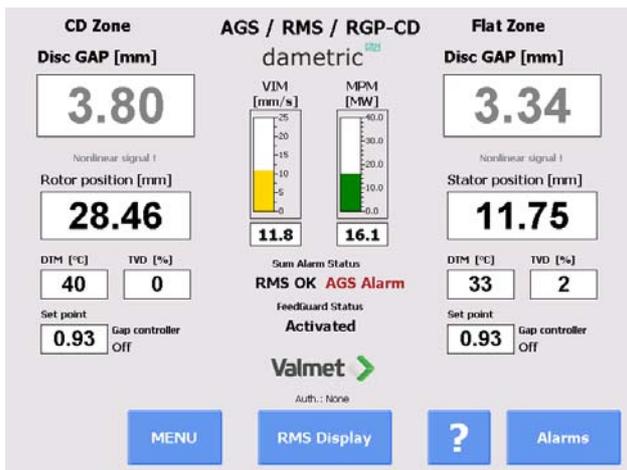
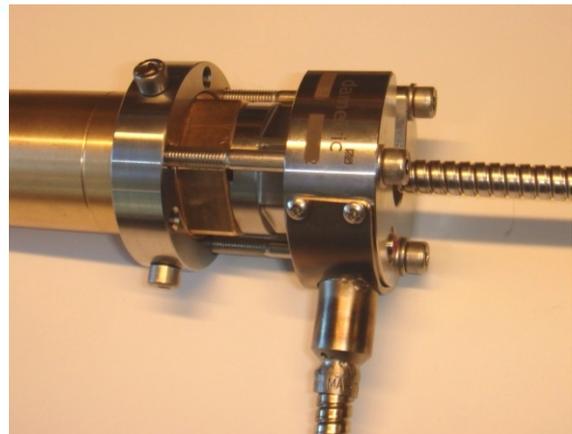
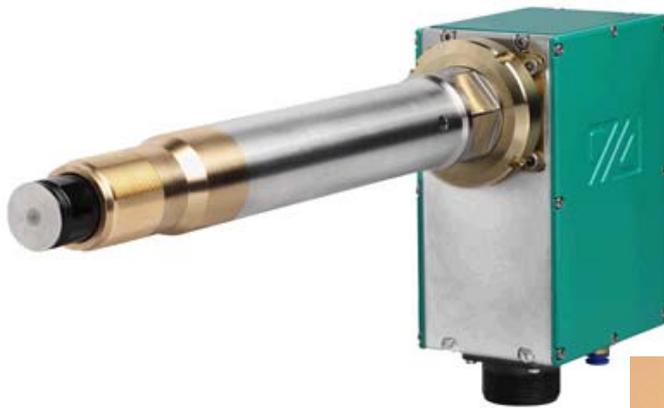


# dametric

## AGS TDC Changeover



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# 1. Overview

This manual describes the process of converting to TDC sensors in an AGS installation. It also describes a calibration by the method of running the rotor plates in contact with the stator plates. The TDC mode is an emergency exit in case of AGS head problems and the user must do the following:

- Replace the AGS sensors with TDC sensors.
- Replace the K-AGS3 cable with the K-AGSTDC3 cable.
- Mount a TVD-T3T1 sensor on top of the TDC sensor.
- Disconnect the TVD cable from the connection box and connect it to the new TVD sensor.
- Change the calibration parameters. The user also has to change the zero/span calibrating parameters of the DCA unit from normally 0.10/1.10 mm for the AGS sensor to 0.50/1.50 mm for the TDC sensor.
- Change the AGS type setting. The user changes the sensor type form “AGS-XXX” to “TDC sensor” which will enable the TDC calibration form. This form will help the operator to read and calculate the relative movement of the rotor.
- Do a plate-to-plate calibration of the TDC sensors when the refiner is idling. This is a manual mode so the operator must run the rotor package in and out to first take the touch, then back off for the zero point and then to back off further to take the span point.

The refiner interlocking must be released which is done by a key-switch.

The necessary buttons for the calibration are presented on the Panel-PC while the movement of the rotor is executed by switches on the refiner panel.



# 2. Alarms

Due to that this is a temporary solution, there were still be some alarms on the Panel-PC after the conversion.

## 1.1 ACM-RM1 Unit alarm

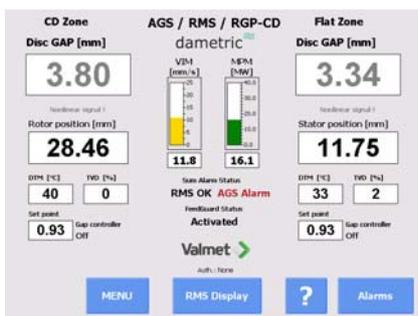
The ACM will alarm for the replaced AGS head. The yellow CAN-led will double flash to indicate that there is no CAN traffic from the AGS. The DCU-unit will not indicate any alarm.

## 1.2 Alarms on the Panel-PC

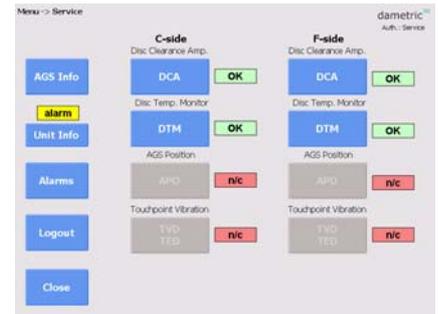
The main display form will indicate a sum alarm for the replaced AGS Heads.

These alarms are displayed if the Alarm button is activated.

The Unit info message under the Service menu will indicate the missing AGS heads.



The Service form will indicate alarms for the missing functions in the AGS head.



### 3. Hardware changeover

#### 1.3 Replace the AGS/TDC cable

Remove the K-AGS3 cable between the AGS sensor and the cable cox. Install the K-AGSTDC3 cable to the cable box.

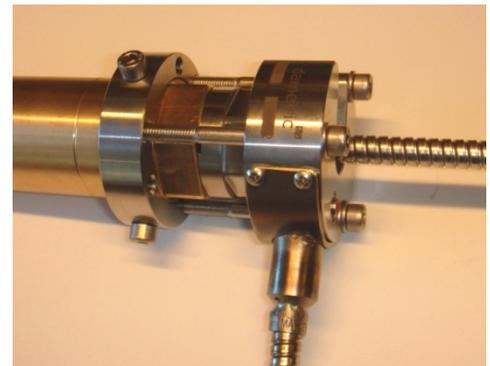
#### 1.4 Replace the AGS sensor

Remove the AGS sensor from the refiner. Mount the locking ring of the TVD sensor to the TDC sensor. Tighten the bolts. Clean the thread in the segment holder and mount the TDC sensor.



#### 1.5 Mount the TVD sensors.

Mount the K-AGSTDC3 cable to the TDC sensor. Mount the TVD sensor on top of the TDC sensor. Tighten the bolts. Disconnect the K-TVDS25 cable from the connection box and connect it to the TVD sensor.



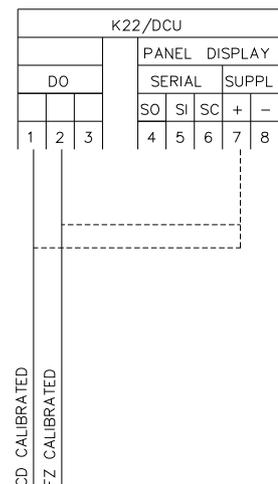
#### 1.6 24VDC connection

Connect 24VDC to the switch be able to turn off the “NOT CALIBRATED” lamp in the panel door. This signal output is normally activated by the DCU unit when it has received calibration data from the AGS head. With no AGS head installed we have to add 24VDC to these outputs, one for the CD and one for the FLAT zone.

Make the connections in the connector area at the bottom of the rack-unit.

Note! The existing wiring to K22/1 and K22/2 must remain connected.

- Connect K22/7 (US+) to K22/1 (DO+DCU4) and to K22/2 (DO+DCU5).

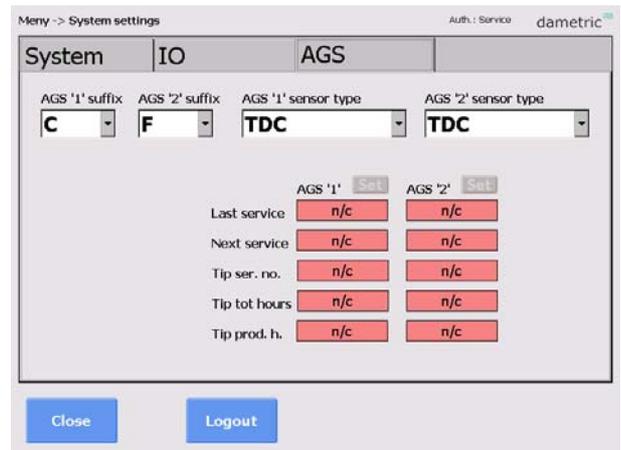


## 4. Change parameters

### 1.7 Select TDC sensor type

Log in as administrator and tap the System Settings button on the Menu form. Then select the AGS tab and tap on the AGS sensor type. Select the “TDC” alternative.

Each sensor has its individual setting. Close the system settings form.



### 1.8 Calibration parameters

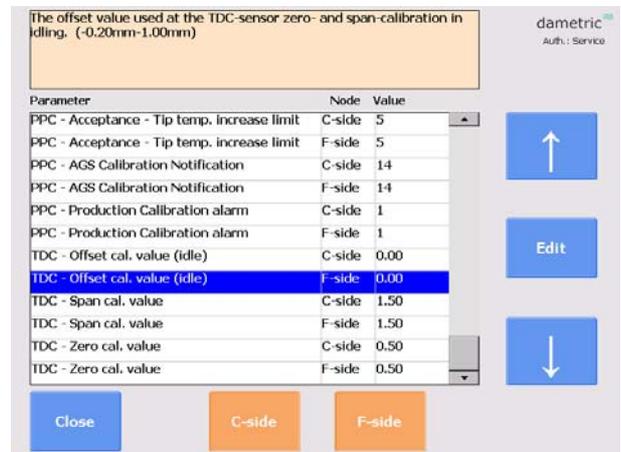
Note the current settings which will be used again once the AGS sensors are reinstalled.

Click the Parameters button in the ‘AGS Service form’. Set the parameters as follows:

TDC – Offset cal. value (idle) = 0.00

TDC – Span cal. value = 1.50

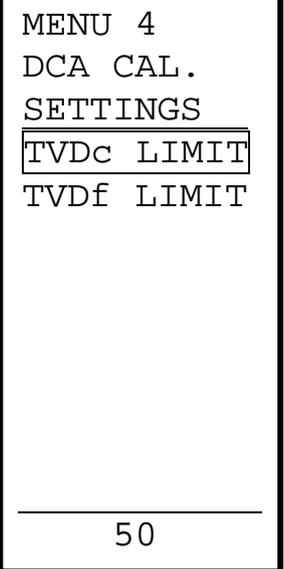
TDC – Zero cal. value = 0.50.



### 1.9 RMS-DCU calibration setting

Press the Menu button of the DCU unit in the RMS rack.

Check the parameters “TVDc LIMIT” and “TVDF LIMIT” because these are operative during the TDC calibration. The default setting is 50% limit.



## 5. Touch position switch

The user must enable the TDC idle calibration by the “TOUCH POS” switch on the panel door.

Set the switch in the “CONICAL” or the “FLAT” position.



## 6. AGS Service form

### To open the AGS Service form

- Open the Menu form.
- Log in with the service code (2730).
- Press the AGS Service button.

### TDC Calibrate

Use the TDC Calibrate button to calibrate the TDC sensor with the refiner idling.

The button is only enabled if the 'Touch Position' switch on the panel is activated.

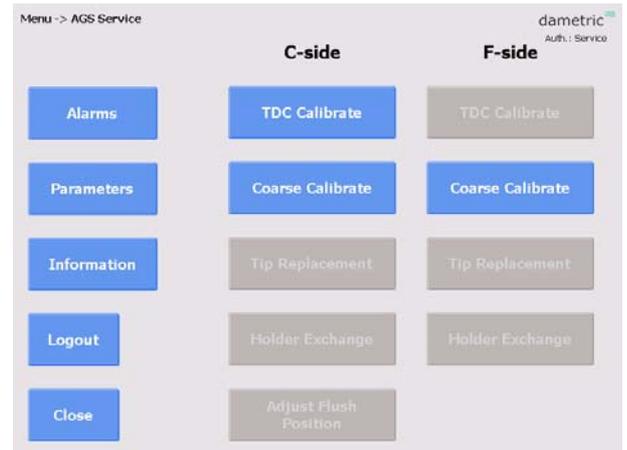
### Coarse Calibrate

Use the Coarse calibrate button to do a precalibration of the TDC sensor when it is mounted in the refiner.

A new sensor has to be coarse calibrated before it is calibrated in an idling refiner. Move the plates wide apart (> 8mm) and press the button. The indicated TDC value will be 3.80.

Note that the coarse calibration can be interlocked by a minimum rotor or stator position.

Never do a second coarse calibration after the sensor is zero- and span-calibrated. If done, the user has to do a new zero- and span-calibration with the refiner idling.



## 7. TDC Calibrate form

- Open the Menu form.
- Log in with the service code (2730).
- Press the AGS Service button.
- Press the TDC Calibrate button for the chosen side.

The selected side in a CD refiner has white text boxes while the passive side has text boxes in gray. The passive side is presented to the operator to avoid unwanted plate clash of this side. Note that the refiner interlocking is disabled by that the 'TOUCH POS' switch is activated.

### Event list

The event list window will present the events that have happened during the calibration.

### Action

The action window will present which action the operator should do.

### Rel.Gap

This text box will pop up when the touch point is detected and will be preset to -0.10mm. The operator must then quickly back the plates off to a 0.00 reading. It is automatically compensated for the gap to rotor position ratio according to the setting in the DCU unit.

### Start/Cal

This button will have alternate text depending on where in the procedure we are. It will read 'Zero' when to zero calibrate and 'Span' when to calibrate the span.

### Force TVD

The button is an escape way to manually force a touch point. It is shown once the calibration is started.

### Info/Info off

This button will alternate between the calibration parameters and the event list in the event list window.

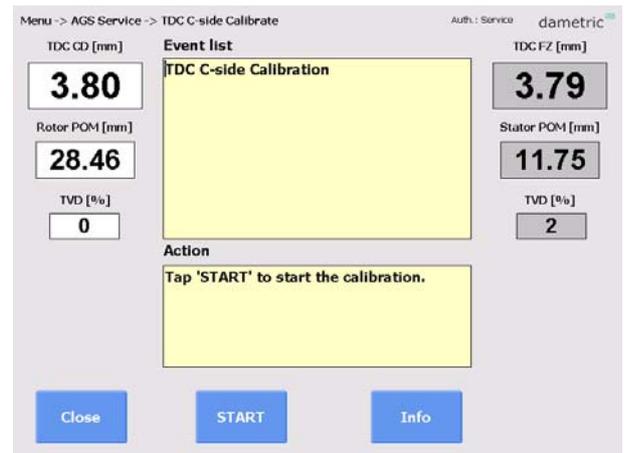
### Zero and span parameters

The parameters are set by parameters in the DCA-RM1 unit. These are reached by the 'Parameter' button in the AGS Service Form.

### TVD limit parameter

The TVD parameter to determine the touch point is set in the DCU unit under DCA Cal. Settings.

The procedure will be stopped if the 'TOUCH POS' switch on the panel is deactivated.



## 8. TDC calibration sequence

### 1.10 Coarse Calibrate

Do the coarse calibration when the TDC sensors are mounted and with a large gap (> 8mm) between the plates. The refiner can be still or running in idle.

Be sure to do the coarse calibration if you have changed the TDC sensor. The TDC reading will be set to 3.80 mm upon execution.

### 1.11 Zero- and Span Calibration

- The refiner must be running in idle to do the calibrations.
- Activate the 'TOUCH POS' switch for the selected side, 'CONICAL' or 'FLAT'.
- Run the plates together gently by the pushbuttons on the panel. Observe the TVD level for the selected. Also observe the TDC value for the passive side to avoid plate clash.

#### Touch point

- Move the rotor (or stator) until the plate's touches and the touch point is reached. The 'Rel. Gap' text box will appear on the screen.
- Move the plates apart immediately until a 0.00 'Rel. Gap' value.

#### Zero calibration

- The 'Rel.Gap' should indicate 0.00 ( $\pm 0.02$ ) mm.
- Press the 'Zero' button to calibrate the TDC according to the zero parameter setting (normally 0.50mm).

#### Span calibration

- Move the plates apart until the Rel.Gap indicates 1.00 ( $\pm 0.02$ ) mm.
- The 'Span' button will be shown as soon as the Rel. Gap is higher than 0.80 mm.
- Press the 'Span' button to calibrate the TDC according to the span parameter setting (normally 1.50mm).

#### Finish calibration

- Press the 'Finish' button on the PanelPC.
- Set the 'TOUCH POS' key switch to the off position and then press the 'Set' button on the refiner panel to turn the 'Not Calibrated' lamp off.

## 9. Reconnection of the AGS

### 1.12 Hardware

- Disconnect the wire between K22/7 (US+) and K22/1 (DO+DCU4) and K22/2 (DO+DCU5).
- Reconnect the TVD cable from the TVD-T3T1 sensor to the KC-AGS1R connection box.
- Remove the TVD-T3T1 sensor.
- Remove the TDC sensor.
- Install the AGS sensor.
- Install the K AGS3 cable between the AGS sensor and the connection box.

### 1.13 Parameters

- Log in as administrator and tap the System Settings button on the Menu form. Then select the AGS tab and tap on the AGS sensor type. Select the “AGS Eject” alternative.
- Click the Parameters button in the ‘AGS Service form’. Set the parameters as follows:  
TDC – Offset cal. value (idle) = 0.00  
TDC – Span cal. value = 1.00  
TDC – Zero cal. value = 0.00  
Note. 0.00 and 1.00 are a default values, check the previous setting and set accordingly.

## 10. CONTACT

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