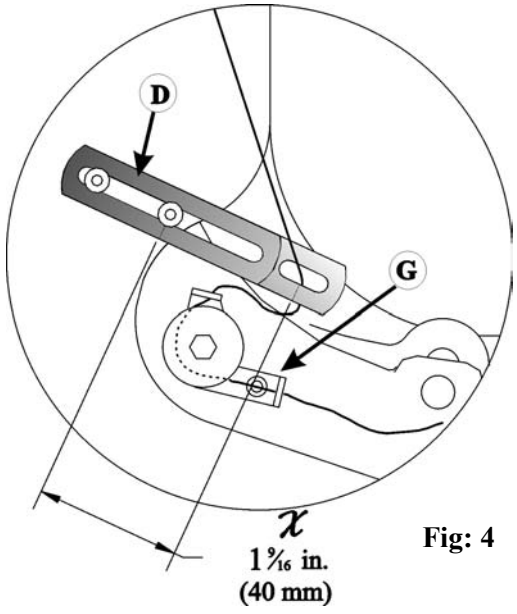


Fig: 4

9 STITCH LENGTH ADJUSTMENT.

Standard factory setting of the stitch length is +/- 11,5mm. Other stitch lengths can be set according customer requirements.
If it need to be changed, please follow the procedure below.

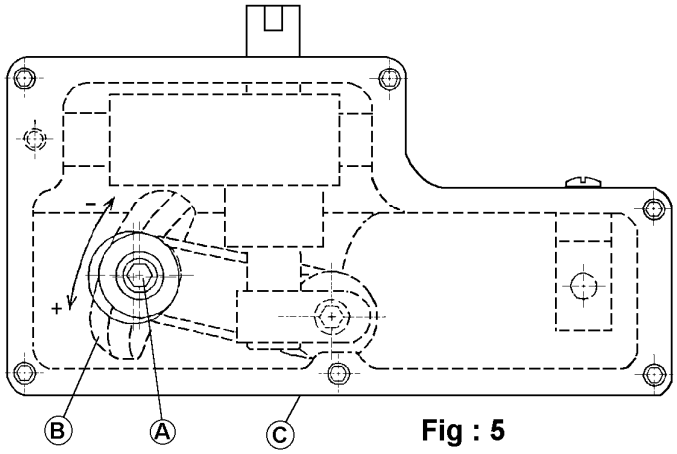


Fig : 5

- Position the sewing head standing on its pulley, so that no oil can flow out when removing the bottom cover. Prevent the machine rotating on its pulley.
- Remove the oil drain plug from the bottom cover (C).
- Be sure the feed dog is down.
- With the appropriate socket head wrench, loosen (but not remove) the set screw SC142878 (A).
- By shifting the set screw (A) on the pivot (B), stitch length can be changed (towards the throat plate, shorter stitch and away from the throat plate, longer stitch). Do not adjust to far as this can result in damage to the head.
- After correct setting, install the drain plug. Apply new teflon sealing tape before doing so.
- Stitch length can vary between 7mm and 11,5mm.
- Changing the stitch length also involves synchronization of the sewing head to conveyor and infeed (see point 12.).

10 SEAL REPLACEMENT.

A seal must be handled with care.

Rubber seal always needs oiling before installation. Never install a dry seal.

Grease or use special sealant liquid when installing a new cork seal.

11 NEEDLE REPLACEMENT.

-Loosen screw **(A)** (see Fig :6) and remove the needle **(B).**

-Install the new needle with the flat side **(C)** towards the set screw.

- Be sure the new needle is inserted into the needle chuck **(D)** as far as it will go.

- Tighten the screw **(A)** firmly but not over tighten**.**

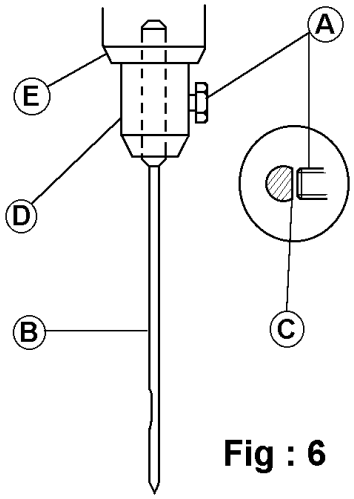


Fig : 6

12 FEED DOG- THROAT PLATE REPLACEMENT.

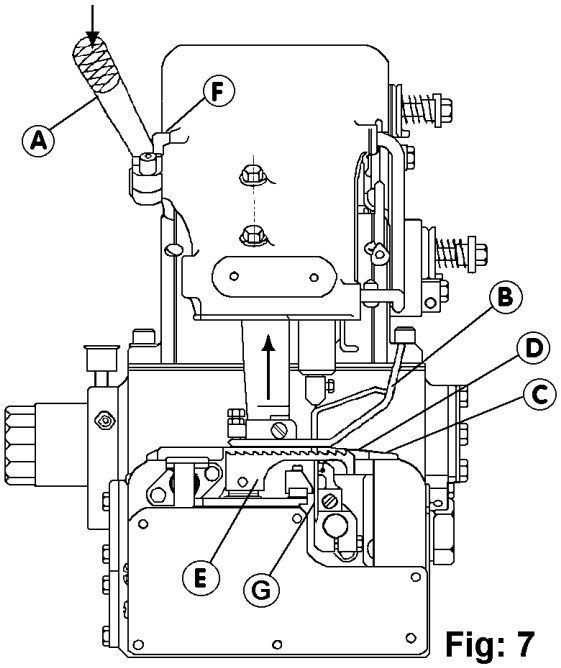


Fig: 7

DO NOT FORGET TO REMOVE SPACER BETWEEN LEVER (A) AND SCREW (F).

Be sure the machine cannot run

Press lever **(A)** downwards, this will bring presser foot **(B)** upwards.

Put a spacer of +/- 6mm thick between lever **(A)** and screw **(F)**
Remove the needle **(G).**
Remove the guarding at the bottom edge.

Remove the throat plate **(D)** by removing the screws **(C).** If throat plate replacement fit fix knife on the new throat plate and replace the throat plate, re-assemble in reverse sequence.

If feed dog replacement loosen and remove the feed dog **(E).**

Fit the new feed dog and re-assemble in reverse sequence.

13 PRESSER FOOT PRESSURE ADJUSTMENT.

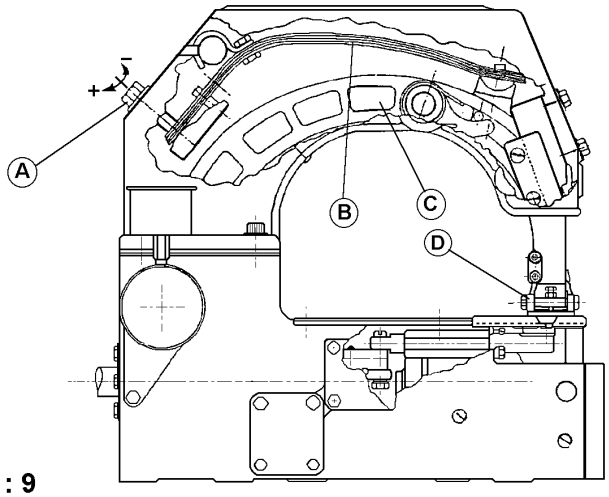


Fig : 9

Study Fig : 9 carefully.

Tightening screw **(A)**, will increase the pressure by spring **(B)** on lever **(C)** and therefore on presser foot **(D).**

Unscrewing will decrease the pressure

NOTE :
DO NOT COMPLETELY UNSCREW (A), TO AVOID POSSIBLE DAMAGE.

14 FINE TUNING OF THE SEWING MACHINE.

14.1 Presser foot adjustment.

Examine Fig :10. The presser foot **(B)** should not be parallel with the throat plate **(D),** but there must be a small gap **(µ)** at the infeed end of the presser foot **(B).**

Gap **(µ)** is adjusted by turning screw **(E).**

Gap **(µ)** is increased by turning screw **(E)** clockwise and decreased by turning the screw **(E)** counterclockwise.

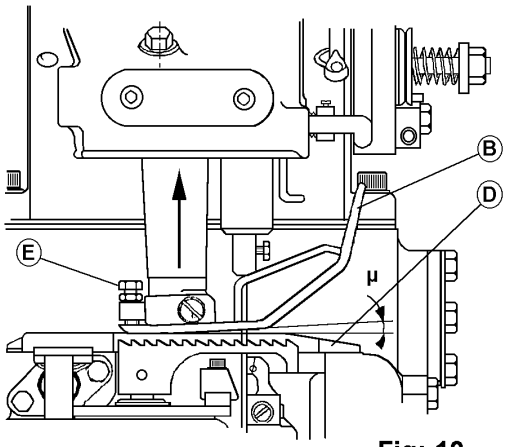


Fig: 10

14.2 Needle and needle guide adjustment.

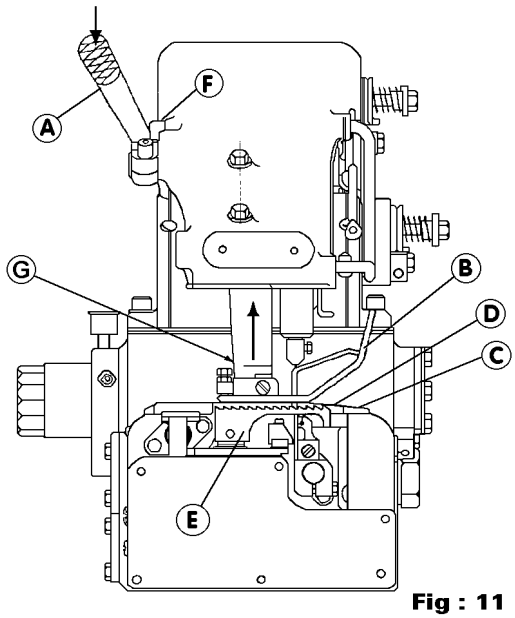


Fig : 11

For adjusting these follow Fig:11.

Presses lever **(A)** downward and put a plate +/- 6mm thick between handle **(A)** and screw **(F).**

Remove presser foot **(B)** by loosening screw **(G).**

Remove throat plate **(D).**

Remove feed dog **(E).**

Then the machine appears as in Fig:12

Adjust the distance between needle guide **(I)** and needle **(D).**
See Fig : 13.

Always fit a new needle before starting to adjust the machine.

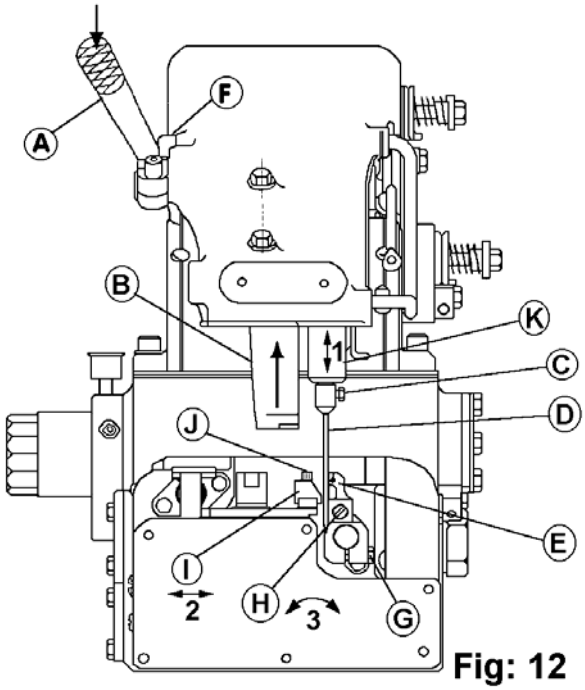


Fig: 12

The distance between needle **(D)** and needle guide **(I)** is achieved by unscrewing screw **(J),** the needle guide **(I)** can be pushed forward or backward.

Tighten the needle guide back again into its holder **(L)** after the correct distance has been set.
See Fig: 13.

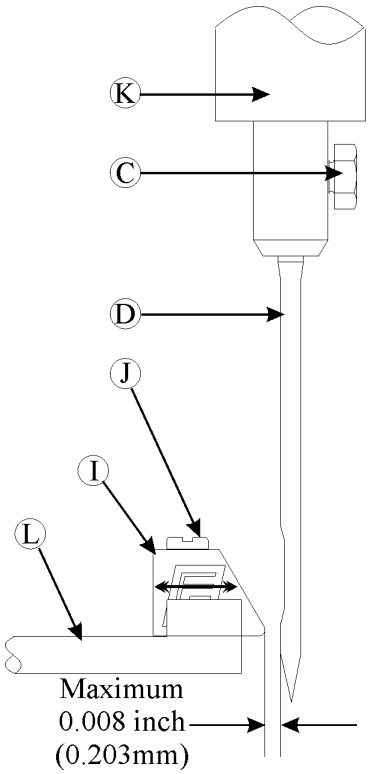


Fig:13

14.3 Needle and looper clearance.

It is very important that the needle **(D)** should not touch the looper **(M)** during the forward movement of the looper **(M),** while it passes the scarf of the needle **(D).**

If the distance is too big, the adjusting screw **(N)** can be used to loosen the looper **(M)** and move it on its holder **(O),** see Fig : 14, until the right distance is obtained.

Tighten securely and check again.

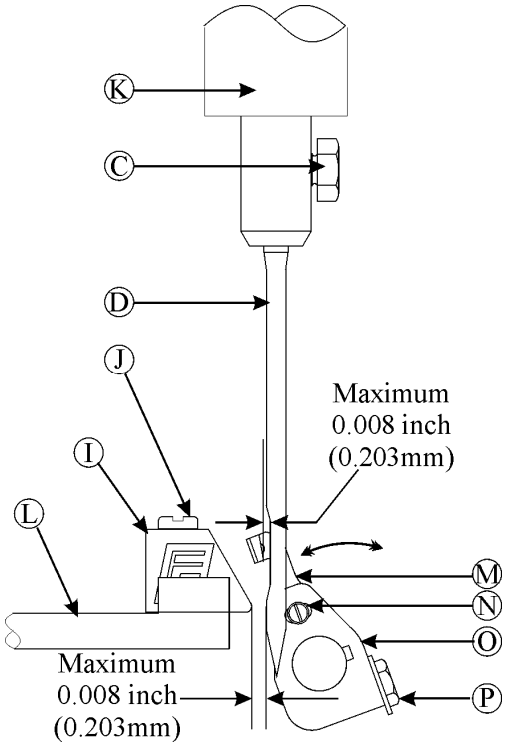


Fig:14

14.4 Approximate setting of the distance between needle and looper.

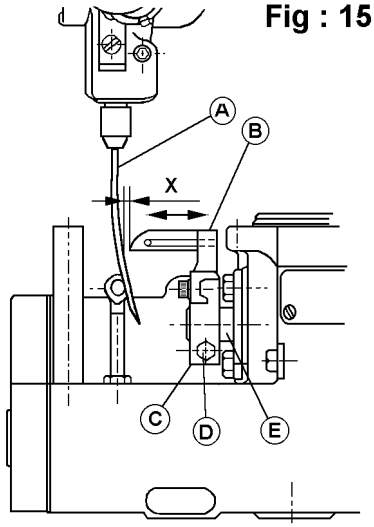


Fig : 15

To do this, we turn the machine and look from the feed side. Fig : 15 gives an overview.

For adjustment of the distance **X**, we use the adjusting gauge 15162 **(F).**

This distance is set as the looper **(B)** has reached the end of its backwards travel (Fig :15) If distance is not correct (see Fig : 15-16) loosen the screw **(D),** the looper holder **(C)** can be moved along its shaft **(E)** in a longitudinal direction.

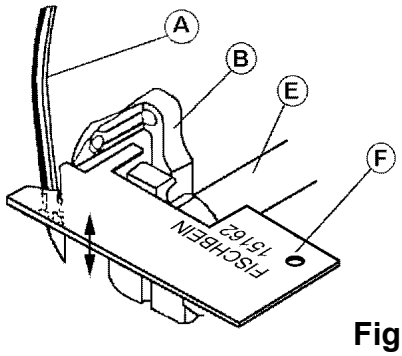


Fig:16

Once the correct distance (see Fig :16) is achieved, screw **(D)** can be retighten.

14.5 Fine tuning of needle and looper distance.

1. Refer to **Fig:.17**. Check to see if the bottom of the eyelet in the looper (**B**) lines up with the bottom of the hole in the needle (**A**) by rotating the drive pulley (not shown) during the motion of the looper moving forward. This should be checked with the needle (**A**) in front of the looper (**B**) as well as behind it.
2. If the hole and slot do not line up, perform the adjustments described in **Section 13**.
3. After the adjustments are made, re-check to see if the slot and hole line up.

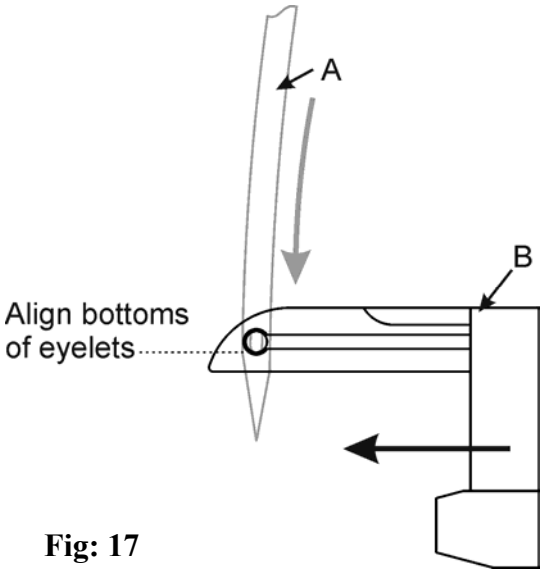


Fig: 17

14.6 Feed dog adjustment.

This is set at the factory.

The height adjustment (see Fig:18), this is measured with the throat plate in place and the feed dog in the uppermost position.
This brings the feed dog **(C)** above the throat plate **(B).** This value is equal to the thickness of the gauge **(A). (ref: 15162)**

If the feed dog **(C)** is not properly adjusted, loosen screw **(D).** Move the feed dog **(C)** up or down to achieve the correct height.
Tighten screw **(D).** In Fig: 18A is the reference D used for the shaft of the feed dog.

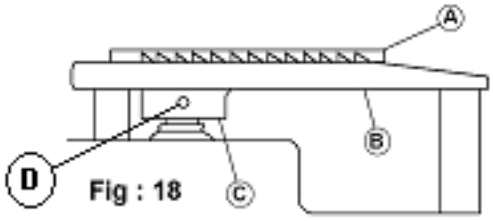


Fig : 18

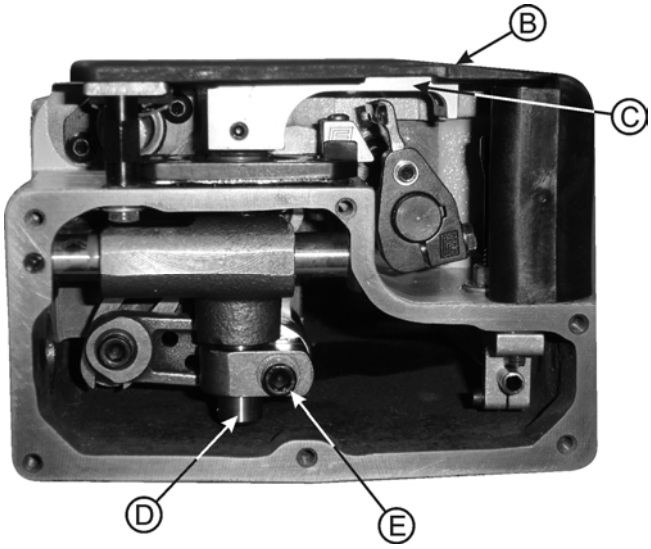


Fig:18A

14.7 Feed dog parallel to the throat plate adjustment.

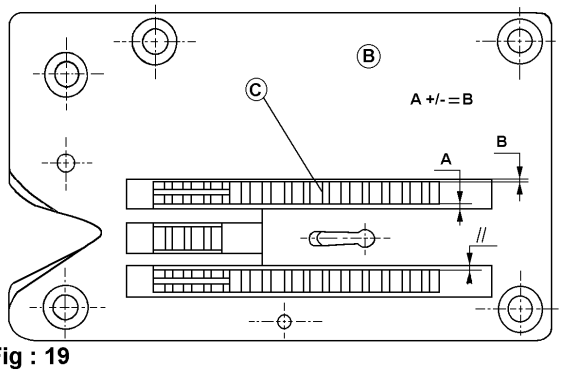


Fig : 19

-Refer to Fig:19. Look at the feed dog **(C)** from the top. The sides of the feed dog **(C)** must be parallel to the sides of the slots in the throat plate **(B).**

- If the sides of the feed dog **(C)** are not parallel to the throat plate **(B),** loosen the screw **(D** in Fig:18**).**

- Turn the feed dog **(C)** until the sides are parallel.
- Tighten the screw **(D** in Fig: 18**)**.
- Recheck the height of the feed dog **(C)** relative to the throat plate **(B)** with gauge**.** see 10.6.

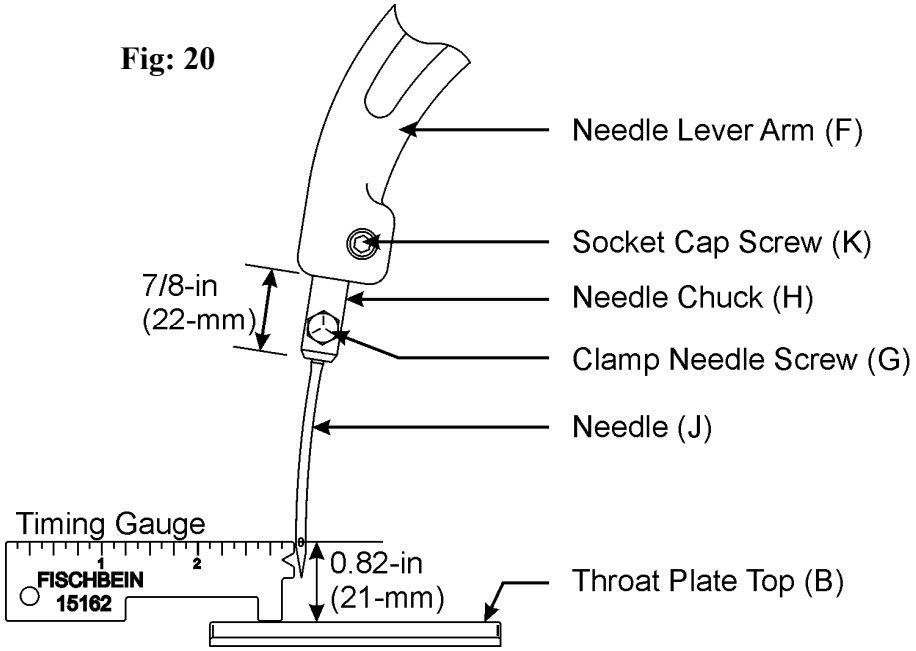
14.8 Needle holder adjustment.

The correct setting is fixed at the factory. Do not remove the needle holder **(H)** from the needle lever **(F)** if this is not necessary.

If it is necessary to replace the needle holder **(H)** follow these steps.

- ✓ See Fig:20. Remove the needle **(J)** from the needle holder **(H)** by loosening the screw **(G).**
- ✓ Remove needle holder **(H)** from the needle lever **(F)** by loosening screw **(K).**
- ✓ Measure the length **X** of the needle holder as shown in Fig:21. Set the new needle holder to the same length **X**.
- ✓ Place the new needle holder **(H)** in the needle lever **(F).** If adjustment is required follow Fig: 20 and use the gauge reference: 15162.

Fig: 20



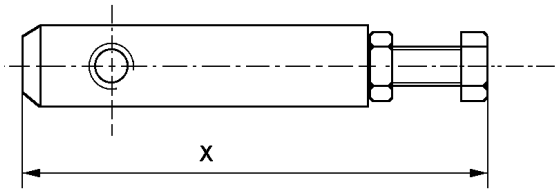


Fig : 21

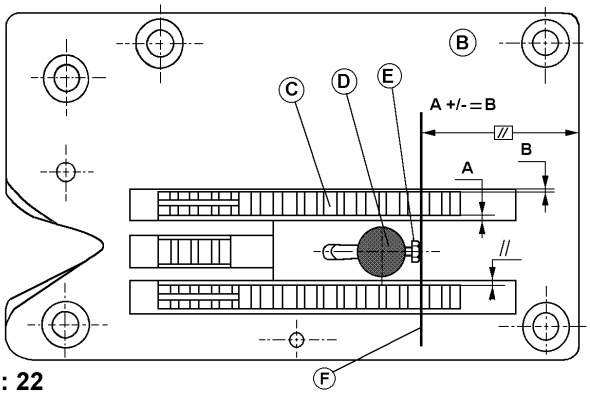


Fig : 22

See Fig:22. Check the parallelism of the new needle holder **(D))** using the gauge **(F)** part 15162 where it is parallel to the front edge of the throat plate. Press the gauge flat against the screw **(E).**

If the needle holder **(H)** is not parallel, loosen screw **(K** Fig:20**)** and rotate the needle holder **(H)** until it is parallel. Tighten screw **(K).**

15 SEWING HEAD SPEED ADJUSTMENT AND SYNCHRONISATION WITH THE SYSTEM.

The sewing head is equipped with a variable pulley, which can be turned with a minimum ¼ turn.

By turning the pulley open, the speed can be increased (smaller pulley). If the pulley is closed, the speed is reduced.

The number of revolutions of the sewing head is measured with a Tachometer.

In order to synchronies the machine, it is necessary to know the speed of the machine in M/min.

This is the formula to calculate the speed.

$$V = \frac{\text{stitch length x number of revolutions}}{1000} = \text{M/min}$$

Example: sewing head turns at 1650 rpm.

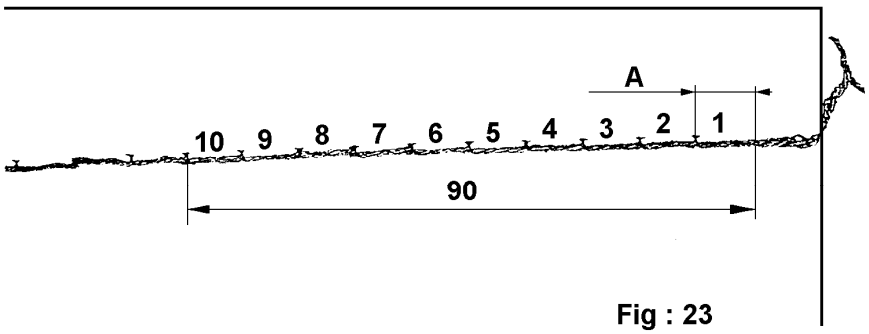


Fig : 23

In order to find out the stitch length, take a bag that has been stitched on the sewing head, with the individual thread facing forward.
At the end of the bag, 10 stitches should be counted, and the overall distance is then divided by 10 (see Fig:23).

After measurement, a stitch length of 90/10, or 9 mm is obtained.

Therefore, $V = \frac{9 \times 1650}{1000} = 14{,}85$ M/min

In order to synchronise the sewing head with the installation, first measure the speed of the transport belt.

Then the speed of the sewing head is adjusted upwards by about 2% (e.g. transport belt 14,5 M/min – sewing head at 14,85 M/min.

If there is an infeed system, this should be adjusted to the same speed as the transport belt.

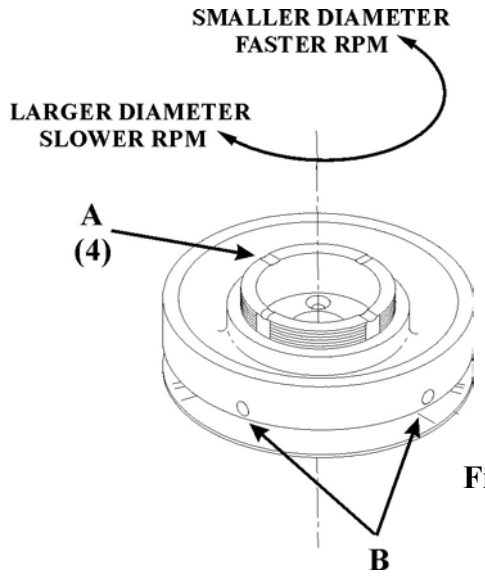


Fig: 24

NOTE :

When adjusting the speed of the sewing head, ensure that the adjustment screws (B) are in the flat grooves (A) of the pulley core before tightening. If not, the pulley will be irreparably damaged (see Fig: 24).

Compared with a sewing head which has been run in, the speed of new machines or machines in a cold environment will be lower.

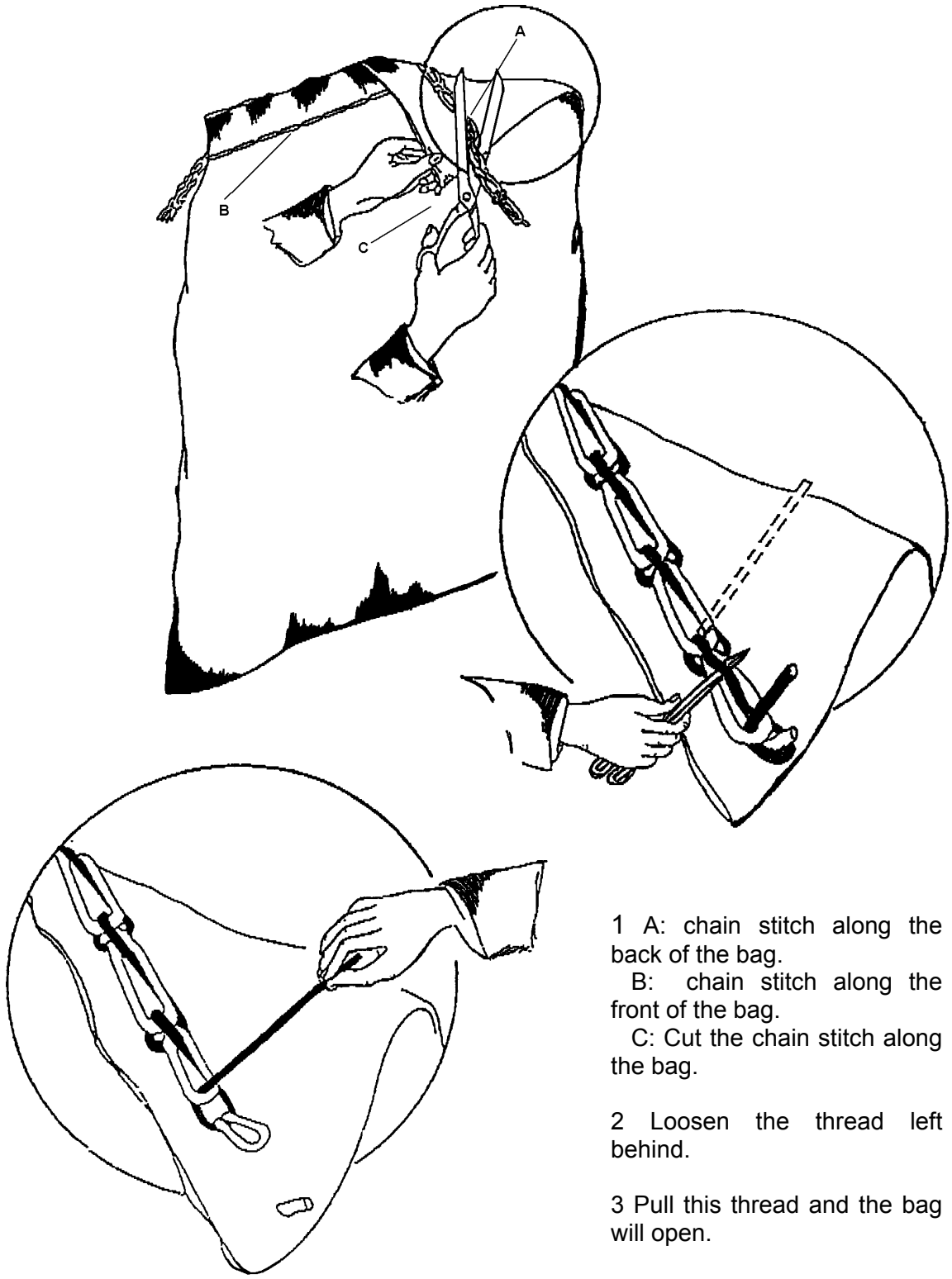
16 SPEED TABLE .

STITCH	11,5mm	11mm	10,5mm	10mm	9,5mm	9mm	8,5mm	8mm	7,5mm	7mm
V=9M/min	783RPM	818RPM	857RPM	900RPM	947RPM	1000RPM	1059RPM	1125RPM	1200RPM	1286RPM
V=10M/min	870RPM	909RPM	952RPM	1000RPM	1053RPM	1111RPM	1176RPM	1250RPM	1333RPM	1429RPM
V=11M/min	957RPM	1000RPM	1048RPM	1100RPM	1158RPM	1222RPM	1294RPM	1375RPM	1467RPM	1571RPM
V=12M/min	1043RPM	1091RPM	1143RPM	1200RPM	1263RPM	1333RPM	1412RPM	1500RPM	1600RPM	1714RPM
V=13M/min	1130RPM	1182RPM	1238RPM	1300RPM	1368RPM	1444RPM	1529RPM	1625RPM	1733RPM	1857RPM
V=14M/min	1217RPM	1273RPM	1333RPM	1400RPM	1474RPM	1556RPM	1647RPM	1750RPM	1867RPM	2000RPM
V=15M/min	1304RPM	1364RPM	1429RPM	1500RPM	1579RPM	1667RPM	1765RPM	1875RPM	2000RPM	2143RPM
V=16M/min	1391RPM	1455RPM	1524RPM	1600RPM	1684RPM	1778RPM	1882RPM	2000RPM	2133RPM	2286RPM
V=17M/min	1478RPM	1545RPM	1619RPM	1700RPM	1789RPM	1889RPM	2000RPM	2125RPM	2267RPM	2429RPM
V=18M/min	1565RPM	1636RPM	1714RPM	1800RPM	1895RPM	2000RPM	2118RPM	2250RPM	2400RPM	2571RPM
V=19M/min	1652RPM	1727RPM	1810RPM	1900RPM	2000RPM	2111RPM	2235RPM	2375RPM	2533RPM	
V=20M/min	1739RPM	1818RPM	1905RPM	2000RPM	2105RPM	2222RPM	2353RPM	2500RPM		
V=21M/min	1826RPM	1909RPM	2000RPM	2100RPM	2211RPM	2333RPM	2471RPM			
V=22M/min	1913RPM	2000RPM	2095RPM	2200RPM	2316RPM	2444RPM	2588RPM			
V=23M/min	2000RPM	2091RPM	2190RPM	2300RPM	2421RPM	2556RPM				
V=24M/min	2087RPM	2182RPM	2286RPM	2400RPM	2526RPM					
V=25M/min	2174RPM	2273RPM	2381RPM	2500RPM						
V=26M/min	2261RPM	2364RPM	2476RPM	2600RPM						
V=27M/min	2348RPM	2455RPM	2571RPM							
V=28M/min	2435RPM	2545RPM								
V=29M/min	2522RPM									

V= S x T / 1000 **T= V / S x 1000**

S= stitch length
T= revolutions per min.
V= speed in M/min

17 OPENING A SEWN BAG.



1 A: chain stitch along the back of the bag.
B: chain stitch along the front of the bag.
C: Cut the chain stitch along the bag.

2 Loosen the thread left behind.

3 Pull this thread and the bag will open.

18 TROUBLESHOOTING.

FAULT	CAUSE	SOLUTION
1. Machine runs but does not sew.	1. No thread. 2. Broken thread. 3. Broken needle. 4. Loose drive belt	1. Fit a new cone. 2. Re-thread sewing head. 3. Replace needle. 4. Tighten drive motor belt.
2. Poor quality chain stitch	1. thread is stuck round the looper or needle. 2. Poor thread tension. 3. Looper setting wrong. 4. Needle setting wrong. 5. Looper-needle setting wrong 6. Needle guides setting wrong.	1. Remove the thread and re-thread the sewing head 2. Adjust tension. 3. Re-adjust looper. 5. Re-adjust needle. 6. Readjust looper-needle setting. 7. Re-adjust needle guide.
3. No chain stitch.	1. Bent needle. 2. Dull needle. 3. Poor thread tension. 4. Feed dog worn out. 5. Presser foot worn out.	1. Replace needle. 2. Replace needle. 3. Check thread tension. 4. Replace feed dog. 5. Replace presser foot.
4. Poor stitch.	1. Throat plate damaged. 2. Presser foot pressure incorrect. 3. Feed dog worn. 4. Wrong thread tension.	1. Replace throat plate. 2. Adjust pressure. 3. Replace feed dog. 4. Adjust thread tension.
5. Thread constantly breaks.	1. Thread stuck or blocked around thread tensions. 2. Wrong thread tension. 3. Needle worn or bent. 4. Looper worn or bent. 5. Throat plate worn or damaged. 6. Needle overheating. 7. Thread tension to high. 8. Poor thread.	1. Check thread guide or adjustment. 2. Re-adjust tensions. 3. Replace needle. 4. Replace looper. 5. Replace throat plate. 6. Use another type of bag, a needle cooler or lubricated thread. 7. Less tension. 8. Higher quality of thread.

FAULT	CAUSE	SOLUTION
6. Needle breaks.	1. Sewing too close to the product. 2. Poor adjustment of the presser foot with the throat plate. 3. Needle is improperly located in the sewing lever. 4. Poor synchronisation with the system. 5. Operator pulling or holding the bag. 6. Looper setting is off. 7. Needle guard worn or misaligned	1. Adjust the machine height. 2. Re-adjust the presser foot. 3. Check needle adjustment. 4. Check and re-adjust the speed of the sewing head, bag transport belt and possible infeed. 5. Let go of the bag. 6. Reset the presser foot. 7. Replace or reset needle guard.
7. Bag get stuck in the machine.	1. Sewing head starts too late. 2. Synchronisation with system is not correct. 3. Drive belt sewing head is too loose. 4. Bag too full. 5. Feed dog worn. 6. Throat plate worn or damaged. 7. Faulty feed into the sewing head. 8. Pressure on the presser foot too high or too low.	1. Check start sewing. 2. Synchronise again. 3. Replace or re-tension the belt. 4. Reduce contents. 5. Replace feed dog. 6. Replace throat plate. 7. Check bag feed system before feed into sewing head. 8. Re-adjust presser foot spring pressure.
8. Bag tears.	1. Throat plate damaged. 2. Too much pressure on presser foot. 3. Damaged presser foot. 4. Stitches too close	1. Replace throat plate. 2. Reduce presser on presser foot. 3. Replace presser foot. 4. Reset and check stitch length.
9. Bag tears on sewing line.	1. Too much thread tension. 2. Thin bag. 3. Stitch to short.	1. Reduce tension. 2. Change bag type. 3. Increase stitch length.
10. Skipped stitches.	1. Poor thread tension. 2. Thread pull off badly adjusted. 3. Poor quality thread.	1. Re-adjust thread tension. 2. Re-adjust thread pull off. 3. Use higher quality of thread.

FAULT	CAUSE	SOLUTION
11. Sew line is not straight.	1. Faulty feed. 2. Poor synchronisation.	1. Operator or feed. 2. Check and re-adjust synchronisation.
12. Noise and excessive vibration.	1. Internal components loose or worn. 2. Sewing head loose 3. Drive belt pulley loose.	1. Technician or Fischbein representative. 2. Check and tighten screws. 3. Re-tighten.
13. Low oil pressure.	1. Not enough oil. 2. Faulty lubrication pump. 3. Faulty pressure gauge. 4. Internal oil line plugged. 5. Filter blocked.	1. Top up oil. 2. Technician or Fischbein representative. 3. Change gauge. 4. Technician or Fischbein representative. 5. Replace filter.
14. Oil level too low, no oil, or oil on the floor.	1. Drain plug loose. 2. Looper seal leaking. 3. Feed dog seal leaking oil. 4. Bottom plate of sewing head is loose. 5. Oil gauge broken. 6. Bottom plate cork seals broken. 7. Sewing lever and presser foot lever seal leaking oil.	1. Tighten plug. 2. Replace seal. 3. Replace seal. 4. Tighten bottom plate. 5. Replace oil gauge. 6. Replace cork seal. 7. Replace seal.
15. Sewing head will not turn.	1. Internal parts broken. 2. Drive motor damaged.	1. Technician or Fischbein representative. 2. Replace drive motor.

19 Spare parts list (for a two years of usage)

Part Description	Part No.	Model	Quantity
Gasket, Top Cover	10092	50310B-200	1
Oil Filter	15054-E	50310B-200	2
Gasket, Bottom Cover	10093	50310B-200	1
O-ring, oil pump bracket	10084	50310B-200	2
Assembly, seal main shaft	10035	50310B-200	1
Gauge, Oil Pressure (60 lbs.)	15053-B	50310B-200	1
Seal, Lever Arms	31014	50310B-200	1
Needles, Square (package of 10)	13053	50310B-200	100
Chuck, Needle	10031	50310B-200	1
Screw, Needle Clamp	10011	50310B-200	1
Block, hinger Presser Foot	10156	50310B-200	1
Sheet, bearing Presser Foot	10162	50310B-200	1
Bolt, hinging presser foot	10182	50310B-200	1
Nut	11309	50310B-200	1
Seal, Feed Dog	10077	50310B-200	2
Ring, Garter Seal (feed dog seal)	10124	50310B-200	2
O-Ring, Feed Slide Rod	10075	50310B-200	2
Assembly, Looper & Knife Shaft Seal	15104	50310B-200	1
Gasket, Looper & Knife Shaft	15105	50310B-200	1
Feed Dog- long stitch	10079	50310B-200	2
Looper, Two Thread	10060	50310B-200	1
Presser Foot,	15115	50310B-200	1
Gasket, main shaft seal	10094	50310B-200	2
Disk, tension (needle lever)	10119	50310B-200	2
Disk tension, large	10120	50310B-200	4
Sleeve, tension	10114	50310B-200	1
Spring, garter lever seal	10128	50310B-200	2
Screw, Flat HD 10-32x3/8	F103238	50310B-200	8
Screw, Hex 10-32x1/2	H103212	50310B-200	4
Screw, Hex 10-32x3/4	H103234	50310B-200	4
Screw, Soc.Flat 10-32x5/8	SF103258	50310B-200	8
Screw, Hex 10-32x7/8	H103278	50310B-200	2
Screw, Pan HD 5-40x5/8	P54058	50310B-200	4
Screw, Soc.Cap 6-32x3/4	SC63234	50310B-200	1
Screw, Flat HD 10-32x1/2	F103212	50310B-200	3
Screw, Soc.Cap 10-32x1/2	SC103212	50310B-200	1
Hex.Nut Nylon lock ¼-28	NH1428L	50310B-200	1

NOTES.

20 DRAWINGS AND PARTS LISTS

DRAWINGS AND PARTS LISTS

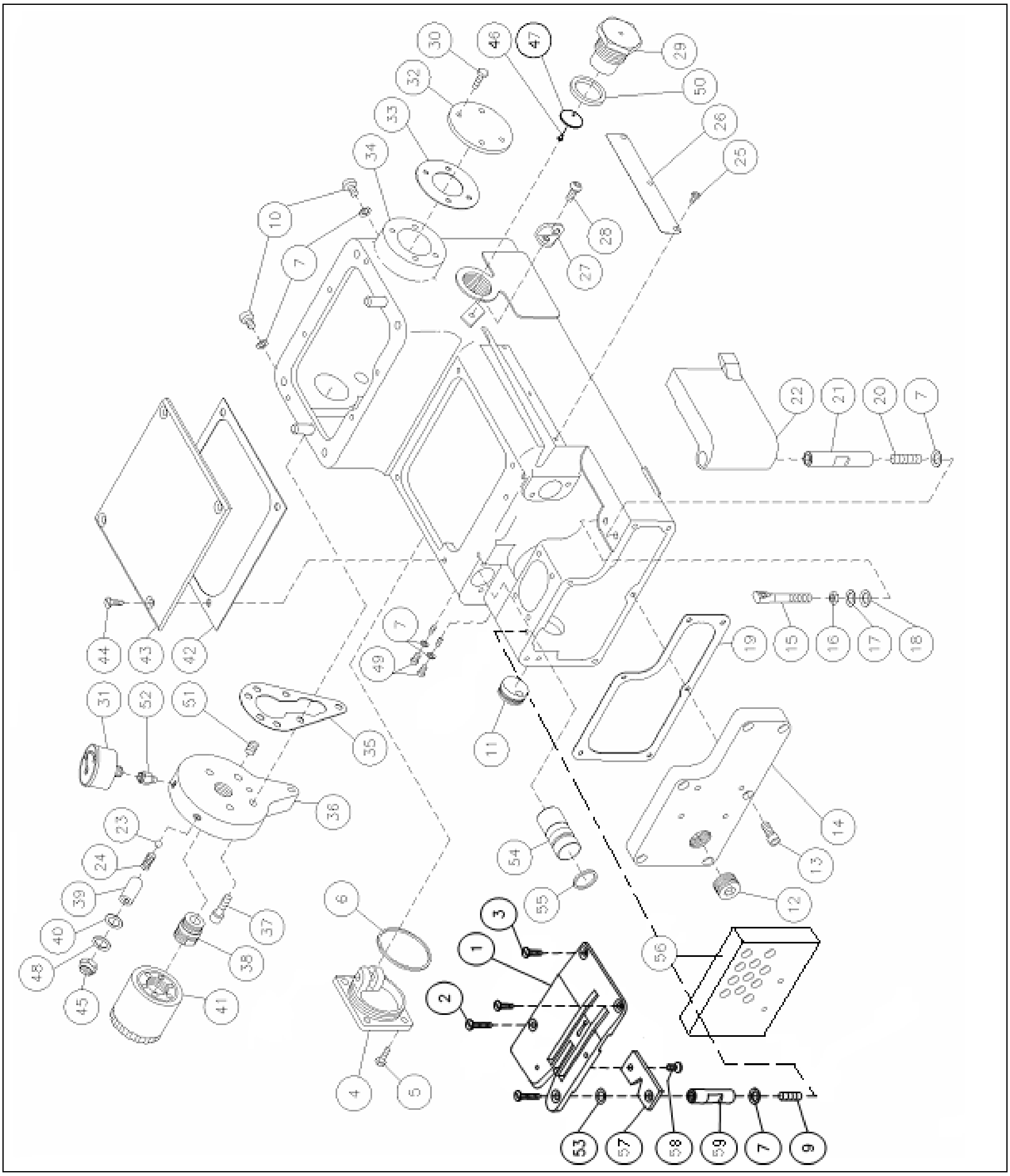
FISCHBEIN

"EMPRESS SERIES" SEWING HEADS

TYPE

200SC

20.1 HOUSING


30
46
47
29
32
50
33
26
34
25
10
28
7
27
22
21
20
7
44
43
42
19
15
16
17
18
7
49
31
52
51
35
11
36
23
14
24
54
13
39
55
37
12
40
6
3
48
1
56
38
45
41
2
4
5
53
57
58
59
7
9

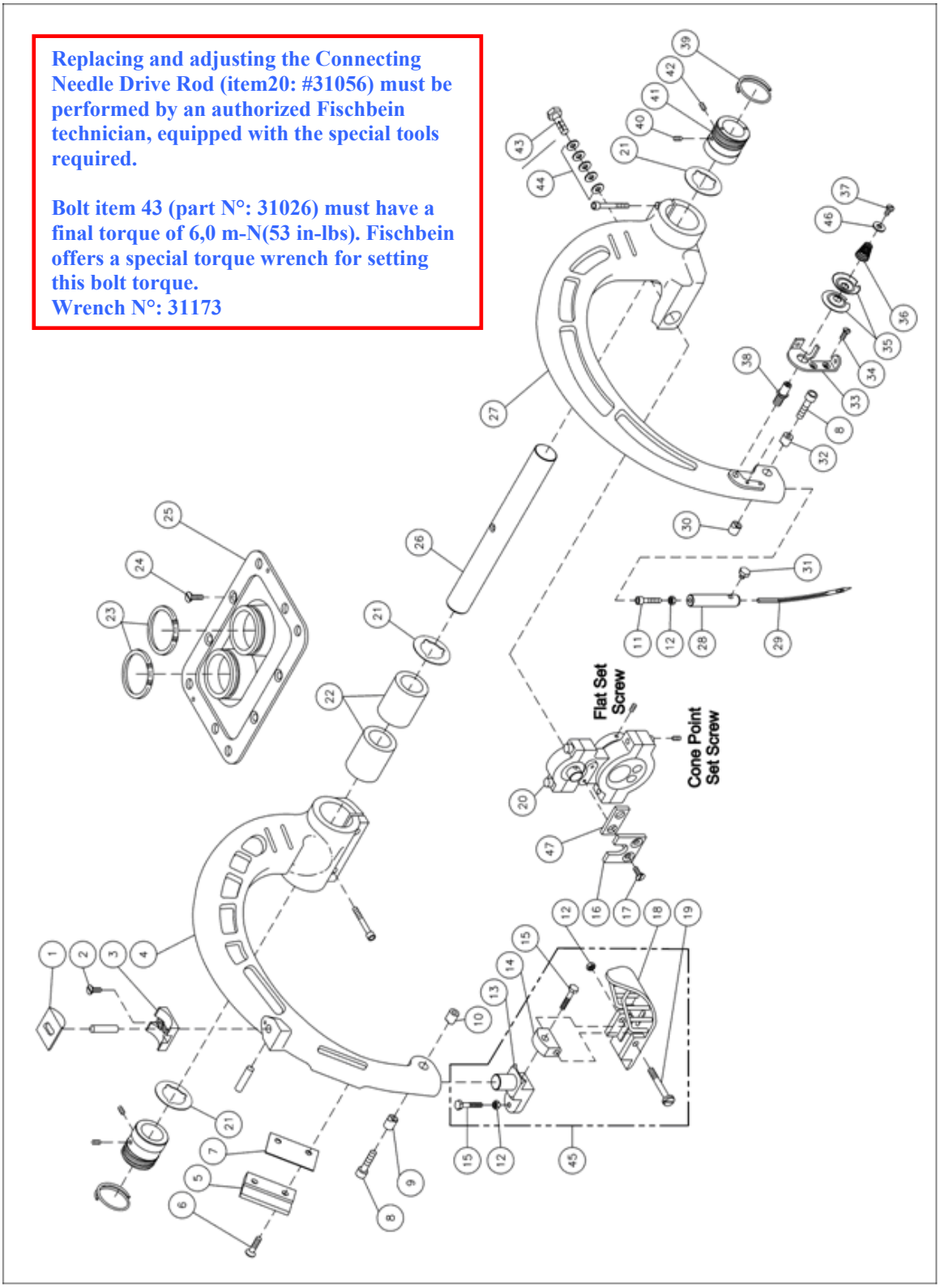
HOUSING

ITEM	Quantity	Item Code	Description:
1	1	10018	Throat plate, long stitch
2	1	F 103258	Screw, Flat HD 10-32 x 5/8
3	2	F 103238	Screw, Flat HD 10-32 x 3/8
4	1	10085	Bracket, Pivot Knife
5	4	H103212	Screw, Hex 10-32 x ½
6	1	10084	O-ring
7	5	WN 10	Washer, Nylon
9	1	SS103258	Screw, Soc. Set 10-32 x 5/8
10	2	B 103214	Screw, Binding HD 10-32 x ¼
11	1	10112	Window, oil level
12	1	10111	Plug, drain – magnetic
13	6	SC 103258	Screw, Soc. Cap 10-32 x 5/8
14	1	15072	Cover, bottom
15	1	10170	Pull off looper thread
16	1	NH 1420	Nut, Hex 1/4-20
17	1	WF 14	Washer, Flat ¼
18	1	10052	Washer, Nylon
19	1	10093	Gasket, cover – bottom
20	1	SS 10321	Screw, Soc. Set 10-32 x 1
21	1	10016	Post, long – throat plate
22	1	10005	Door , looper
23	1	15069	Ball , chrome
24	1	15078	Spring, pressure
25	3	B 632316	Screw, Binding HD 6-32 x 3/16
26	1	10098	Cover, groove – thread
27	1	10164	Eyelet, thread – short
28	1	SB 103212	Screw, Soc. BTTN 10-32 x ½
29	1	10116	Assy, plug – breather
30	4	H 103212	Screw, Hex HD 10-32 x ½
31	1	15053-B	Gauge, oil pressure 60 PSI
32	1	15079	Plate, cover – side
33	1	10094	Gasket, main shaft seal
34	1	31070	Housing, main
35	1	10095	Gasket, cover – manifold
36	1	15056	Manifold, filter
37	5	SC 103234	Screw, Soc. Cap 10-32 x 3/4
38	1	15062	Nipple , filter oil
39	1	15064	Plug, adjusting – manifold
40	1	15074	Seal, nylon
41	1	15054-E	Cartridge, oil – filter
42	1	10092	Gasket, cover –top
43	1	10014	Plate, cover – top
44	4	F 103238	Screw, Flat HD 10-32 x 3/8
45	1	11268	Nut, Lock
46	1	31136	Deflector, Splash
47	1	31137	Screw, Tapping # 4x3/8AB
48	1	3934	Washer, Thrust
49	2	B103238	Screw, Bttn. 10-32 x 3/8
50	1	10338	O-ring 7/8 ID
51	1	10125	Plug 1/8 NPT
52	1	16034	Fitting, Adapter, 45 Deg
53	1	15024	Spacer, Shim
54	1	10442	Plug
55	1	10441	O-ring, 5/8 ID
56	1	10800	Guard, Looper opening
	2	SB103238	Screw, Soc. BTTN 10-32 x 3/8
57	1	31032	Stationary knife
58	1	F83214	Screw, Flat HD 8-32 x 1/4
59	1	10015	Post, short throat plate

20.2 NEEDLE & PRESSER FOOT ASSEMBLY

Replacing and adjusting the Connecting Needle Drive Rod (item20: #31056) must be performed by an authorized Fischbein technician, equipped with the special tools required.

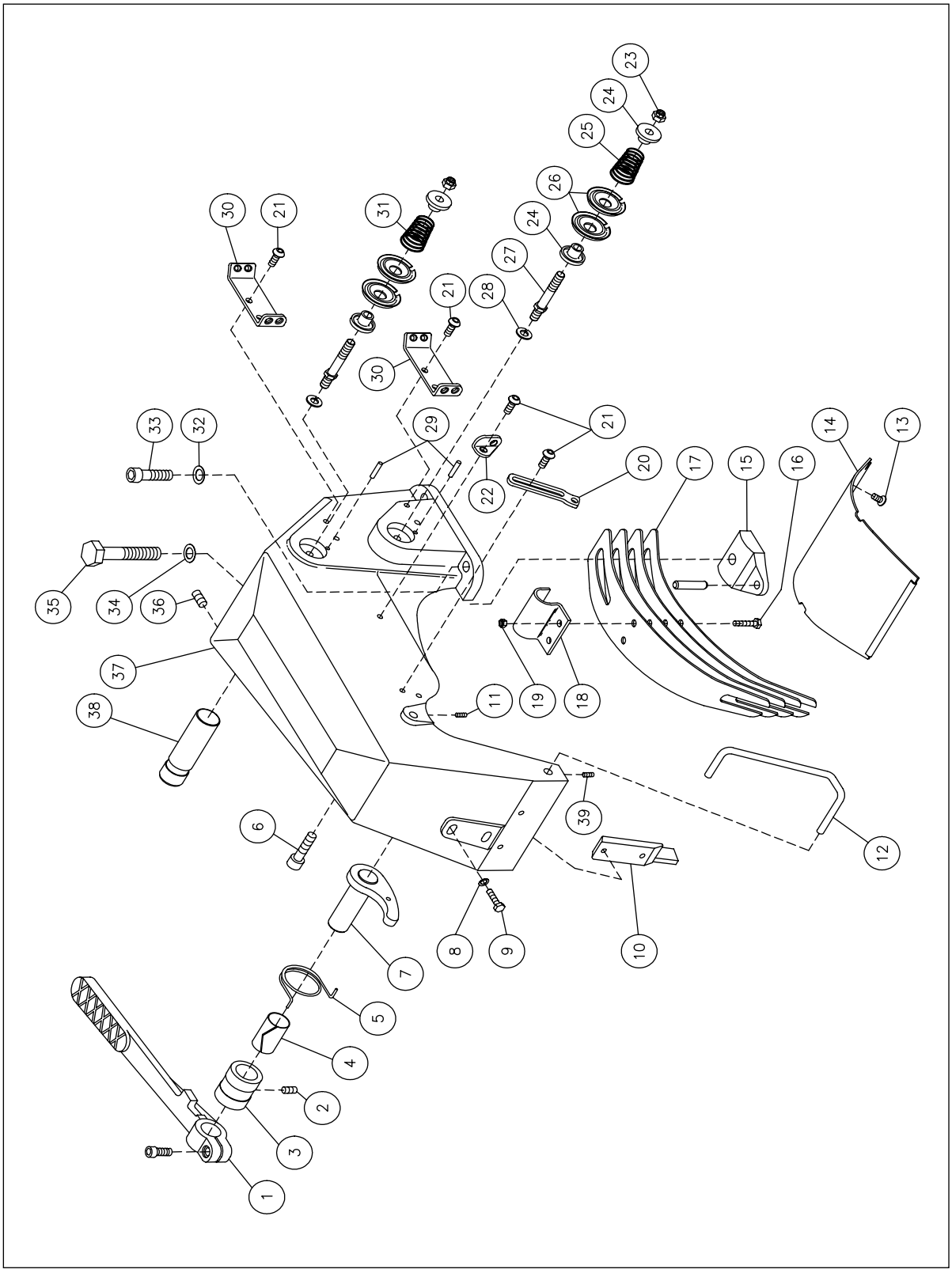
Bolt item 43 (part N°: 31026) must have a final torque of 6,0 m-N(53 in-lbs). Fischbein offers a special torque wrench for setting this bolt torque.
Wrench N°: 31173



NEEDLE & PRESSER FOOT

ITEM	Quantity	Item Code	Description:
1	1	10190	Pad, spring presser foot
2	1	F 63214	Screw, Flat 6-32 x 1/4
3	1	10189	Cradle, pad presser foot
4	1	10004	Lever, presser foot
	2	SC 14201	Screw, Soc. Cap 1/4-20 x 1
	2	PS 14112	Pin, Spring
5	1	10163	Clamp, bearing sheet
6	2	SF 103258	Screw, Soc. Flat 10-32 x 5/8
7	1	10162	Sheet, bearing presser foot
8	2	SC 63234	Screw, Soc. Cap 6-32 x 3/4
9	1	10213	Plug, clamp drilled (presser foot)
10	1	10214	Plug, clamp tapped (presser foot)
11	1	SC 103234	Screw, Soc. Cap 10-32 x 3/4
12	3	11309	Nut
13	1	10155	Shank, presser foot
14	1	10156	Block, hinger presser foot
15	2	H 103234	Screw, Hex 10-32 x 3/4
16	1	10048	Retainer, rod connecting
17	2	SF 103238	Screw, Soc. Flat 10-32 x 3/8
18	1	15115	Presser foot
19	1	10182	Bolt, hinging presser foot
20	1	15160-KIT	Rod, connecting needle drive
	1	15109	Screw, Set Cone ¼-20 x 3/8
	1	SS 142014	Screw, Soc. Set ¼-20 x 1/4
21	3	31042	Washer, Thrust
22	2	10029	Bushing, lever presser foot
23	2	10128	Spring, garter lever seal
24	4	F 103238	Screw, Flat 10-32 x 3/8
25	1	31014	Seal, levers
26	1	10026	Shaft, lever
27	1	31024-KIT	Lever, needle
	2	SC 1420114	Screw, Soc. Cap ¼-20 x 1 1/4
28	1	10031	Chuck needle
29	1	13053	Needle
30	1	10212	Plug, clamp tapped
31	1	10011	Screw, clamp needle
32	1	10211	Plug, clam drilled
33	1	10166	Guide, thread (needle lever)
34	2	F 54038	Screw, Flat 5-40 x 3/8
35	2	10119	Disc, tension (needle lever)
36	1	10009	Spring, tension (needle lever)
37	1	B 103214	Screw, Binding HD 10-32 x ¼
38	1	10113	Stud, tension (needle lever)
39	2	10023	Insert, thread – lever shaft bushing
40	2	SS 1032516	Screw, Soc. Set 10-32 x 5/16
41	2	10025	Bushing, shaft levers
42	2	SS 1032316	Screw, Soc. Set 10-32 x 3/16
43	1	31026	Screw, Hex ¼-28 x ½ GR8 LG LOK
44	4	15076	Washer, Spring ¼
46	1	WF8	Washer, Flat #8
47	1	31048	Spacer? Rod-Connecting

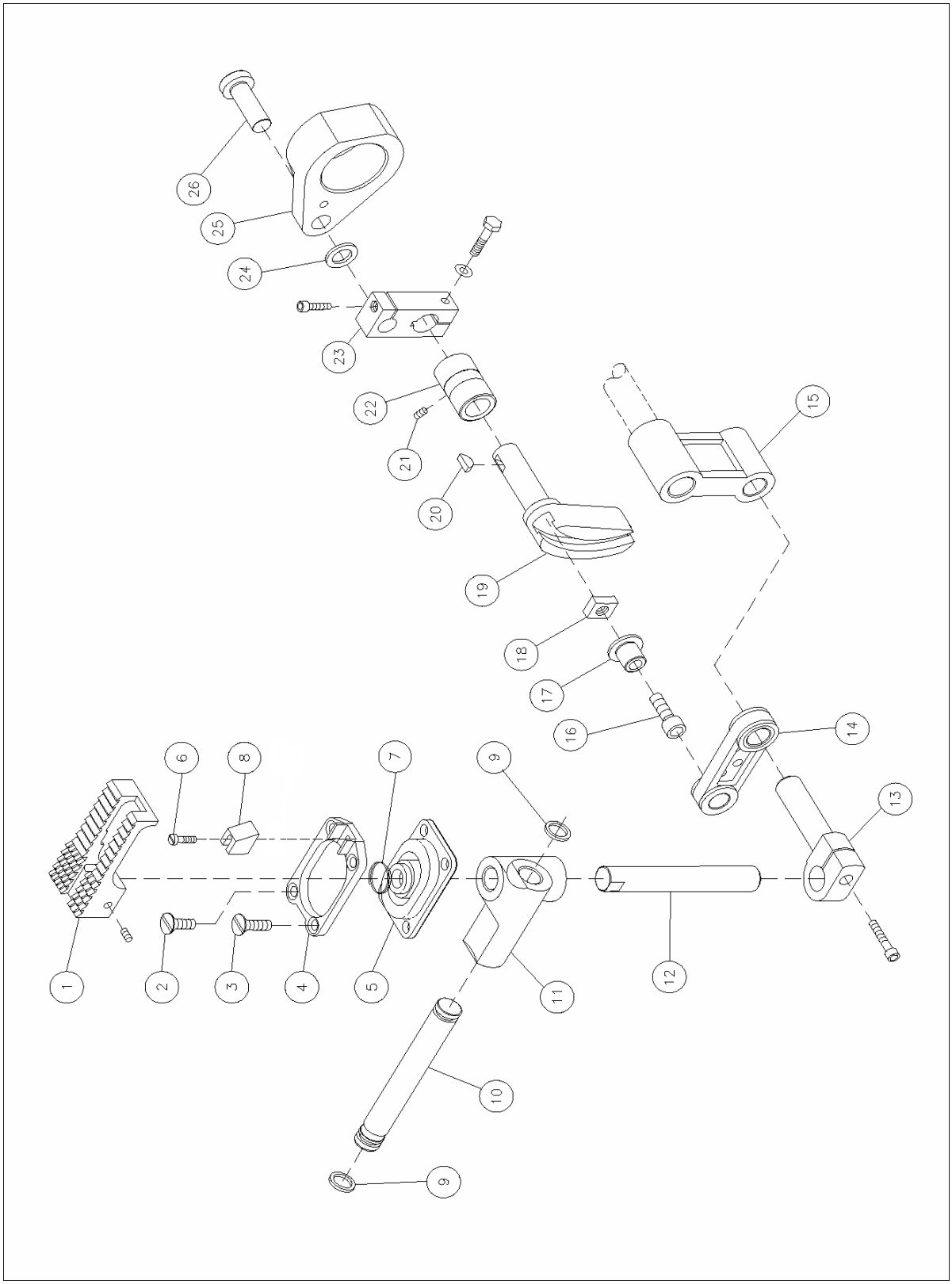
20.3 LEVER – HOUSING



LEVER - HOUSING

ITEM	Quantity	Item Code	Description:
1	1	31034	Lever, lifter presser foot
	1	SC 142034	Screw, Soc. Cap 1/4-20 x ¾
2	1	SS 142014	Screw, Soc. Set 1/4-20 x ¼
3	1	10139	Bushing, lifter presser foot
4	1	10186	Liner, bushing lifter presser foot
5	1	10187	Spring, lifter lever
6	1	SC 5161858	Screw, Soc. Cap. 5/16-18 x 5/8
7	1	10142	Cam, lifter presser foot
8	2	WS 10	Washer, Spring 10
9	2	H 103278	Screw, Hex HD 10-32 x 7/8
10	1	10161	Guide, lever presser foot
11	1	SS 1032516	Screw, Soc. Set 10-32 x 5/16
12	1	10188	Guard, tension needle
13	2	B 103238	Screw, Binding HD 10-32 x 3/8
14	1	31031	Cover, guard lever
15	1	10146	Plate, presser foot
	1	PS 141	Pin, Spring
16	2	H 103234	Screw, Hex HD 10-32 x 3/4
17	4	10145	Spring, presser foot
18	1	10144	Clamp, spring presser foot
19	2	1-178	Nut, Lock
20	1	10171	Pull off, needle thread
21	7	SB 103212	Screw, Soc. BTTN 10-32 x 1/2
22	1	10164	Eyelet, thread short
23	2	NH 1428 L	Nut, Hex ¼-28 locking
24	4	10114	Sleeve, tension
25	1	10008	Spring, tension looper thread
26	4	10120	Disc, tension large
27	2	10115	Stud, tension
28	2	11120	Washer, lock
29	2	PS 18114	Pin, Spring retaining tension disc
30	2	10165	Eyelet, thread long
31	1	10007	Spring, tension needle thread
32	4	10234	Washer, Spring
33	4	SC 516181	Screw, Soc. Cap 5/16-18 x 1
34	1	WF 38	Washer, Flat 3/8
35	1	H 3824134	Screw, Adj. 3/8-24 x 1 ¾
36	1	SS 142038	Screw, Soc. Set ¼-20 x 3/8
37	1	31075	Housing, levers
38	1	10143	Shaft, spring presser foot
39	1	SS1032316	Screw, Soc. Set 10-32 x 3/16
40			

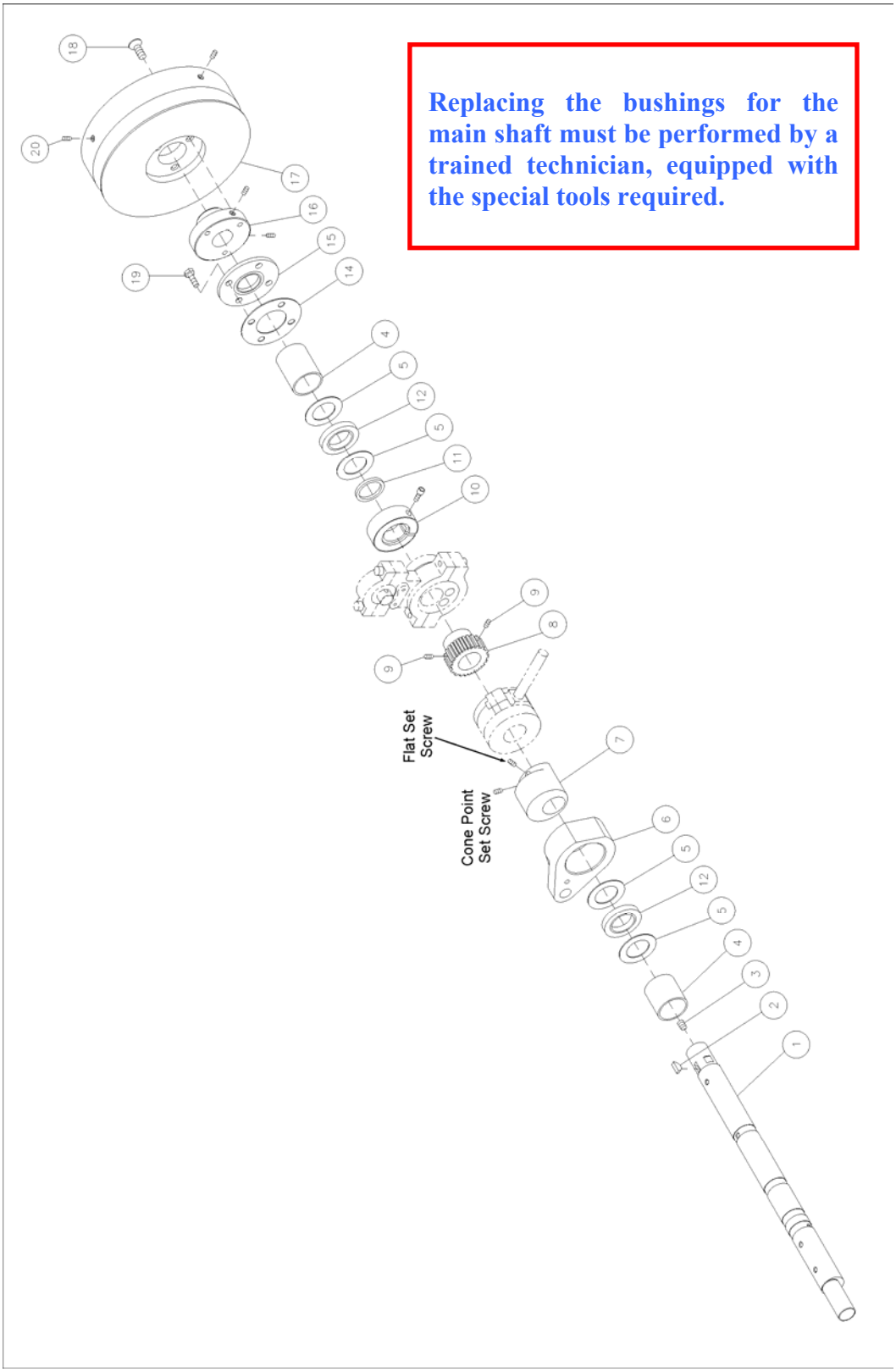
20.4 FEED ASSEMBLY



FEED ASSEMBLY

ITEM	Quantity	Item Code	Description:
1	1	10079	Dog feed, long stitch
	1	SS 1032516	Screw, Soc. Set 10-32 x 5/16
2	1	F 103238	Screw, Flat HD 10-32 x 3/8
3	3	F 103212	Screw, Flat HD 10-32 x ½
4	1	10177	Holder, guard needle
5	1	10077	Seal, dog feed
6	1	P 54058	Screw, Pan HD 5-40 x 5/8
7	1	10124	Ring, Garter-Seal (Feed Dog)
8	1	15167	Guard, needle
9	2	10075	O-ring
10	1	31012	Rod, slide feed
11	1	10073	Slide feed
12	1	31011	Rod, carrier feed dog
13	1	31008	Clamp, rod feed dog carrier
	1	SC 142078	Screw, Soc. Cap ¼-20 x 7/8
14	1	31010	Link, stroke feed
15	1	31009	Link, lift feed
16	1	SC 142878	Screw, Soc. Cap ¼-28 x 7/8
17	1	10068	Pivot, adjusting feed stroke
18	1	10067	Nut, pivot feed stroke
19	1	15154	Lever, slotted feed rocker
20	1	3192	Key
21	1	SS 1032516	Screw, Soc. Set 10-32 x 5/16
22	1	10109	Bushing, shaft feed rocker
23	1	31005	Lever, pin feed rocker
	1	SC 54012	Screw, Soc. Cap 5-40 x ½
	1	H 103234	Screw, Hex 10-32 x ¾
	1	WF 10	Washer, Flat # 10
24	1	10215	Washer, Thrust
25	1	31072	Rod, connecting prim. Feed stroke
26	1	31006	Pin, rod feed stroke connect.

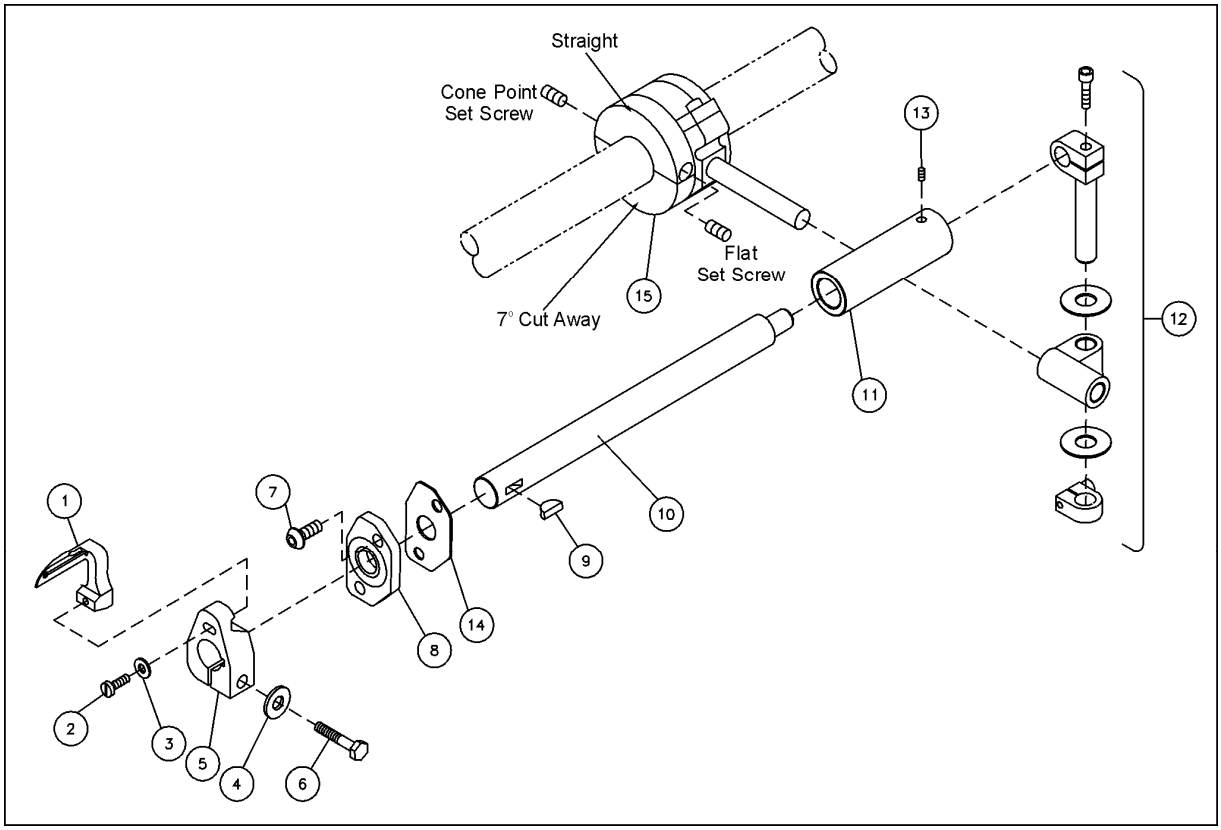
20.5 MAIN SHAFT



MAIN SHAFT

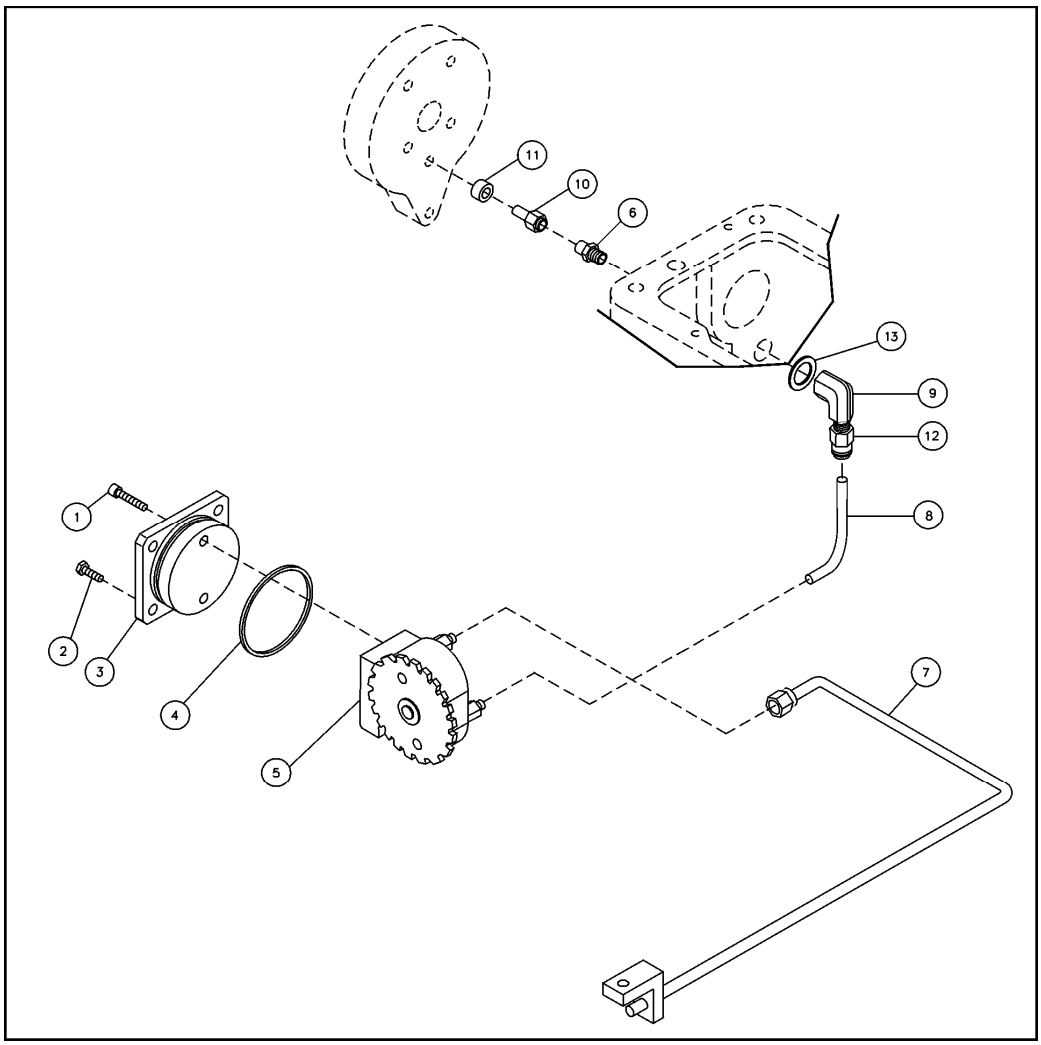
ITEM	Quantity	Item Code	Description:
1	1	31158	Shaft, Main 2 (S-stroke)
2	1	3192	Key
3	1	10125	Plug, pipe main shaft (Hi-Sp)
4	2	31061	Bushing, main shaft needle end (Hi-Sp)
5	4	31064	Washer, Thrust (Hi-Sp)
6	1	31072	Rod, connecting prim. Feed stroke (Hi-Sp)
7	1	31051	Eccentric, stroke feed (Hi-Sp)
	1	15108	Screw, Set ¼-20 x 3/8
	1	15109	Screw, Set Cone Point ¼-20 x 3/8
8	1	31055	Gear, drive pump (Hi-Sp)
9	2	SS83218	Screw, Soc. Set 8-32 x 1/8
10	1	31066	Collar, lock main shaft (Hi-Sp)
	1	SC 142858	Screw, Soc. Cap HD ¼-28 x 5/8
11	1	31059	O-ring (Hi-Sp)
12	2	31065	Bearing, thrust (Hi-Sp)
13			
14	1	10094	Gasket, main shaft seal
15	1	10035	Assembly, seal main shaft
16	1	10038	Hub, pulley
	2	15108	Screw, Set 1/4-20 x 3/8
17	1	10199	Pulley, adjustable
18	3	SF 103258	Screw, Soc. Flat 10-32 x 5/8
19	4	SC 103212	Screw, Soc. Cap 10-32 x ½
20	2	SS142038	Screw, Soc. Set ¼-20 x 3/8

20.6 LOOPER ASSEMBLY



ITEM	Quantity	Item Code	Description:
1	1	10060	Looper
2	1	SC54012	Screw, Soc Cap 5-40 x 1/2
3	1	WF5	Washer, Flat 5
4	1	WF10	Washer, Flat 10
5	1	15155	Holder, High Speed Looper (assy)
6	1	H103234	Screw, Hex 10-32 x ¾
7	2	SB103212	Screw, Soc. BTTN 10-32 x ½
8	1	15104	Assembly, Seal, Knife Shaft
9	1	3192	Key
10	1	31013	Shaft, Looper
11	1	10056	Bushing, Shaft Looper
12	1	10173	Assembly, Pivot Looper
	2	15066	Washer, Thrust
	1	15065	Clamp
	1	15039	Pin, Pivot Looper
	1	10153	Knuckle, Pivot Looper
	1	SC103258	Screw, Soc. Cap 10-32 x 5/8
13	1	SS103214CP	Screw, Soc. Set 10-32 x ¼ Cone Point
14	1	15105	Gasket, Looper Shaft Seal
15	1	31052	Assembly Cam, Looper (Hi-Sp)
	1	SS103258CP	Screw, Soc. Set Cone Point 10-32 x 5/8
	1	SS103212	Screw, Soc. Set 10-32 x ½

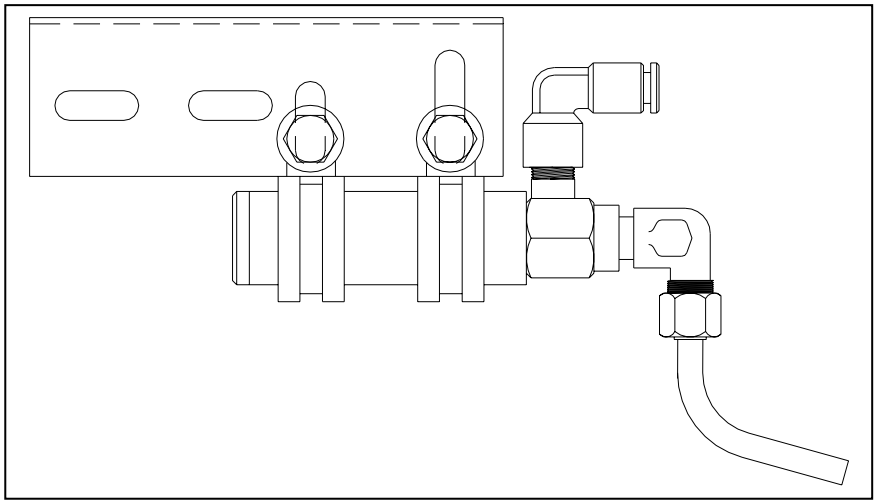
20.7 OIL PUMP ASSEMBLY



Item No.	Quantity	Part No.	Description:
1	2	SC103278	Screw, Soc. Cap 10-32 x 7/8
2	4	H103212	Screw, Hex HD 10-32 x ½
3	1	15015	Mount Pump
4	1	10084	O-ring
5	1	31092	Assembly, Gear Pump (modified)
6	REF	15059	Fitting, Male Conn 1/8 M X 1/4 T
7	1	15050	Assy, Oil Line - Intake
8	3.5 in (89mm)	67735	Tubing, Hydraulic 1/4 OD X .170 ID
9	1	66085	Fitting, Elbow 1/8 F X 1/8 F
10	1	15088	Tubing, copper (includes item #6)
11	1	1882	Bushing, Neoprene
12	1	67733	Fitting, Conn. 1/8 MNPT X 1/4 T(SP)
13	1	15077	Washer,Nylon Special

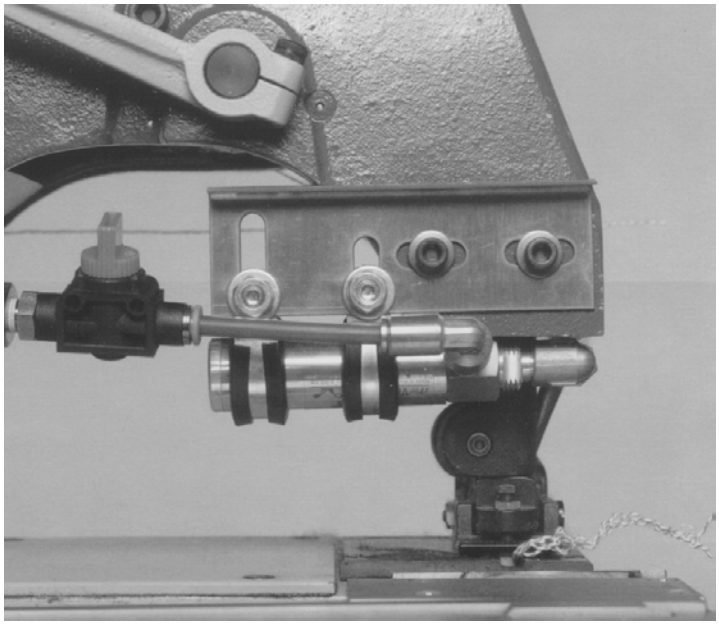
21 NEEDLE COOLER

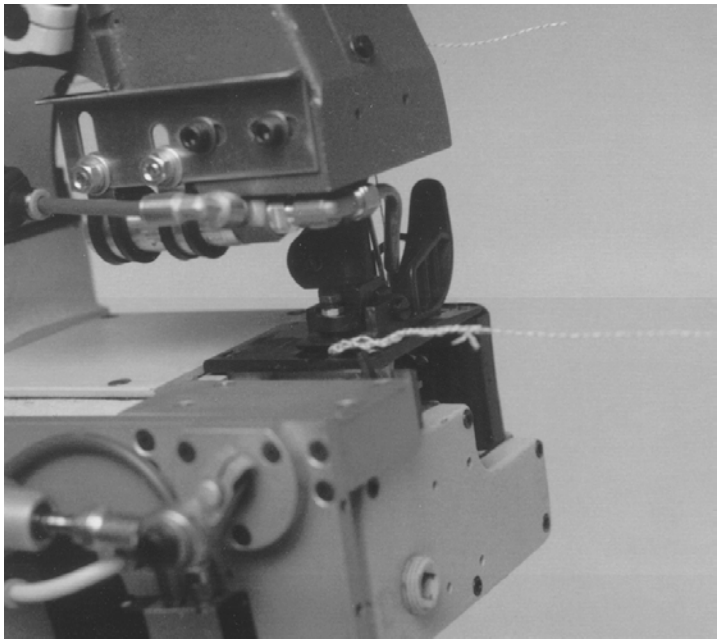
MANUAL



NEEDLE COOLER
REF:31150B

21.1 GENERAL PICTURE





21.2 HISTORIE.

The needle cooler system is a proven design and is commonly used throughout the textile industry for high speed sewing applications.

21.3 DESCRIPTION.

The needle cooler is a proven method that will generate a stream of cold air, air at 20°F or -6,6°C, to prevent needle build up.

21.4 USER APPLICATION.

The cooler system is particularly effective on high speed bagging lines, closing polypropylene bags with synthetic thread. Thread burning or melting and heat related needle breakage is reduced to a minimum.

21.5 OPERATION.

The needle cooler requires clean, dry and non lubricated compressed air. Its incorporate a Vortex tube to convert a small amount of compressed air (4 SCF/min at 100 PSI or 113 L/min at 6,9 bar or 113L/min at 0,69 Mpa) in to two low pressure streams, one hot and one cold.
The hot air is vented safely and the cold air is directed over the needle through a flexible hose.

21.6 INSTALLATION ON SEWING HEAD.

The bracket is fixed on the left side of the sewing hood with two hex screws SC142012 and two washers WS14 and this by using the two vertical short slots and so that the board of the bracket is at the outside. The Vortec tube is mounted with the two collars at the inside of the sewing head. The air connection is mounted with the tube inlet up (side pulley). The cool air tube is coming under the needle and blows the cooled air on the needle tip and this without touching the needle. See pictures.
The air connection is made by a 6 mm tube and is coming from the small hand valve which gives the possibility to regulate the air flow of the needle cooler.
The Filter regulator has to be equipped with a 5µ filter. If the cooler is installed on an existing system, replace the filter regulator by the one delivered with the cooler.
For a easy set-up of the needle cooler follow the pneumatic drawing.

21.7 TECHNICAL SPECIFICATIONS

21.7.1 Compressed air specifications.

Use only clean, dry and Non lubricated compressed air.
Normal air pressure: 5,5 - 6,9 bar or 80 - 100 PSI or 0,55 – 0,80 Mpa.
Air consumption: 113 liter/min or 4 SCF/min.

21.7.2 Conditions of air supply to the unit.

The filter regulator must be equipped with a 5 micron air filter, this is necessary to avoid dust in the Vortec tube.

21.8 The equipment consist of:

- Mounting clamp.
- Shut off valve.
- Outlet tube of cold air.
- Polyethylene air tube from 0,9 m length or 36 inches length.
- Complete instructions.

21.9 The equipment is mounted on a sewing head by means of:

- Bracket to be mounted on the sewing head, Ref:.31151
- 2 screws to fix the bracket, Ref:. SC142012
- 2 washers for the screws, Ref:.WS14....

22 SERVICE ON NEEDLE COOLER 31150B

IMPORTANT!!!

OPERATION AND SAFETY INSTRUCTIONS

READ ALL INSTRUCTIONS BEFORE ATTEMPTING TO OPERATE THIS PRODUCT

22.1 Introduction.

A needle cooler is designed to use filtered clean, dry and non lubricated compressed air to cool needles on high speed sewing machines without the use of any refrigerants.

22.2 Compressed air supply.

The compressed air has to be clean (filtered by a 5 micron air filter),dry and non lubricated. (use for this the filter pressure regulator delivered with the cooler)

22.3 Maintenance.

The needle cooler has no moving parts and can be disassembled for cleaning the sewing head. Do not disassemble the Vortec tube!

22.4 Warranty.

Standard Fischbein warranty terms will be applied on this equipment.

WARNINGS

COMPRESSED AIR COULD CAUSE DEATH, BLINDNESS OR INJURY.

- Do not operate a needle cooler at compressed air pressure above 10,3 bar or 150 PS or 1,03 Mpa.
- Do not operate a needle cooler at line temperature above 43°C or 110° F.
- Avoid direct contact with compressed air.
- Do not direct compressed air at any person.
- When using compressed air, wear safety glasses with side shields.

NOTE.

There is no need to limit compressed air pressure to a maximum of 2 bar or 30 PSI or 0,2 Mpa. It is not possible to block the flow of air from a needle cooler to register 2 bar or 30 PSI or 0,2 Mpa on a test gauge.

23 NEEDLE COOLER PARTS