


# TOSI® - Troubleshooting Guide: What to do in case of...

2010-05

Test Results	Rating	Description	Possible Reasons for TOSI Test Results	Immediate corrective action (to be conducted by SPD personnel)	Proposal for optimization of relevant process parameters (requiring Service Engineer)
	0	<b>Optimum Result</b> Test soil is completely dissolved, no test soil residuals left	Optimum result	not necessary	not necessary
	1	<b>Negative Result</b> Completely rinsed = no water soluble proteins visible, but small amount of fibrin residuals remains	<ul style="list-style-type: none"> <li>a) Incorrect positioning of Test</li> <li>b) Overloading/incorrect loading*</li> <li>c) Temperature not optimal</li> <li>d) Dosage of cleaner too low</li> </ul>	<ul style="list-style-type: none"> <li>a) Repeat test protocol with small load*</li> <li>b) Investigate cleaning time</li> <li>c) Investigate cleaning temperature</li> <li>d) Check dosage/concentration of detergent</li> </ul>	<ul style="list-style-type: none"> <li>a) In case of confirmation: Consider other possible reasons</li> <li>b) Adjust cleaning time to type of cleaner or extend time</li> <li>c) Adjust cleaning temperature to type of detergent</li> <li>d) Increase dosage</li> </ul>
	2	<b>Negative Result</b> Completely rinsed = no water soluble proteins visible, but most or all of the fibrin layer remains	<ul style="list-style-type: none"> <li>a) Incorrect positioning of Test</li> <li>b) Overloading/incorrect loading*</li> <li>c) Cleaning time too short</li> <li>d) Temperature not optimal</li> <li>e) Dosage of cleaner too low</li> <li>f) Insufficient detergent efficiency</li> </ul>	<ul style="list-style-type: none"> <li>a) Repeat test protocol with small load*</li> <li>b) Repeat test protocol with correct load*</li> <li>c) Investigate cleaning time</li> <li>d) Investigate cleaning temperature</li> <li>e) Check dosage/reservoir or cleaner</li> <li>f) Check storage conditions and expiration Date of detergent.</li> </ul>	<ul style="list-style-type: none"> <li>a) In case of confirmation: Consider other possible reasons</li> <li>b) In case of confirmation: Consider other possible reasons</li> <li>c) Adjust cleaning time to type of cleaner or extend time</li> <li>d) Adjust cleaning temperature to type of detergent</li> <li>e) Increase dosage or refill/replace reservoir</li> <li>f) Replace wrongly stored or expired detergent</li> </ul>
	3	<b>Negative Result</b> Incompletely rinsed = small residuals of the water soluble (red) proteins visible, no or only little amount of fibrin layer remains visible	<ul style="list-style-type: none"> <li>a) Incorrect positioning of Test</li> <li>b) Overloading/incorrect loading*</li> <li>c) Non-uniform water distribution</li> <li>d) Blocked spray system</li> <li>e) Blocked filter</li> <li>f) Insufficient water pressure</li> <li>g) Foaming tensides left over from pre-cleaning or ultrasonic bath</li> </ul>	<ul style="list-style-type: none"> <li>a) Repeat test protocol with small load*</li> <li>b) Repeat test protocol with correct load*</li> <li>c) Check coupling of spray system</li> <li>d) Check movement of spray arms and clean</li> <li>e) Check filter</li> <li>f) -</li> <li>g) Rinse medical devices more carefully after pre-cleaning or ultrasonic treatment</li> </ul>	<ul style="list-style-type: none"> <li>a) In case of confirmation: Consider other possible reasons</li> <li>b) In case of confirmation: Consider other possible reasons</li> <li>c) Install spray system correctly or replace by suitable one</li> <li>d) Replace defective spray arm if necessary</li> <li>e) Replace Filter if necessary</li> <li>f) Check/increase water pressure, check function of pump</li> <li>g) -</li> </ul>
	4	<b>Negative Result</b> Incompletely rinsed = significant residuals of the water soluble (red) proteins visible, in addition most or all of the fibrin layer remains	<ul style="list-style-type: none"> <li>a-g) same as rating 3 but more distinct</li> <li>h) Defective pump</li> <li>i) Loss of pressure or other defect</li> <li>j) Incorrect temp for detergent</li> </ul>	<ul style="list-style-type: none"> <li>a-g) Same as rating 3</li> <li>h) -</li> <li>i) Made any observations about leakages?</li> <li>j) Investigate cleaning temperature</li> <li>k) Check tube connections/reservoir/storage conditions/expiration date of detergent</li> </ul>	<ul style="list-style-type: none"> <li>a - g) same as rating 3</li> <li>h) Replace pump</li> <li>i) Repair leakage and/or replace defective spare parts</li> <li>j) Select and set appropriate parameters for detergent in use</li> <li>k) Reconnect tubing refill or replace reservoir/replace wrongly stored or expired detergent</li> </ul>
	5	<b>Negative Result</b> TOSI - Test soil is largely or completely remaining	<ul style="list-style-type: none"> <li>a-k) same as rating 4</li> <li>l) No cold pre-rinsing step in place or too hot pre-rinsing</li> <li>m) Complete breakdown of the washer and/or the chemistry</li> </ul>	<ul style="list-style-type: none"> <li>a-g) Same as rating 3</li> <li>h) -</li> <li>i) Made any observations about leakages?</li> <li>j) Investigate cleaning temperature</li> <li>k) Check tube connections/reservoir/storage conditions/expiration date of detergent</li> </ul>	<ul style="list-style-type: none"> <li>a - k) same as rating 4</li> <li>l) Reduce pre-rinsing temperature below 40°C or install cold pre-rinsing cycle</li> <li>m) Investigate carefully all relevant cleaning parameters and make necessary corrections.</li> </ul>

**Recommended Cleaning Parameters** (please refer also to the specifications of the manufacturer)

Type of Cleaner	Concentration	Cleaning Time	Temperature
Alkaline Cleaner pH-Value >11,5	5 g/litre	5 min	> 60°C
Neutral Cleaner with Enzymes	10 g/litre	10 min	45°C
Neutral Cleaner without Enzymes	7 - 10 g/litre	10 min	45° - 60°C

## Important note

In case of unsatisfactory test results these results should be confirmed by rerunning the test. In case of confirmation of the initial test results it is recommended to investigate potential reasons for the failure. In case the cause of a failure cannot be resolved by the SPD staff the technical service rep of the manufacturer of the machine or detergent should be contacted. **It is not recommended to change any installed parameters if such modification is restricted to the technical service of the supplier! Such violation may result in loss of warranty!**

\* When following "Daily Protocol" for testing. See <http://www.proformance-test.com/SupportMaterial/CleaningProtocol.htm>