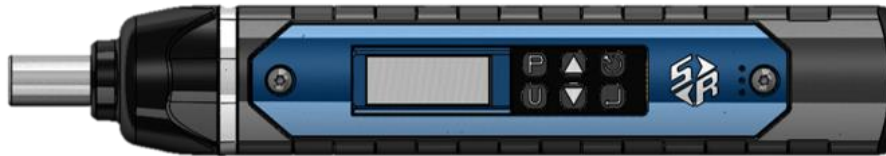




## EXACTA 1350-TD SERIES DIGITAL TORQUE AND ANGLE DRIVER Calibration Instructions



The calibration process for the Exacta 2 1350-TD tools has three sub-processes. The first is testing the tool to determine the “as found” condition. If the tool is out of calibration, then two subsequent processes are performed; calibration adjustment to bring the tool into calibration, and subsequent repetition of tool testing to assure that the adjustments were effective and the results are valid.

We strongly recommend that when performing the calibration process a torque tester of not less than 0.25% Indicated Value Accuracy be used, and that it be used in conjunction with a mechanical loader to obtain proper loading of the tool. We recommend the tool be temperature stabilized before testing and a fully charged battery be used during the procedure to assure the tool does not suffer a loss of battery power during the process.

### TORQUE CALIBRATION PROCEDURE

To begin the calibration process, the tool must be placed in calibration mode.

- Access the tool menu by holding the  $\leftarrow$  key for 3 seconds.
- Use  $\blacktriangle/\blacktriangledown$  to highlight CALIBRATION and press  $\leftarrow$  to select.
- Highlight and select CAL TORQUE.

The screen will blank for a few seconds before displaying the CALIBRATE TOOL screen.



- Press  $\blacktriangledown$  on the tool keypad to enter calibration mode. The Calibration Password screen appears.
- Enter the password using  $\blacktriangle/\blacktriangledown$  to change the value of each digit. Press  $\leftarrow$  to move to the next digit. The default password is “3112”. After all four digits have been entered, press  $\leftarrow$  to submit the password for verification. The “ZERO TARE” screen is displayed.
- Install drive adapter on torque tester. Set the tester to Track mode. Place tool with proper bit onto torque tester. Load and unload the tool three times to 100% of tool full scale capacity as indicated on the tester.
- Remove the tool from tester and hold in vertical position. If the red LED is on, press  $\odot$  to clear the reading.
- Press  $\leftarrow$  on the tool. The zero point is saved and the clockwise 100% target will be displayed.
- Set the tester to PEAK mode.
- Press ZERO on tester.
- Place the tool on tester.
- Apply clockwise torque to the tool until the tester shows 100% of tool full scale capacity within +/- 0.5%. Release torque slightly (1-2 counterclockwise rotations of the crank handle). NOTE: If the target value is exceeded, unload the tool and press  $\odot$  to restart from the ZERO TARE screen.
- Press  $\leftarrow$  to save the reading and return to the calibration menu.
- Completely release torque on the tool and remove from the tester.

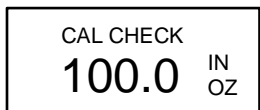
# EXACTA 1350-TD SERIES Operating Instructions

## ANGLE CALIBRATION PROCEDURE



- Set the ATEST180A clutch pressure.
  - For 80 in.lb models, set to a minimum of 8 in.lb.
  - For 100 in.oz models, set to a minimum of 30 in.oz.
- Use ▲/▼ to highlight CAL ANGLE and press → to select.
- Press ▼ on the tool keypad to enter calibration mode. The CAL PASSWORD screen appears.
- Enter the password as described previously. The tool displays “CAL ANGLE SET WRENCH IN FIXTURE”.
- Set the angle calibration fixture indexing rod to the START position.
- Place the tool in the angle calibration fixture. Press →. “ZEROING ANGLE DO NOT MOVE TOOL” will be displayed followed by “TURN”.
- Rotate the indexing rod 180° within 6 seconds to the END position.
- Press →. “DONE” is displayed.
- Press ← to return to the calibration menu.

## TORQUE CALIBRATION VERIFICATION



- Calibration Verification Notes
  - Refer to the Accuracy Charts Section of this procedure for acceptance values.
  - When the customer requires compliance to ISO 6789 use this procedure but with five (5) loads at each test point instead of three (3).
  - Perform the procedure in the clockwise direction first, then in the counterclockwise direction, being sure to exercise the tool when changing directions.
- Calibration Verification Procedure
  - Access the calibration menu as described previously.
  - Use ▲/▼ to highlight CHECK TORQUE and press →. The CAL CHECK screen is displayed with the tool capacity shown.
  - Place the tool onto the calibration fixture.
  - Load to 100% of tool full scale capacity and then unload to 0% 3 times.
  - Remove the tool and zero the tester. Press ↺ to zero tare the tool. Do this prior to the start of testing and after a break. The “Zero %F.S.” display should not exceed 5.0%.
  - Apply three torque loads at 20% of tool scale. Record/observe readings as applicable. Compare to the tool accuracy tolerance. If any reading is outside the tolerance range, the tool is rejected.
  - Apply three torque loads at 60% of tool scale. Record/observe readings as applicable. Compare to the tool accuracy tolerance. If any reading is outside the tolerance range, the tool is rejected.
  - Apply three torque loads at 100% of tool scale. Record/observe readings as applicable. Compare to the tool accuracy tolerance. If any reading is outside the tolerance range, the tool is rejected.
  - Reverse torque direction and repeat the zero/loading steps above.
  - Remove tool from the tester.
- Press ← to return to the calibration menu.

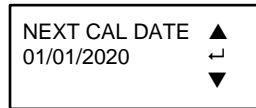
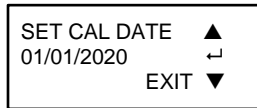
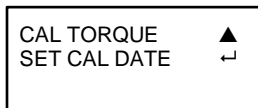
# EXACTA 1350-TD SERIES Operating Instructions

## ANGLE CALIBRATION VERIFICATION



- Set the ATEST180A clutch pressure.
  - For 80 in.lb models, set to a minimum of 8 in.lb.
  - For 100 in.oz models, set to a minimum of 30 in.oz.
- Access the calibration menu as described previously.
- Use ▲/▼ to highlight CHECK ANGLE and press ←. The CAL CHECK screen is displayed with “180” shown.
- Place tool on the angle calibration fixture.
- From CW 0° position, rotate driver CW to the 45° position, verify angle value reads within 42.5° to 47.5°.
- From CW 45° position, rotate driver CW to the 90° position, verify angle value reads within 87.1° to 92.9°.
- From CW 90° position, rotate driver CW to the 135° position, verify angle value reads within -131.6° to -138.3°.
- From CW 135° position, rotate driver CW to the 180° position, verify angle value reads within 176.2° to 183.8°.
- From CCW 0° position, rotate driver CCW to the 45° position, verify angle value reads within -42.5° to -47.5°.
- From CCW 45° position, rotate driver CCW to the 90° position, verify angle value reads within -87.1° to -92.9°.
- From CCW 90° position, rotate driver CCW to the 135° position, verify angle value reads within -131.6° to -138.3°.
- From CCW 135° position, rotate driver CCW to the 180° position, verify angle value reads within -176.2° to -183.8°.
- Press ← to return to the calibration menu.

## SET CALIBRATION DATES



- Access the calibration menu as described previously.
- Use ▲/▼ to highlight SET CAL DATE and press ←.
- The SET CAL DATE screen is displayed. Press ← to set the current calibration date.
  - The date format is displayed MM/DD/YYYY with the month highlighted.
  - Use ▲/▼ to change the value of the 2-digit month. Press ← to move to the next field.
  - Use ▲/▼ to change the value of the 2-digit day. Press ← to move to the next field.
  - Use ▲/▼ to change the value of the 4-digit year. Press ←.
  - Press ▼ to save the date and advance to setting the next calibration date.
- The NEXT CAL DATE screen is displayed. Press ← to set the current calibration date.
  - The date format is displayed MM/DD/YYYY with the month highlighted.
  - Use ▲/▼ to change the value of the 2-digit month. Press ← to move to the next field.
  - Use ▲/▼ to change the value of the 2-digit day. Press ← to move to the next field.
  - Use ▲/▼ to change the value of the 4-digit year.
- Press ← to save the date and return to the calibration menu.

# EXACTA 1350-TD SERIES Operating Instructions

## ACCURACY CHARTS

Accuracy tables are based on:

CW +/-2% tolerance for 20% to 100% of rated capacity, +/-4% tolerance for 5% to 19% of rated capacity.

CCW +/-4% tolerance for 20% to 100% of rated capacity, +/-6% tolerance for 5% to 19% of rated capacity.

Exacta 1350-TD100 – 100 Inch-Ounce Capacity						
Capacity In.Oz.	% Full Scale	Torque In.Oz	Clockwise		Counterclockwise	
			+ Tol.	-Tol.	+ Tol.	-Tol.
100	5	5	5.2	4.8	5.3	4.7
	10	10	10.4	9.6	10.6	9.4
	<b>20</b>	<b>20</b>	20.4	19.6	20.8	19.2
	30	30	30.6	29.4	31.2	28.8
	40	40	40.8	39.2	41.6	38.4
	50	50	51.0	49.0	52.0	48.0
	<b>60</b>	<b>60</b>	61.2	58.8	62.4	57.6
	70	70	71.4	68.6	72.8	67.2
	80	80	81.6	78.4	83.2	76.8
	90	90	91.8	88.2	93.6	86.4
	<b>100</b>	<b>100</b>	102.0	98.0	104.0	96.0

Exacta 1350-TD80 – 80 Inch-Pound Capacity						
Capacity In.Lb	% Full Scale	Torque In.Lb	Clockwise		Counterclockwise	
			+ Tol.	-Tol.	+ Tol.	-Tol.
80	5	4	4.16	3.84	4.24	3.76
	10	8	8.32	7.68	8.48	7.52
	<b>20</b>	16	16.32	15.68	16.64	15.36
	30	24	24.48	23.52	24.96	23.04
	40	32	32.64	31.36	33.28	30.72
	50	40	40.80	39.20	41.60	38.40
	<b>60</b>	48	48.96	47.04	49.92	46.08
	70	56	57.12	54.88	58.24	53.76
	80	64	65.28	62.72	66.56	61.44
	90	72	73.44	70.56	74.88	69.12
	<b>100</b>	80	81.60	78.40	83.20	76.80