

TECO	Service Inspection Coatron A4 / A6 / A6 Plus 1800 / 3000 / 5000 / AC-4 QC according to Final-Test-Specification PA-07-10	Rev.: 38 Page: 1 of 8

Model:	Serial - No.:	Firmware Rev.:
Manufactured by		
OEM:	Date of QC test:	Analyze Timer:
Enduser:	Distributor:	
Tester:	From Company:	
Test site / Laboratory:	Teco GmbH, 1 Floor	
Laboratory air condition	Temp °C rel. H.: % above Sea:	
Used measurement equipment:		
Reason of test:	☐ Service ☐ Repair	

Certificate Of Inspection		
System checked according to test-specification PA-07-10 passed ☐ failed ☐		
System Decontamination	passed ☐	failed ☐
Functional Tests		
Components	passed ☐	failed ☐
Barcode Scanner	passed ☐	failed ☐
Cuvette Transportation	passed ☐	failed ☐
Temperature	passed ☐	failed ☐
Optic Check	passed ☐	failed ☐
Robotics	passed ☐	failed ☐
System Report	passed ☐	failed ☐
Real wet test	passed ☐	failed ☐
SIGNATURE / STAMP ►/..... ◄ (Service Engineerr)		

**Laser radiation**

Barcode Scanner, Laser Class 2. Avoid direct eye exposure longer than 25ms.

**System may contaminated with infectious material.**

Prior of any service system must be decontaminated with 30% diluted bleach or Bacillol.

1. Decontamination

- Instrument and wash position is cleaned with Bacillol

☐**2. FUNCTIONAL TESTS****2.1. Components**

- Date and Time are set correctly
- Reagent stirrer works
- LCD (display) shows all characters and dots
- Display contrast and backlighting is O.K.
- Keys going well and switching correctly
- Beep Signal is O.K.
- The printer works
- All drawers close and open correctly

☐☐☐☐☐☐☐☐**2.2. Barcode Scanner**

Goto menu "Analysis/New Worklist" and set barcode=YES. Place barcode tubes into each rack positions.

- All rack barcodes are detected
- All racks can be moved easily and do arrest correctly
- Scanner do not blind

☐☐☐**2.3. Cuvette Transportation**

Fill green water (use a pen marker to color the water) into two cuvettes. Remove all cuvettes and place one green cuvette into carousel then goto menu "Service/Adjust Motor".

- Optic LED lights pass through cuvette centered to measure chamber
- Torque of gear is correct (turn of motor axis must go very strongly by fingers)

☐☐

2.4. TEMPERATURE

Measured with a calibrated thermometer; incubationtime > 15min).

air temperature

	°C	(limits: 15°C to 30°C)
--	----	------------------------

☐

air rel. humidity

	%	(limits: 30% to 70%)
--	---	----------------------

☐

	Cuv @ Optic	Heat @PT	Cool @aPTT ^{(2), (3)}
Current			
Target ⁽¹⁾			10.0 - 15.9°C
Delta from target	± 0.5 °C	± 1.0 °C	-

⁽¹⁾ Target temperature depends on OEM version and can be read within menu Service/Adjust Temperature

⁽²⁾ Measure cool temperature 30-60min after switch on.

⁽³⁾ The cool temperature of systems older than 2013 must be with 15.0 – 19.5°C

All temperature measured in range (= target +/- delta)

☐

2.5. Optic Check

- Signal ON of empty channels is within **9000 - 11000** (28000-32000 for SW-Version before 03'2019) ☐
- Signal OFF of empty channels is within **50 to +350** ☐
- Signal AMP of empty channels is within **100 – 400** ☐
- Temperature value T1 cuvette 37°C/39°C: within **34000 – 34500 / 34250 – 34750** ☐
- Temperature value T2 reagent 30°C/37°C: within **33300 – 33800 / 34000 – 34500** ☐
- Temperature value T3 cooling HI / LO: within **31000 – 31750 / 31750 – 32250** ☐
- (* only A6 / A6 Plus. Target depend on system setting "COOL")
- The light beams centered and parallel to cuvette ☐

2.6. Robotics

- Check needle

Needle is mounted at 115mm (A6Plus 110mm)

☐

Needle is straight and centered to needle protection

☐

There is no visible damage of material and coating

☐

- Run "SERVICE\ADJUST XYZ"

➤ X-OFFSET WASH is within: RSP: ± 7 OMNI: ± 10

☐

(preadjust x-offset with home position)

➤ Y-OFFSET WASH is within: RSP: ± 7 OMNI: ± 10

☐

➤ Z-OFFSET WASH is within: RSP: ± 10 OMNI: ± 10

☐

(preadjust z-offset by shifting needle inside/outside)

- Run "SERVICE\CLEAN NEEDLE"

➤ needle is flushed smoothly outside

☐

➤ the rinse seeps slightly

☐

➤ Level sensor is correct working for cleaning position

☐

➤ System can detect "out of liquid" (remove cleaner)

☐

- Run "SERVICE\CHECK ROBOTICS"

Result of check robotics

- Vibration test of needle

During levelsensing touch and knock slightly to z-rack. No false level is allowed.

☐

	Coatron A4	Coatron A6	Coatron A6 Plus	
Steploss XYZ	0	0	-	☐
Robot failed	≤ 1	≤ 1	-	☐
Diluter failed	≤ 1	≤ 1	-	☐
Diluter speed	4800 - 5600ms	4500 - 5100ms	4000 - 4600ms	☐
False level	0	0	0	☐
Robot crash	Re-Init	Re-Init	Continue	☐

3. SYSTEM REPORT

4. REAL „WET“ TEST

- Connect with TECAM. All results + curves are transmitted correctly. ☐

- Goto menu ANALYSIS\NEW LIST and set

TEST=FIB	BARCODE=NO	REFLEX=NO
DOUBLE=NO	SAMPLES=8	MODE=EV1 or QC

Tip: Select MODE=QC to set all worklist parameter automatically !!

- Place material

Coatron A4	Coatron A6/A6 Plus
P01 Normal Control	P01 Normal Control
P39 IBS Buffer	P79 IBS Buffer
P29 FIB Reagent	P49 FIB Reagent
2 cuvettes + Clean solution	2 cuvettes + Clean solution

Attach here
result report

Result (sec): CV = _____ % is below 7.5%

passed ☐

failed ☐

Signal (E): CV = _____ % is below 7.5%

passed ☐

failed ☐

Mean = _____ E is > 0.030E

passed ☐

failed ☐

System Inspection		
Model:	Serial - No.:	Firmware Rev.:
Service Interval	☐ yearly ☐ 50.000 ☐ 100.000 ☐ 200.000	
Failure/Repair during service		
Date of service	Service engineer (Name, Company)	Signature/Stamp

Quick Check

yes ☐

• Syringe is tightened	passed ☐	failed ☐
• Tubing/Fittings is tightened	passed ☐	failed ☐
• Tube to rinse tank is correct adjust	passed ☐	failed ☐
• Insulationblock is tightened	passed ☐	failed ☐
• Needle probe is tightened	passed ☐	failed ☐
• Rinse tank is full + Waste tank is empty	passed ☐	failed ☐
• XYZ-offset of needle at wash is close to zero	passed ☐	failed ☐
• Complete XYZ adjustment is checked	passed ☐	failed ☐
• Cuvette motor torque is correct	passed ☐	failed ☐
• CLEAN NEEDLE: No air-bubbles inside syringe	passed ☐	failed ☐
• CLEAN NEEDLE: Needle is washed inside+outside	passed ☐	failed ☐
• Cuvette microswitch is checked	passed ☐	failed ☐
• Optic values are checked	passed ☐	failed ☐
• Cuvette stops at correct position	passed ☐	failed ☐
• Liquid Level sensor function is checked (COAX cable)	passed ☐	failed ☐
• System date is correct	passed ☐	failed ☐
• Test protocols and calibration are checked	passed ☐	failed ☐
• System report is checked	passed ☐	failed ☐
• Battery voltage > 3.3V (SL 750/PT 3.6V 1.1A)	passed ☐	failed ☐
• PT reagent mixing is working	passed ☐	failed ☐
• Service Interval is reset	passed ☐	failed ☐

Every service

yes ☐

• Clean and decontaminate instrument	yes ☐	no ☐
• Remove syringe and clean plunger	yes ☐	no ☐
• Clean the fan of power supply	yes ☐	no ☐
• Clean particle filter inside of rinse tank	yes ☐	no ☐
• Perform real wet test (8xFIB or PT)	yes ☐	no ☐

Fully inspections according to PA-07-10

yes ☐ no ☐

• Components checked	passed ☐	failed ☐
• Barcode Scanner checked	passed ☐	failed ☐
• Cuvette Transportation checked	passed ☐	failed ☐
• Temperature checked	passed ☐	failed ☐
• Optic checked	passed ☐	failed ☐
• Robotics checked	passed ☐	failed ☐
• System report checked	passed ☐	failed ☐
• Real wet test checked	passed ☐	failed ☐
• TECAM communication checked	passed ☐	failed ☐

Replacements

• Replace needle	yes ☐	no ☐
• Replace syringe	yes ☐	no ☐
• Replace valve	yes ☐	no ☐
• Replace tubing	yes ☐	no ☐
• Replace wash position	yes ☐	no ☐
• Replace insulation block	yes ☐	no ☐
• Replace all tubing	yes ☐	no ☐
• Replace rinse particle filter	yes ☐	no ☐
• Check battery on mainboard (SL 750/PT 3.6V 1.1A) and replace if below 3.3V	yes ☐	no ☐