

TCH INSTRUCTION & SERVICE MANUAL



teknek

ORIGINAL INSTRUCTIONS

WORLD LEADER IN CONTACT CLEANING

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Pi56377r05
ER3848r101
09.06.2011

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TEKNEK GUARANTEE

Teknek Limited ("TEKNEK") guarantees that in the event of the TCH CLEAN MACHINE becoming defective due to faulty materials or workmanship within 12 months from the date of purchase (assuming a two shift operation cycle), the company shall replace all defective parts free of charge subject to the following conditions:-

- i) TEKNEK is satisfied that the Product has not been misused or used or operated in any way contrary to the instructions in the Manual provided.
- ii) TEKNEK is satisfied that repairs have not been carried out or have been attempted by persons not authorised by TEKNEK.
- iii) The product is made available for inspection by TEKNEK or its Authorised Distributor and TEKNEK is reasonably satisfied that the product is defective.
- iv) No replacement parts or adhesive rolls other than those recommended by TEKNEK are or have been used in or with the Product.

The following points should also be noted:-

- v) This Guarantee is offered in addition to your statutory rights.
- vi) Component parts which require replacement due to normal wear and tear such as the Blue Rubber Rollers are excluded from this guarantee. The Blue Rubber Rollers carry a 6 month guarantee, excluding damage caused by use of unsuitable solvents or by knives, or by other misuse.
- vii) This Guarantee is limited to the supply of replacement parts only i.e. any labour provided will be charged at the rate applicable at the time of any repair.
- viii) Teknek Limited is a Scottish company and this Guarantee is issued subject to Scots Law.

Please note that the use of spare parts or consumables other than TEKNEK recommended items may severely damage or significantly reduce the performance of your equipment and may damage the media being processed by the Clean Machine.

1 SAFETY



SAFETY WITH YOUR CLEAN MACHINE

At TEKNEK we want you to operate your clean machine in conditions of maximum safety at all times. Listed below are procedures which should be followed during set up and operation of the machine.



1. When removing the equipment from the transport box ensure that lifting aids are available and in place as required. Removal of most TEKNEK clean machines requires more than one person and care must be taken to avoid personal injury and damage to the machine during withdrawal from the transport box. Ensure that the machine is installed safely and cannot topple over during use by mounting it on a stand or bolting it to the floor (dependent on machine type).
2. All Teknek Clean Machines which are electrically powered must be connected to earth. Check also that the intended electrical supply complies with the designated machine specification . The operating voltage is specified on the identification plate fitted adjacent to the power inlet socket.
3. Before pressing the start button to operate the machine, please read the entire contents of this manual to understand the workings of the machine.
Ensure that any new operators of the machine are given full instruction on use and an opportunity to read the manual before operating the equipment
4. If the Instruction and Service Manual is lost a new copy should be ordered from the manufacturer. The address may be found on the Identification Plate on the machine.
5. Safety considerations dictate that NO loose clothing should be worn adjacent to the machine when it is in operation. All long hair must be tied back and preferably covered by a cap or a hair net. Gloves, if worn, must fit the hands snugly as any surplus material at the finger tips constitutes a hazard when feeding workpieces during the cleaning cycle.
6. Standard adhesive rolls are pre sheeted to ensure safe purging of the adhesive layers. If continuous rolls are specified extreme care must be exercised when purging continuous Adhesive Rolls using a knife. It is recommended that a retractable blade type be used which should be retracted immediately after use.
7. DO NOT place fingers into areas which could expose them to injury such as open doors or covers or into the contact area of the cleaning rollers.
8. NEVER tamper with or override switches which may be visible when doors or covers are open as this practice could result in severe personal injury.
9. NEVER interfere with or adjust pneumatic components, if fitted, as this practice could result in severe personal injury. Servicing and repairs should always be carried out by Authorised Personnel.
10. Before opening the machine for service or repair the electrical and pneumatic supplies (if applicable) should ALWAYS be disconnected by Authorised Personnel.
11. Finally, if the specification of the Clean Machine is changed or modified in any way by the user following delivery from TEKNEK then it becomes the user's responsibility to ensure that the appropriate Machinery Directives are complied with.

SAFETY DATA SHEET

ADHESIVE ROLLS

TEKNEK Adhesive Rolls are made of pressure sensitive adhesive on a paper base and are safe and present no hazard to health provided normal rules for good industrial hygiene are observed.

The following advice is given to ensure safe storage and usage of Adhesive Rolls.

HANDLING AND STORAGE

- i) On receiving goods, inspect packages for signs of damage. Inform supplier of shortage or damage immediately. Store material in clean dry area. Material should be stored in original packaging until required.
- ii) Rolls stored on their side not in original packaging may pressure mark or produce a flat if stored for long periods.
- iii) Shelf life is two years when stored correctly in original packaging.

IN THE EVENT OF FIRE

- i) The Adhesive rolls will burn in the event of contact flame. Fumes may be given off by the acrylic adhesive and silicone release coating itself. Fires may be extinguished with water provided that live electrical equipment is not in vicinity. The advice of your Fire Officer should be sought, having regard for the layout of your premises and the particular operations involved.

WASTE DISPOSAL

- i) Adhesive Roll off-cuts may be disposed of through normal trade re-use outlets. If disposed of in a legal tip in compliance with relevant laws or incinerated in a licensed site in compliance with relevant laws, the following should be noted:-

Acrylic adhesive coated products should only be incinerated if the incinerator can cope with corrosive flue gases.

EQUIPMENT GENERAL

OZONE INFORMATION

- i) The high voltage static elimination equipment in Teknek Machinery has been thoroughly tested and complies with the OSHA Standard. The maximum Allowable Concentration (MAC) of ozone under this regulation is 0.1 parts per million. The maximum output in the vicinity of Teknek static eliminating devices is 0.04 ppm.

IMPORTANT NOTICE: Published information concerning products is based upon research which the Company believes to be reliable but such information does not constitute a warranty. Because of the variety of possible uses for Teknek products and the continuing development of new uses, the purchaser should carefully consider the fitness and performance of the product for each intended use and the purchaser assumes all risks in connection with such use. Seller shall not be liable for damages in excess of the purchase price of the product or for incidental or consequential damages. All specifications are subject to change without prior notice.

2 INTRODUCTION

The "CLEANING HEAD" is a unique solution to the problem of dirt, static and other particulate contamination. The specially formulated roller removes contamination from the workpiece without abrasion or the use of chemicals. The contamination is then transferred to an adhesive roll leaving the roller clean and ready to continue removing contaminations.

In addition an anti-static system (optional) neutralises any static charge which is present on the workpiece, thus preventing any further attraction of contaminants.

The "TCH" is the third generation of our successful "Cleaning Head" used on moving table screenprint machines.

This design is a more robust construction incorporating features such as:

- ◆ Mounting frames made to customer's requirements.
- ◆ Automatic separation of adhesive rolls from rubber rollers.
- ◆ Up-rated and increased bearings and shafts.
- ◆ Reduced equipment profile.
- ◆ Simple installation.

This effective equipment can be retro-fitted to most types of machine in a few hours. Installation usually consists of a crossbar to mount the "Cleaning Head" and a support structure tailor-made to suit each machine.

The "Cleaning Head" principle has proven to be the vital weapon in reducing rejects and increasing profit. These, together with the new design modifications all add up to a machine that has developed into the industry standard cleaning equipment for quality printers.

The Heavy Duty Cleaning Head is available in 12 cleaning widths:

300, 400, 500, 600, 750, 910, 1000, 1100, 1200, 1300, 1400, 1500 mm
(Refer to Section 8 for full specification)

The above versions are available in the following formats:-

1. Panel - Ideal for rigid and semi-rigid substrates up to 3.2 mm (6.25mm where specially ordered)
2. Film or filmic type flexible substrates from 175µm to 3.2mm
3. Ultraclean - For flexible films less than 75µm.
4. Nanoclean – for static sensitive products

TEKNEK equipment is continuously developed and therefore we reserve the right to modify or alter it without notification.

3 UNPACKING

- i) Remove the cleaning head from the transport box.
- ii) Check unit for transit damage.
- iii) Confirm that the Serial Number on the machine matches that shown on the cover of this Service and Instruction manual.
- iv) Fill in and return the Guarantee Card

In case of damage or discrepancy please notify the Authorised Distributor or TEKNEK Head Office immediately.

4 INSTALLATION

4.1 FRAME INSTALLATION

- i) Place the cleaning head on a suitable work table.
- ii) Remove the strapping holding the machine closed.
- iii) Thoroughly clean down the unit in order to prevent transfer of airborne particles to cleaned substrates exiting the cleaning head roller.
- iv) Remove the adhesive roll assembly by following the instruction in Section 6.1
- v) Clean down the Blue Roller following the instruction in Section 6.3 of this manual. Allow to dry completely.
- vi) Replace the adhesive roll. The orientation of the adhesive roll must be correct to prevent unwinding of the adhesive during machine operation. The end of the adhesive roll with the red sticker on it should be inserted in the machine with the matching sticker. The orientation of the adhesive rolls is shown in Section 6.2 of this manual.
- vii) Remove the protective paper covering from the adhesive roll and close the cleaning head hood.

Due to the speciality of the mounting frames manufactured for each specific cleaning head the following assumes that the framework is ready to accommodated setting up of the machine to the substrate. Refer to the Appendix at the end of the manual for guidance on a standard mounting frame.

4.2 MACHINE SETUP

- i) Centralise the cleaning head onto crossbar of special mounting frame supplied with machine.
- ii) Connect up pneumatic / electrical connections as per schematic drawings supplied.
- iii) Actuate the cleaning head until it travels the full piston stroke of 25mm.
- iv) Check that the full width of the blue roller contacts the material that is to be cleaned and is level. The cleaning head should be adjusted so that the cleaning roll just touches the product to be cleaned with the minimum of contact pressure to ensure effective cleaning, excessive pressure will lead to premature wear of the cleaning roller and failure of the cleaning head to operate correctly.

4.3 WIRING AND PNEUMATIC CONNECTION

- i) Ensure that the pneumatic hoses connected to the two pneumatic cylinders on the cleaning head are secure and kink free.
- ii) The electrical solenoid which controls the operation of the cylinders should be mounted in a secure area on the main machine as close to a main air supply as possible. The connection for the air should be as shown on the pneumatic schematic diagram in Section 9.
- iii) The electrical connection for operation of the TCH can vary from machine to machine so it is advisable to have a qualified engineer check and connect the wiring using the schematic wiring diagram in Section 9 as a guide. It is normal practice to have the TCH operating to the "On" position before the material enters the cleaning head.
- vi) If an anti-static bar and transformer are to be used with the cleaning head the boxed transformer should be located in the same area as the solenoid and wired as shown on the schematic wiring diagram.

Teknek equipment has not been designed, tested, nor approved to work in hazardous areas. Should customers choose to install Teknek equipment in hazardous areas, the customer must ensure that all necessary regulation and compliance issues are dealt with. Teknek accepts no liability for equipment used in hazardous environments.

5 OPERATION

- i) Check that all fasteners on the cleaning head and mounting frame are fully tightened and all wiring and pneumatic hoses are fully connected.
- ii) Ensure the adhesive roll protective layer has been removed and the correct orientation of the material wind is as shown in Section 6.2.
- iii) Switch on the anti-static bar transformer.
- iv) Operate the machine in the normal way.
- v) Check that the cleaning head lowers evenly down until the blue roller contacts the material to be cleaned.
- vi) The blue roller and adhesive roll should be turning together with the processing of the substrate.
- vii) Stop the machine and check that the cleaning head rises away from the substrate to its rest position. The blue roller and adhesive roll should now be out of contact with each other.
- viii) Carry out this test until the operator is satisfied that the cleaning head lowers and rises correctly and that the cleaning roller contacts the substrate along its full length.

6 MAINTENANCE

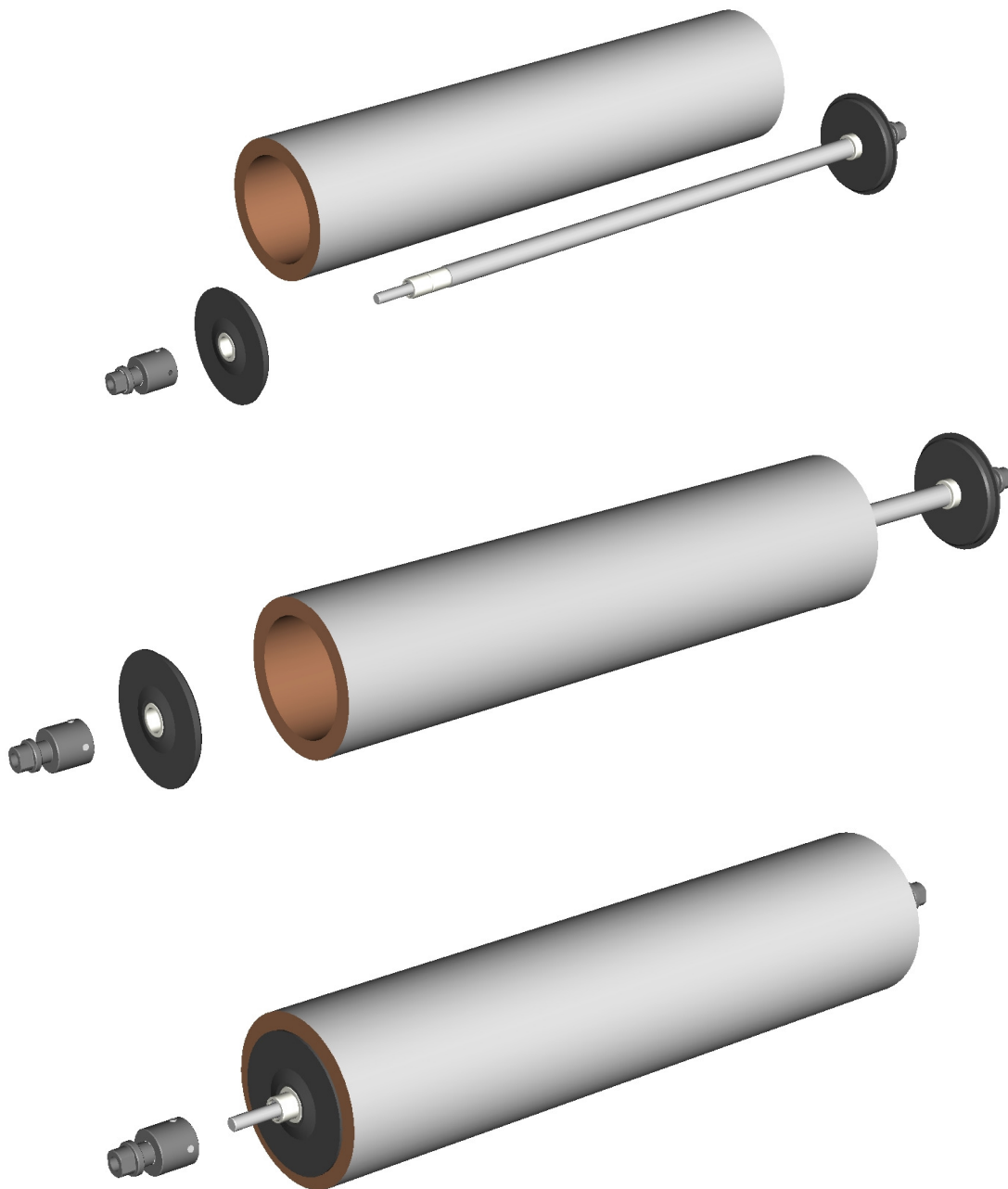
6.1 PURGING ADHESIVE ROLLS

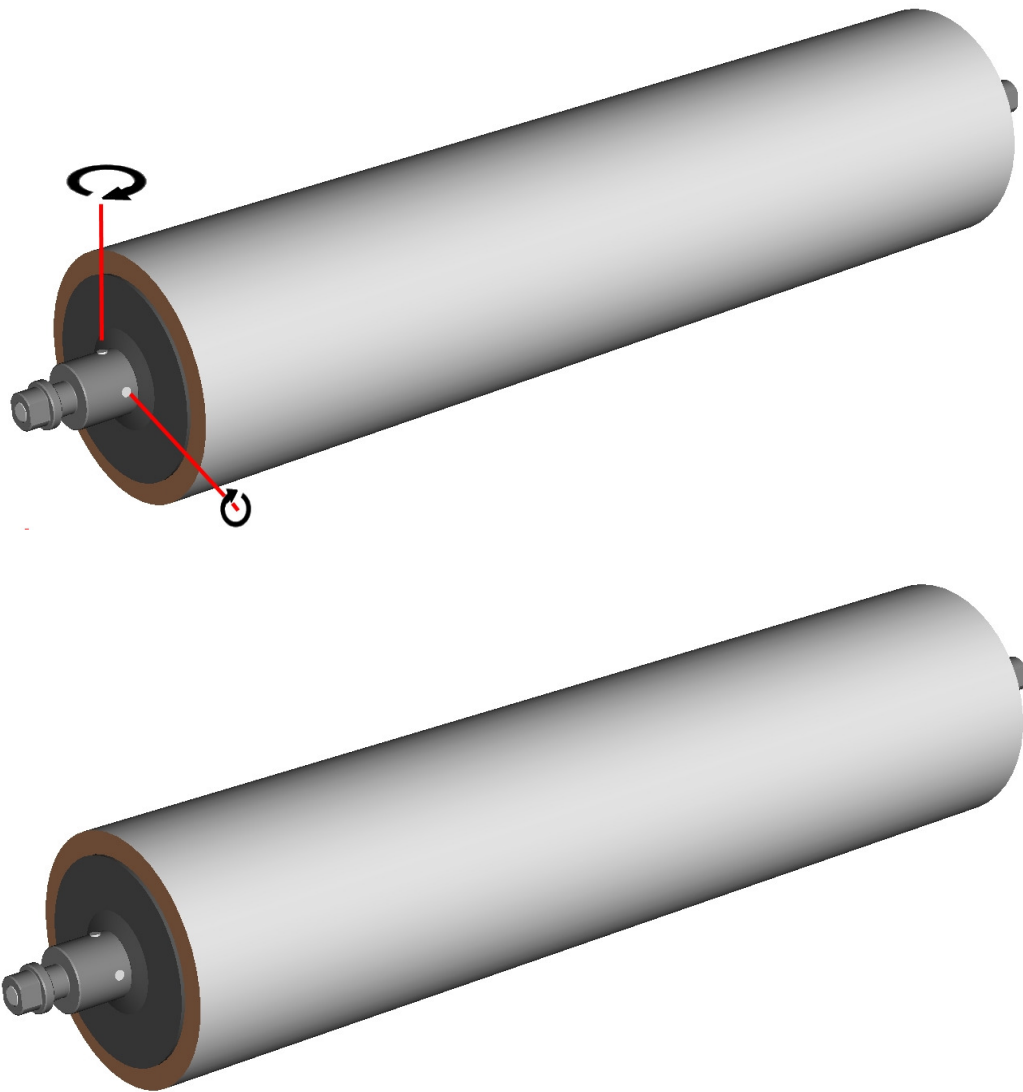
This operation should be carried out on a shift basis or more often if operating conditions dictate. To remove a layer from the pre-sheeted adhesive roll, lift the loose edge and pull contaminated area clear, For continuous adhesive rolls cut off using a knife. This will expose a fresh layer of adhesive, ensuring the optimum performance of the rubber cleaning roller.

The adhesive roll can be accessed by lifting the upper hinged hood on the machine.

6.2 REPLACING THE ADHESIVE ROLLS

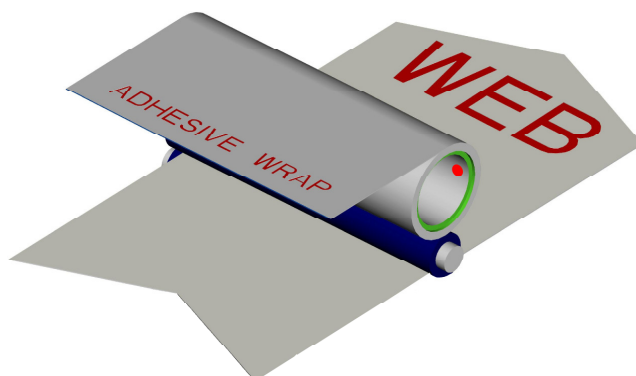
Access to the adhesive rolls is by opening the hinged hood on the machine and lifting out the adhesive roll assembly from the machine.





It is important that the Adhesive Rollers are placed into the TCH machine in the proper orientation. This is to prevent the adhesive wrapping around the blue rubber rollers.

The orientation of the machine and web direction is taken when standing at the front of the opening cover..



Web Flow Direction Front to Back

The top adhesive roll must be loaded so that the end with the red dot is loaded to the rear of the machine and the bottom adhesive roll must be loaded such that the end with the red dot is loaded to the front of the machine

Web Flow Direction Back to Front

The top adhesive roll must be loaded so that the end with the red dot is loaded to the front of the machine and the bottom adhesive roll must be loaded such that the end with the red dot is loaded to the rear of the machine.

NOTE: IT IS GOOD PRACTICE TO TAPE DOWN THE CUT EDGE

6.3 HANDLING & CLEANING RUBBER ROLLERS

Always disconnect the machine from power supply before performing any cleaning operation.

6.3.1 NANOCLEEN ROLLERS

Rollers should only be touched wearing clean white cotton gloves (Mi51577) and should only be cleaned with special Nanowipe cloth.

On a daily basis

Wipe the roller/s using the Nanowipe cloth dampened using clean water and wrung out until just damp.

NEVER use Tekwipes, Isopropyl alcohol or other solvent cleaners on the Nanocleen rollers.

If the surface of the roller/s deteriorates or contamination is evident contact Technical Services for assistance.

6.3.2 FILM, PANEL, ULTRACLEEN TYPE ROLLERS

On a daily basis

The rubber roller/s should be vigorously wiped using Tekwipes, Teknek Part No. Mi6700.

On a weekly basis

If the surface of the roller/s deteriorates or contamination is evident vigorously wipe down using Scotchbrite Pad, Teknek Part number Pi5068 and Isopropyl alcohol together.

NOTE: Always allow Isopropyl alcohol to evaporate from the Film, Panel, F3 rollers before allowing the Adhesive roll to come into contact with the rubber roller/s.

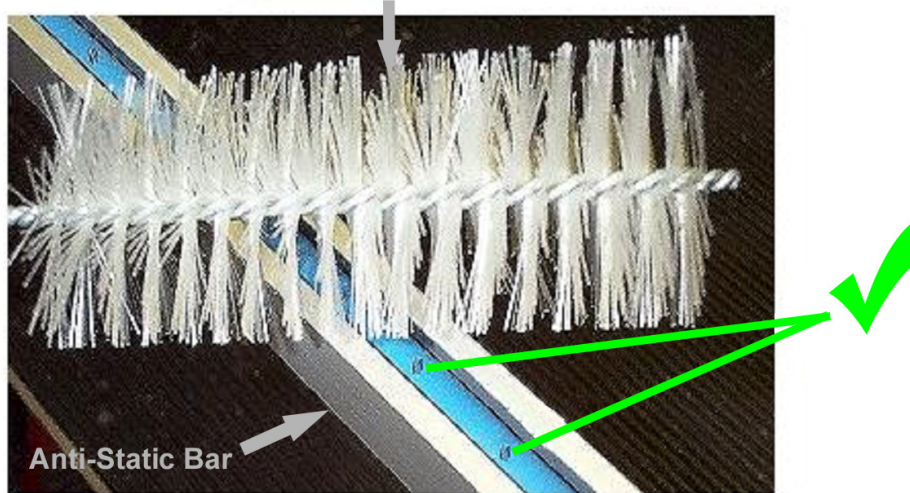
DO NOT USE ACETONE, SCREEN WASH OR ANY SOLVENT BASED CLEANER ON ANY TEKNEK RUBBER ROLLER AS THIS WILL DAMAGE THE COMPONENT AND INVALIDATE WARRANTY.

ENSURE THAT NO CLEANING LIQUID FLUIDS IMPREGNATE THE ADHESIVE ROLLER SURFACES.

6.4 CLEANING ANTI-STATIC BAR

On a daily basis the anti-static bar should be cleaned to remove any contamination from the needle points, using a soft brush (TEKNEK Part No. TK 5598). Failure to adhere to this instruction can diminish the performance of the anti-static bar.

Cleaning Brush - Part Ref:- Mi5598



6.5 PREVENTATIVE MAINTENANCE SCHEDULE

TIMING	ACTION	REFER TO MANUAL
Each Shift or more often if conditions dictate	Purge Adhesive Rollers	Section 6.1
Daily	Clean Anti-Static Bar	Section 6.4
Weekly	Clean Rubber Rollers	Section 6.3

6.6 LIST OF RECOMMENDED SPARES FOR PREVENTATIVE MAINTENANCE

6.6.1 PREVENTATIVE MAINTENANCE PARTS

MI6700	TEKWIPES TUB OF 65 (for use with Panel / Film / Ultraclean & F3 Rollers only) DO NOT USE ON NANOCLEAN ROLLERS	1
TK5598	ANTI-STATIC BAR CLEANING BRUSH	1
MI5068	SCOTCHBRITE PADS (ROLLER REJUVENATION) (for use with Panel / Film / Ultraclean & F3 Rollers only) DO NOT USE ON NANOCLEAN ROLLERS	5
MI2393	STATIC BAR CHECKER	1

6.6.2 SPARES FOR 2 YEARS OPERATION

SP6563	GAS SPRING, AUTOSEP	2
BE0496	BEARING, ROLLER	2
SP1657	SPRING, FAIL-SAFE (W)	2
SP7244	SPRING, BEARING BLOCK	2
SP56369	SPRING, A/R SHAFT	1
HA56376	STATIC DRAIN BRUSH	2
PN56355	PISTON, 20 BORE – 25 STROKE	2
MA56375	A/R LIFT CAM	2

6.6.3 LENGTH ORIENTED PARTS

M/C Width	Panel R/Roller	Film R/Roller	Ultracleen R/Roller	Nanocleen R/Roller	Anti-static Bar	Adhesive Roll Shaft	Adhesive Roll
300	RR51246	RR51258	RU44367	RN53765	AB4925	PL56407	ARBS0300
400	RR51247	RR51259	RU44366	RN53766	AB19502	PL56408	ARBS0400
500	RR51248	RR51260	RU44365	RN53767	AB6620	PL56410	ARBS0500
600	RR51249	RR51261	RU44364	RN53768	AB3927	PL56411	ARBS0600
750	RR51250	RR51262	RU44363	RN53769	AB0637	PL56412	ARBS0750
910	RR51251	RR51263	RU44362	RN53770	AB0580	PL56413	ARBS0910
1000	RR51252	RR51264	RU44361	RN53771	AB0580	PL56414	ARBS1000
1100	RR51253	RR51265	RU44360	RN53772	AB0580	PL56415	ARBS1100
1200	RR51254	RR51266	RU44359	RN53773	AB0647	PL56416	ARBS1200
1300	RR51255	RR51267	RU44358	RN53774	AB0647	PL56417	ARBS1300
1400	RR51256	RR51268	RU44357	RN53775	AB3478	PL56418	ARBS1400
1500	RR51257	RR51269	RU44356	RN53776	AB3487	PL56419	ARBS1500

7 FAULT FINDING

POSSIBLE CAUSE

- i) Head coming down too quickly or too slowly.
- ii) Head going up too quickly or too slowly.
- iii) Head not staying horizontal during lifting or lowering.
- iv) Adhesive paper wraps around rubber roller.
- v) Contamination not being picked up.
- vi) Head 'banging down' onto substrate
- vii) Anti-static bars not operating.

CORRECTIVE ACTION

- Check running pressure at regulator and adjust.
- Check running pressure at regulator and adjust
- Uneven flow to pistons, adjust to correct.
- Adhesive roll incorrectly installed.
Remove, check orientation and replace.
- i) Check rubber roller is contacting work-piece, adjust if necessary.
 - ii) Check cleanliness of rubber roller.
Clean with Tekwipes.
 - iii) Ensure adhesive roll is purging rubber roller. Remove outer layer of adhesive roll.
- Adjust height setting of head as per installation.
- Check and replace transformer.

8 CLEANING HEAD SPECIFICATION

MODELS OUTLINE DIMENSIONS: (IN OPERATING MODE)

Machine Type	WIDTH (mm)	DEPTH (mm)	HEIGHT (mm)	Est. WEIGHT (kgs)
TCH - 300	492.5	285	257	
TCH - 400	572.5	285	257	
TCH - 500	692.5	285	257	
TCH - 600	794.5	285	257	
TCH - 750	934.5	285	257	
TCH - 910	1082.5	285	257	
TCH - 1000	1172.5	285	257	
TCH - 1100	1272.5	285	257	
TCH - 1200	1358.5	285	257	
TCH - 1300	1472.5	285	257	
TCH - 1400	1572.5	285	257	
TCH - 1500	1672.5	285	257	

CONSTRUCTION & FINISH

Stainless Steel / Aluminium

FINISH

Polished Stainless Steel / Anodised Aluminium

CAPACITY/SPEED RANGE

Up to 100 MPM

POWER SUPPLY REQUIREMENTS

200/240v 110/115v 50/60 Hz
(POWERS ANTI-STATIC BAR AND SOLENOID VALVE)

AIR

5-7 BAR – OIL FREE, 6mm INLET PIPE, AIR CONSUMPTION IS NEGLIGABLE, ONLY REQUIRED FOR ACTUATING THE MACHINE ON / OFF.

9 DETAILED DRAWINGS

Drawing Number	Description
Pi56379	Technical Info
TD56380	General Arrangement
TD56356	Top Cover Assy
TD56406	A/R Shaft Assembly
PL56353	Lift Rod Assy
PL56373	Endplate Assy – RH
PL56372	Endplate Assy – LH
PL56371	Endplate Assy - RH
PL56370	End Assembly - LH
PL56351	R/R Holder Assy
PN56378	Pneumatic Schematic

