

	Service Inspection Plan Coatron A4 / A6 / A6 Plus and OEM	NDCA_SVP Rev.: 5 Page: 1 of 8

COATRON SERVICE PLAN AND REPORT		
Model:	Serial - No.:	Firmware Rev.:
Service Interval	☐ 50.000 ☐ 100.000 ☐ 200.000	
Failure/Repair during service		
Date of service	Service engineer (Name, Company)	Signature/Stamp

1. DECONTAMINATION PROCEDURE (WEEKLY OR BEFORE EACH SERVICE) YES ☐

- Use 30% diluted bleach and commercial disinfectant (e.g. BacilloI®AF)
- Decontaminate working area, needle area, patient racks, keyboard, LCD screen, front casings, printer and waste drawers

2. EVERY YEAR OR 50.000 TESTS YES ☐

- | | | |
|--|------------------------------|-----------------------------|
| • Clean and decontaminate instrument | yes ☐ | no ☐ |
| • Remove syringe and clean plunger and glas with alcoholic solution | yes ☐ | no ☐ |
| • Clean the fan of power supply with a small brush | yes ☐ | no ☐ |
| • Run standard service check | yes ☐ | no ☐ |
| • Reset service interval | yes ☐ | no ☐ |
| • Print a service report 2x (Keep one for yourself and fix the other on the rear casing) | yes ☐ | no ☐ |

3. EVERY 100.000TESTS OR 5 YEARS YES ☐

Additionally to 50.000 service

- | | | |
|--|------------------------------|-----------------------------|
| • Replace needle | yes ☐ | no ☐ |
| • Replace syringe | yes ☐ | no ☐ |
| • Replace valve | yes ☐ | no ☐ |
| • Replace tubing | yes ☐ | no ☐ |
| • Replace insulation block | yes ☐ | no ☐ |
| • Check battery on mainboard (SL 750/PT 3.6V 1.1A) and replace if below 3.3V | yes ☐ | no ☐ |

4. EVERY 200.000TESTS OR 10 YEARS YES ☐

Additionally to 100.000 service

- | | | |
|--|------------------------------|-----------------------------|
| • Replace all belts (x,y) | yes ☐ | no ☐ |
| • Replace Z-Pinion | yes ☐ | no ☐ |
| • Replace Flatcable | yes ☐ | no ☐ |
| • Replace Y-Pulley | yes ☐ | no ☐ |
| • Clean all wheels, rollers and guide rails with alcoholic solution and apply silica oil | yes ☐ | no ☐ |
| • Check Z-Bearing and replace if required | yes ☐ | no ☐ |

1. SAFETY INFORMATION

	Authorized service ! Carry out only the maintenance, repair and replacement measures listed in this Operator's Manual. Improper manipulation of the device will void the manufacturer's liability obligations and may make service calls necessary, payment of which is not covered by warranty. Only the authorized Customer Service may carry out servicing. Only original replacement parts may be used. Before doing any servicing on the instrument it is very important to thoroughly disinfect all possibly contaminated parts
	Laser Radiation The internal barcode scanner is assigned to laserclass 2 – EN60825-1:2007. Avoid direct eye exposure max. power = 1.7 mW pulse period = 420 µs wavelength = 655 nm
	Cleaning and decontamination ! Before the instrument is removed from the laboratory for disposal or servicing, it must be decontaminated and should be performed by authorised well-trained personnel only, observing all necessary safety precautions
	Cleaning certificate required ! Instruments to be returned have to be accompanied by a decontamination certificate completed by the responsible laboratory manager. If a decontamination certificate is not supplied, the returning laboratory will be responsible for charges resulting from non-acceptance of the instrument by the servicing centre, or from authority's interventions.
	Infectious Material Regard all surfaces and materials which might be in contact with plasma or other biological liquid as potentially contaminated with infectious material. Wear medical infection grade protective gloves for all cleaning and maintenance works involving potential contact with infectious liquids and use each pair of gloves once only. Use a hand disinfectant product, e.g. Sterilium®, to disinfect your hands after completion of the work.
	Contact with cleaning solution Applied decontaminants ,disinfections are mildly irritant. Avoid any direct contact, but in case apply water immediately to rinse off.

2. GENERAL INFORMATION

Cleaning and maintenance must be performed on a regular basis in order to maintain accuracy and precision. The schedule below outlines the proper intervals to check or replace components of the instrument.

- Never pure any liquid into optic or working area
- Use lint free cotton cloth or stick to clean
- If a liquid has accidentally been spilt or pipetted into a measurement channel, remove it immediately with a pipette and clean the measurement channel with a lint-free cloth. Check the function of the optics in the menu SERVICE
- Helpful information can be downloaded here



https://www.teco-medical.com/downloads.html?group=Coatron_A&category=Instructions-Serviceguide&search=



https://www.teco-medical.com/downloads.html?group=Coatron_A&category=Instructions-Troubleshooting&search=

3. PROCEDURE OF CLEANING

- Use detergent and water and 10% diluted bleach or commercial decontaminant
- Clean and wipe up all spills around the working area or needle pump system with detergent and water.

4. PROCEDURE OF DECONTAMINATION

- Use 30% diluted bleach and commercial disinfectant (e.g. Bacillol®AF)
- Decontaminate working area, needle area, patient racks, keyboard, LCD screen, front casings, printer and waste drawers

5. DAILY ACTIVITIES

- Clean system with detergent and bleach as described above
- Inspect level of rinse and waste container
- Empty cuvette drawer and fill tower
- Inspect tube system for any leaks and correct immediately

6. WEEKLY ACTIVITIES

- Decontaminate system with bleach and ethanol as described above

7. YEARLY ACTIVITIES

- Clean and decontaminate equipment
- Carry out service and maintenance according to standard service procedure (see next page)
- Reset Service Interval

8. RECOMMEND SERVICE PARTS

The service engineer should have at least following parts in his service-bag

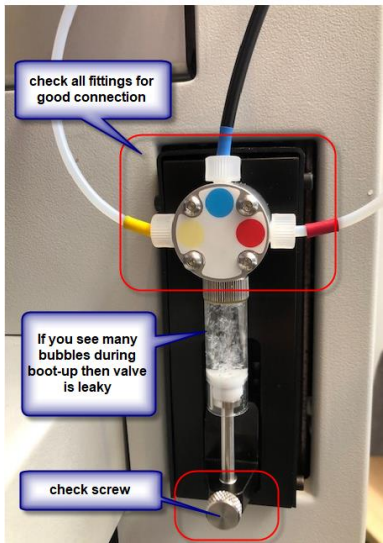
REF	Product	applied to
21 063 01	Tubing	A4/A6
21 067 01	Pipette needle	A4/A6
21 806 00	Insulating block	A4/A6
21 809 00	Valve A4 pump	A4
21 809 00	Valve XC , pump	A6
21 809 00	Valve XC , pump	A6
21 808 00	Syringe 1ml	A4
21 808 06	Syringe 2,5 ml	A6

9. STANDARD SERVICE PROCEDURE

Following checks should be performed with each visit of instrument.



https://www.teco-medical.com/downloads.html?group=Coatron_A&category=Instructions-Troubleshooting&search=imprecise

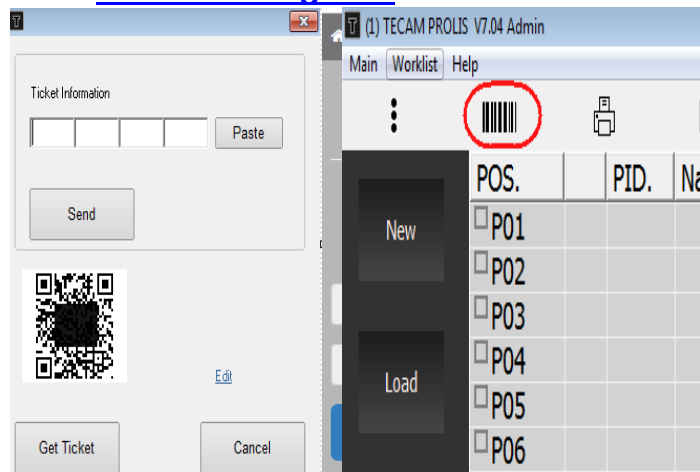
Step-1: Install latest firmware + upgrade clean position (see step-6) Coatron A4 Build-261 (Jul-2020) Coatron A6 Build-106 (Jul-2020) Coatron A6 Plus Build-53 (Jul-2020) You can download from https://www.teco-medical.com/downloads.html	<u>List of SW-improvements to former versions from 2019</u> • The new firmware has significant improvements regarding precision, accuracy and optical interferences. • It is more tolerant to poor service like old needle, valve, • Additionally the consumption of rinse to reduced significantly. • The most important point is , that lifetime of valve is increased from 80.000 to 150.000 determinations by changing procedure of sample washing.
Step-2: Goto instrument SERCIVE\ADJUST MOTOR and perform	The Coatron A6+/5000 is very sensitive if cuvette is not exactly centered to the LED light beams. In this case especially FIB,DD,AT,FDP gives very poor precision.
Step-3: Goto instrument SERCIVE\ADJUST XYZ and perform	The two needles must be mounted at 110mm height. Fine XYZ adjustment is important to ensure correct inside and outside washing of needle probe
Step-4 : Check for leaky valve or tubing 	During boot-up the instruments performs a complete wash cycle. Watch carefully • The valve or tubing is leaky in case of airbubbles like on the picture • Check that syringe-screw is connected • Check that tube fittings are connected • Check that needle is washed inside and outside with rinse solution.
Step-5: Perform FIB QC test	• Place on-board FIB, IBS reagent + Normal control to P01 • Goto meu ANALYSIS/NEW LIST and set mode="QC"

 RESULT REPORT WORKLIST-ID: 15 CYCLE: 328 sec 2019/03/21 14:46 <table border="1"> <thead> <tr> <th>P01</th> <th>P01</th> </tr> </thead> <tbody> <tr><td>FIB</td><td>0.049E 9.7s</td></tr> <tr><td>FIB</td><td>0.048E 9.8s</td></tr> <tr><td>FIB</td><td>0.047E 9.7s</td></tr> <tr><td>FIB</td><td>0.049E 9.8s</td></tr> <tr><td>FIB</td><td>0.049E 9.5s</td></tr> <tr><td>FIB</td><td>0.049E 9.8s</td></tr> <tr><td>FIB</td><td>0.048E 9.8s</td></tr> <tr><td>FIB</td><td>0.045E 10.0s</td></tr> <tr><td>mean</td><td>0.048E 9.8s</td></tr> <tr><td>C.V.</td><td>2.8% 1.3%</td></tr> </tbody> </table> QC passed	P01	P01	FIB	0.049E 9.7s	FIB	0.048E 9.8s	FIB	0.047E 9.7s	FIB	0.049E 9.8s	FIB	0.049E 9.5s	FIB	0.049E 9.8s	FIB	0.048E 9.8s	FIB	0.045E 10.0s	mean	0.048E 9.8s	C.V.	2.8% 1.3%	• Install paper into printer and start QC test • C.V. < 7.5% and E > 0.030E → Everything is fine QC-Results: - Failed if C.V. > 7.5% Higher results indicate false alignment of cuvette, imprecise volumes (needle, syringe, pump), carryover (needle, wash position) - Failed if Mean of "E" < 0.030E Results below indicate false alignment of cuvette or problem with normal control or FIB reagent
P01	P01																						
FIB	0.049E 9.7s																						
FIB	0.048E 9.8s																						
FIB	0.047E 9.7s																						
FIB	0.049E 9.8s																						
FIB	0.049E 9.5s																						
FIB	0.049E 9.8s																						
FIB	0.048E 9.8s																						
FIB	0.045E 10.0s																						
mean	0.048E 9.8s																						
C.V.	2.8% 1.3%																						
Step-6: Reset Service Interval	Read next chapter 																						

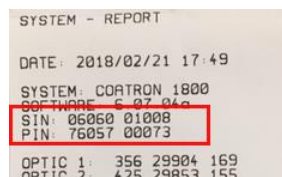
10. RESET SERVICE INTERVAL

	https://www.teco-medical.com/downloads.html?group=Coatron_A&category=Instructions-Serviceguide&search=interval
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1) Login to Teco Ticket system www.teco-reg.com

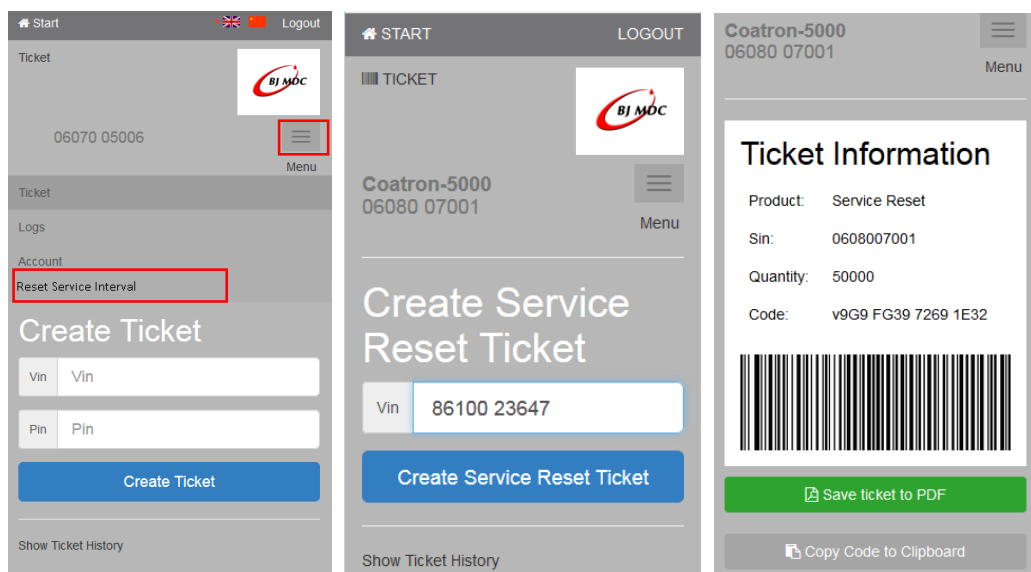


Open www.teco-reg.com and enter SIN+PIN. Alternative use your mobile device and scan QR code obtained by TECAM



SIN+PIN information can be obtained during instrument startup or menu SERVICE/PRINT REPORT

2) Create ticket



Print
PDF
and
scan

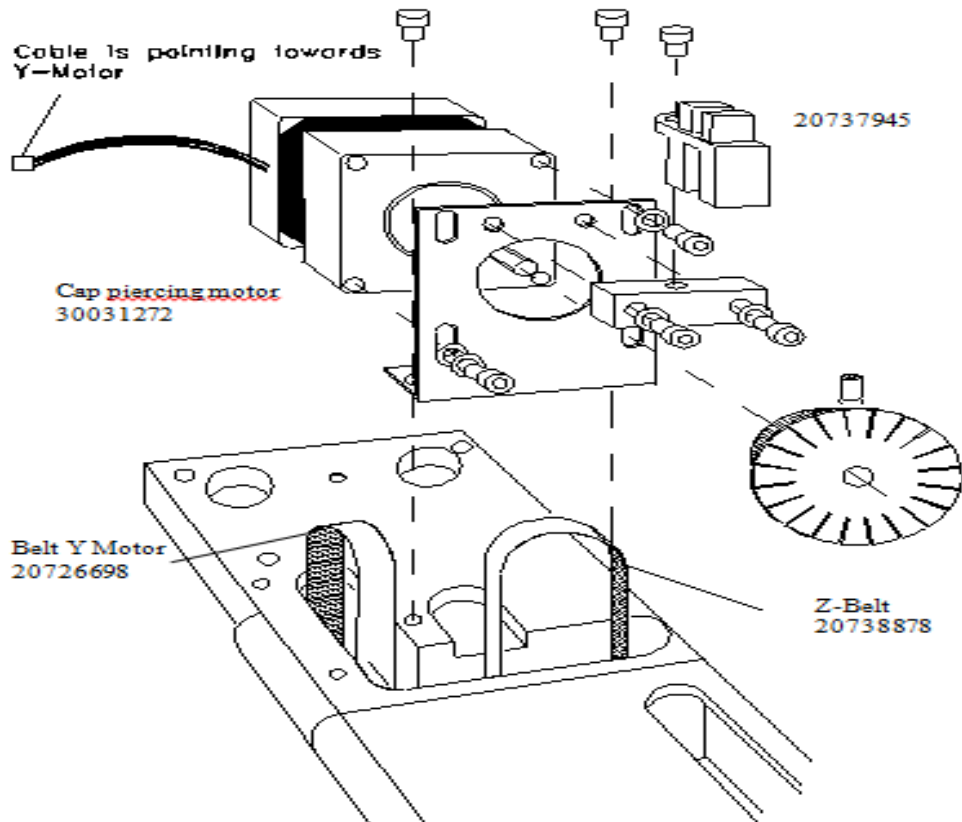
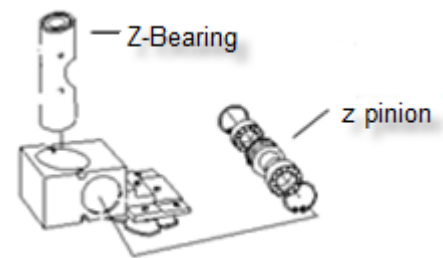
barcode on instrument or copy & paste to TECAM and send to instrument.

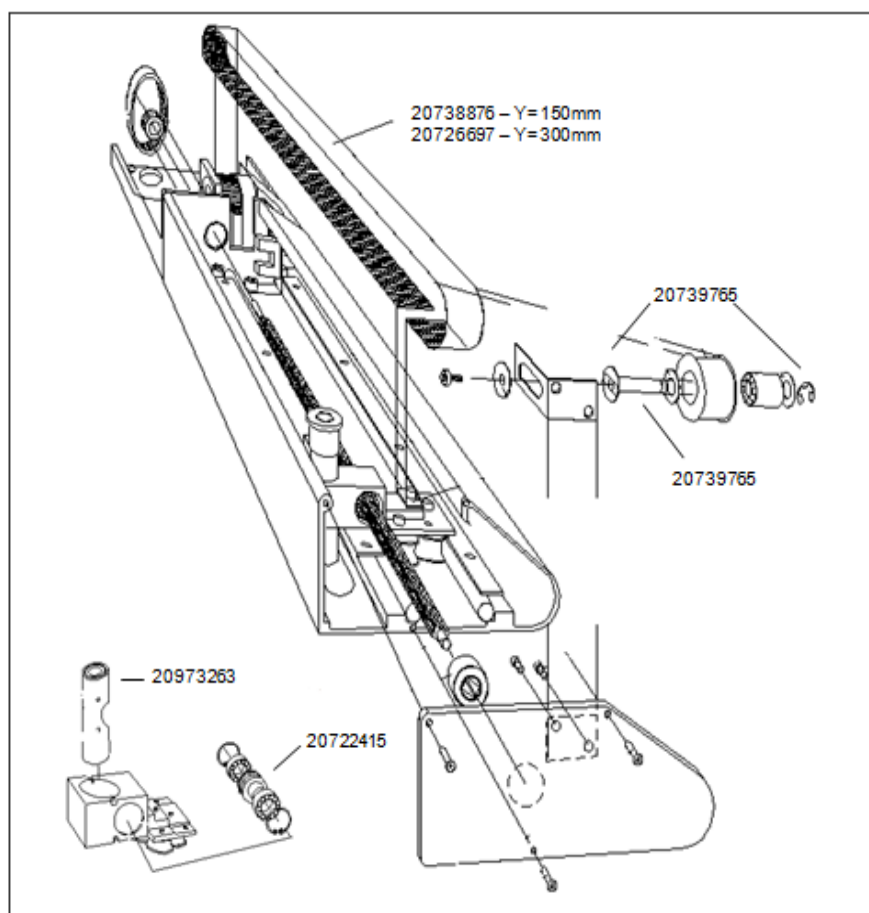
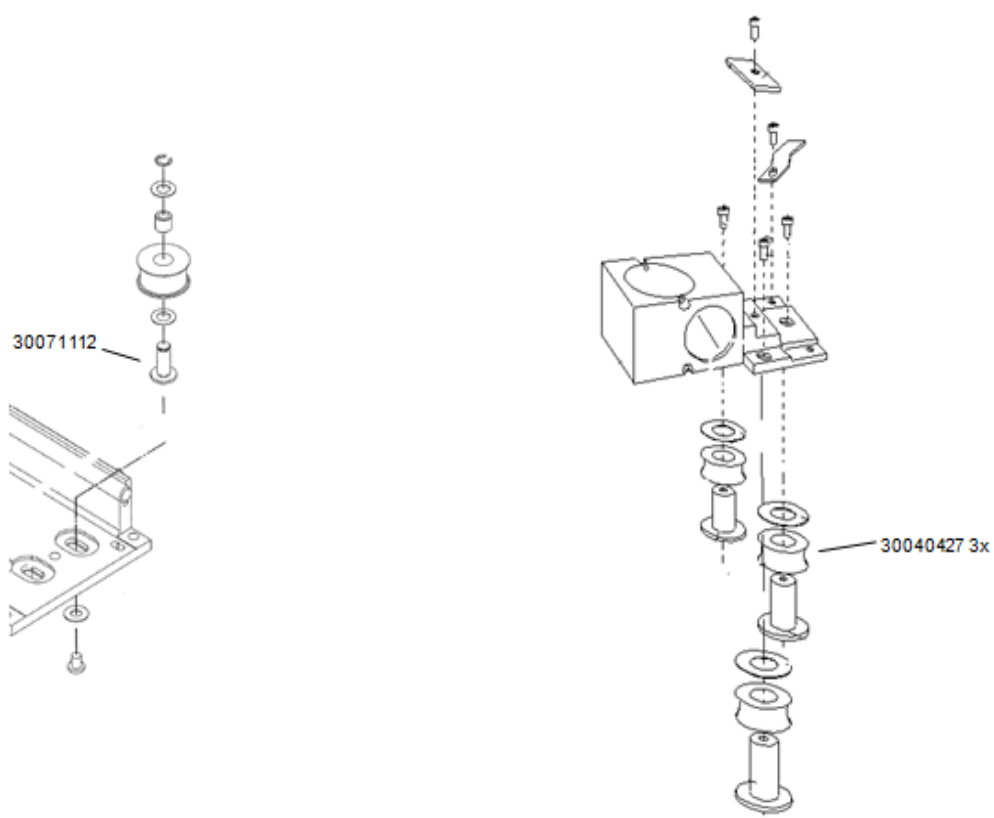
List of spare parts:

REF	Product	applied to
21 006 01*	Main board A4/A6, tested	A4/A6
21 006 01*	Main board Coatron A6+	A6+
21 009 02*	Adapter board Coatron A4/A6	A4/A6
21 010 00	Keyboard Coatron A4/A6	All
21 034 00	Waste complete, standard	All
21 061 00	Pump Coatron A4, complete	A4
21 061 06	Pump Coatron A6, complete	A6
21 063 01	Tubing A4/A6 (pump - container)	A4/A6
21 067 01	Pipette needle A4/A6, cap piercing	A4/A6
21 101 02	Laser-Barcodescanner (newer systems)	All
21 227 00	Reagent Motor cpl.	All
21 802 00	Alidum module	A4/A6
21 803 00	Main board pipetting system	A4/A6
21 804 00	ADRI-9 board without alidum module	A4/A6
21 806 00	Insulating block A4/A6 with cable	A4/A6
21 808 00	Syringe 1ml	A4
21 808 06	Syringe 2,5 ml	A6 / A6+
21 809 00	Valve A4 pump	A4
21 809 00	Valve XC , pump	A6
21 817 00	Optic block cpl. 405 nm (Coatron A4)	A4
21 817 06	Optic block cpl. A6	A6
21 910 00	Sample rack A4 P01-12	A4
21 911 00	Sample rack A4 P13-24	A4
21 913 00	Display cpl.	All
21 916 00	Peltierelement, 5V	All
21 916 06	Peltierelement 15V	A6 / A6+
21 918 00	Power supply	All
21 921 01	Gearboxmotor (6mm) new	All
23 063 01	Tubing blue (pump - container)	A6+
23 063 02	Tubing red (pump - needle)	A6+
23 063 03	Tubing yellow (pump - needle)	A6+
23 067 05	Pipette needle, A6+	A6+
23 070 00	Printer, easy paper load	A6+
23 803 00	Cable, liquid detection coax L=110	A6+
23 810 00	Main board pipetting system	A6+
23 811 00	Main board X, Y, Z-axis	A6+
23 814 00	PCBA board, dual Z box	A6+
23 816 00	Valve XC+, teflon M6 with label	A6+
23 817 00	Optic block cpl. A6+	A6+
23 818 00	Insulationblock cpl. Coatron A6Plus	A6+
62 070 00	Battery SL750/PT (Main board)	All

Sparte PARTS for COATRON A4/A6 ROBOTIC SYSTEM

PN	Description
20739256	Sensor Alidum Level
20733040	Z-Rack - 250 mm
20739765	Pulley Y-Idler Assy
30071112	PULLEY X-IDLER ASSY RSP SPR
30040427	Roller Track Y RSP (3) (for Y wagen)
20722415	Gear Pinion Z
30031272	MOTOR RSP Z ARM H-TORQUE
20738870	Kit Belt X Drive RSP L520 (3.310 FT)
20738876	Kit Belt Y Drive RPS 150
20738878	Kit Belt Z Drive RSP 85T
20726698	Belt Y-Motor
20739763	MOTOR ASSY X-AXIS
20973263	Z-Bearing
20729370	Valve, 3P, 1/4-28, XE/XC/XLP/SVP
20739046	PCBA XE RS-232/RS-485 Spare
20739717	PCBA RSP V4.2 CCU 1-Arm Spare
20739419	PCBA ADRI-9 V2.0
30045657	MOTOR VALVE ASSY XE 3P SPARE
30049748	MOTOR PLUNGER DRIVE XE 3P ASSY SPARE
20737945	Sensor Optical RSP9000
20739435	Flatcable Flex Left Arm RSP
20739429	Motor Assy Y Standard RSP





Rev-1 24.3.2014 CB
- initale Version

Rev-2 1.3.2016 CB
- Service Interval changed from 100K to 50K
- Yearly activity with syringe and air fan cleaning

Rev-3 8.6.2016 CB
- RSP Wartung

Rev-4 23.5.2018 CB
- Sciherheitshinweise

Rev-5 20.7.2019 CB
- Empfehlung für Serviceteile