Product Details

Take fastening accuracy and quality manufacturing to a higher level with Panasonic's next generation transducerized mechanical pulse tool.
AccuPulse 4.0 offers the advanced precision, comprehensive data collection and best-in-class reactionless ergonomics. Four onboard microcomputers and transducer intelligently manage torque sensing, motor control, power, and wireless communication for an Industry 4.0 compatible assembly solution like no other.

Key Features

- One-hand cordless operation with no reaction for increased worker safety and freedom of movement
- Durable high resolution non-contact torque sensor for reliable torque measurement
- Patented torque traceability and torque curve detection algorithm for high accuracy
- Double hammer mechanism for optimized torque calculations
- Advanced programmable features for greater productivity and plant automation
- Wireless 2-way communication
- Data collection for monitoring torque, angle, time, OK/NOK, pulses and graph
- Eco-friendly, low maintenance and energy efficient

Multi-tool Controller

Model Number	EYFMH2RC	EYFMH2RP	EYFMH1RC	EYFMH1RP
				
Torque range	50-120Nm	50-120Nm	20-60Nm	20-60Nm
Anvil type	C = 1/2" Sq. C-Ring w/ through Hole	P = 1/2" Sq. Pin Detent	C = 1/2" Sq. C-Ring w/ through Hole	P = 1/2" Sq. Pin Detent
Anvil size	½ in			

Panasonic Life Solutions Company of America Assembly Tools Division
2 Riverfront Plaza 5th Floor Newark, NJ 07102
https://na.panasonic.com/us/support/assembly-tools-downloads

Tool bolt torque range

The chart below is a general recommendation. Joint rate from soft - hard will affect the torque range.

AccuPulse 4.0 Recommended Bolt Size			
Model	**Bolt Size**	**Min Torque (Nm)**	**Max Torque (Nm)**
EYFMH1	M8	20	50
	M10	20	60
EYFMH2	M10	50	80
	M12	50	120
	M14	80	120

Tool to Bolt Chart

Quick Guide Overview

AccuPulse 4.0 Transducerized Mechanical Pulse Tools

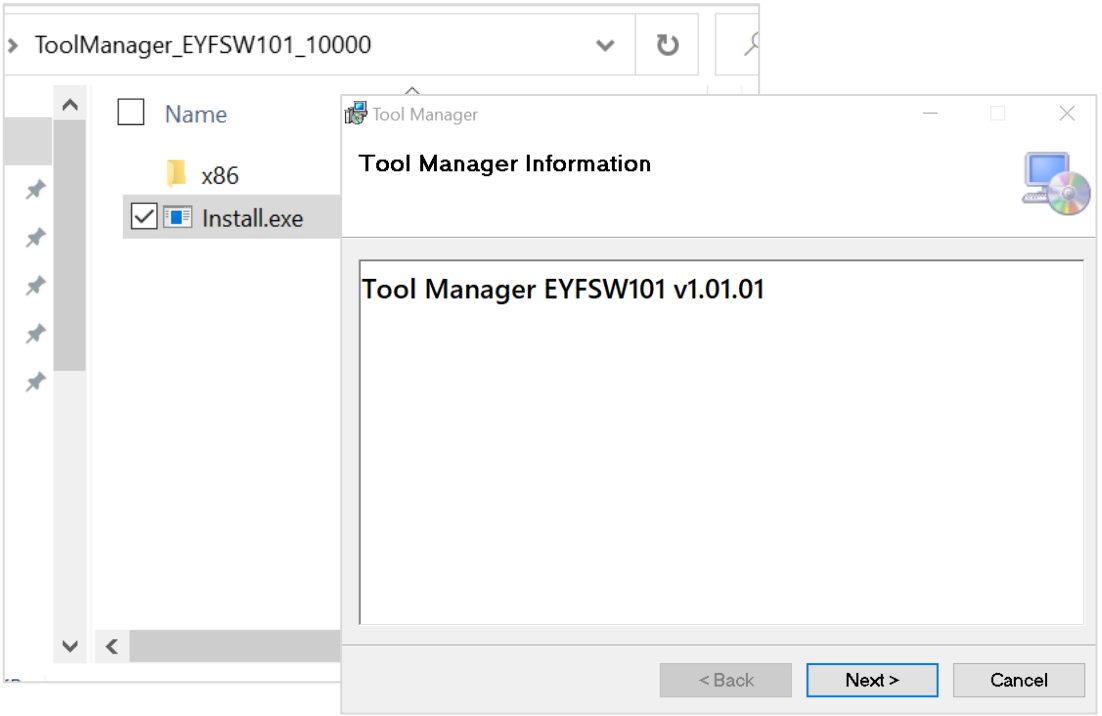
- Initial tool setup will require running down the same joint more than once In the Adjust Torque Offset to get the Initial joint signature to match the audit torque. That joint signature will be unique for that application.
- It's recommended to use new hardware for each rundown during Adjusting Torque Offset setup.
- After each rundown connect the tool to read the data and perform the offset calculation.
- On multi - fastener setup, especially with mean shift characteristics, select the bolt with medium to soft joint, not the hardest joint for initial setup. This gives the best average results across the batch.
- Items needed for setup:
  - Digital torque wrench or rotary transducer **for static audit only**
    - **Do Not** run rotary inline with tool
  - PC with software and cable

Table of Contents

Getting Started

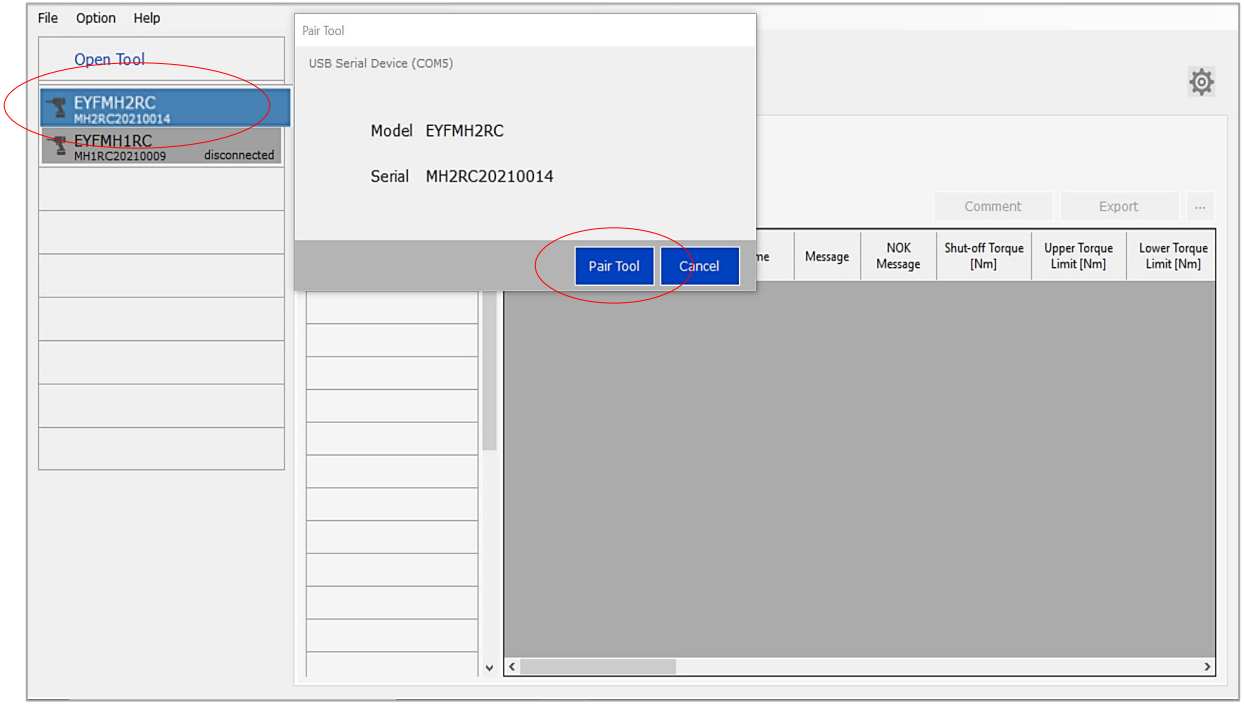
- Download and unzip the software from the Link below
- Open Tool Manager software folder
- Follow the path below to the Install.exe and select
- When the tool manager installation opens, select next and follow the onscreen instructions

Software link: https://na.panasonic.com/us/support/accupulse-40-resources



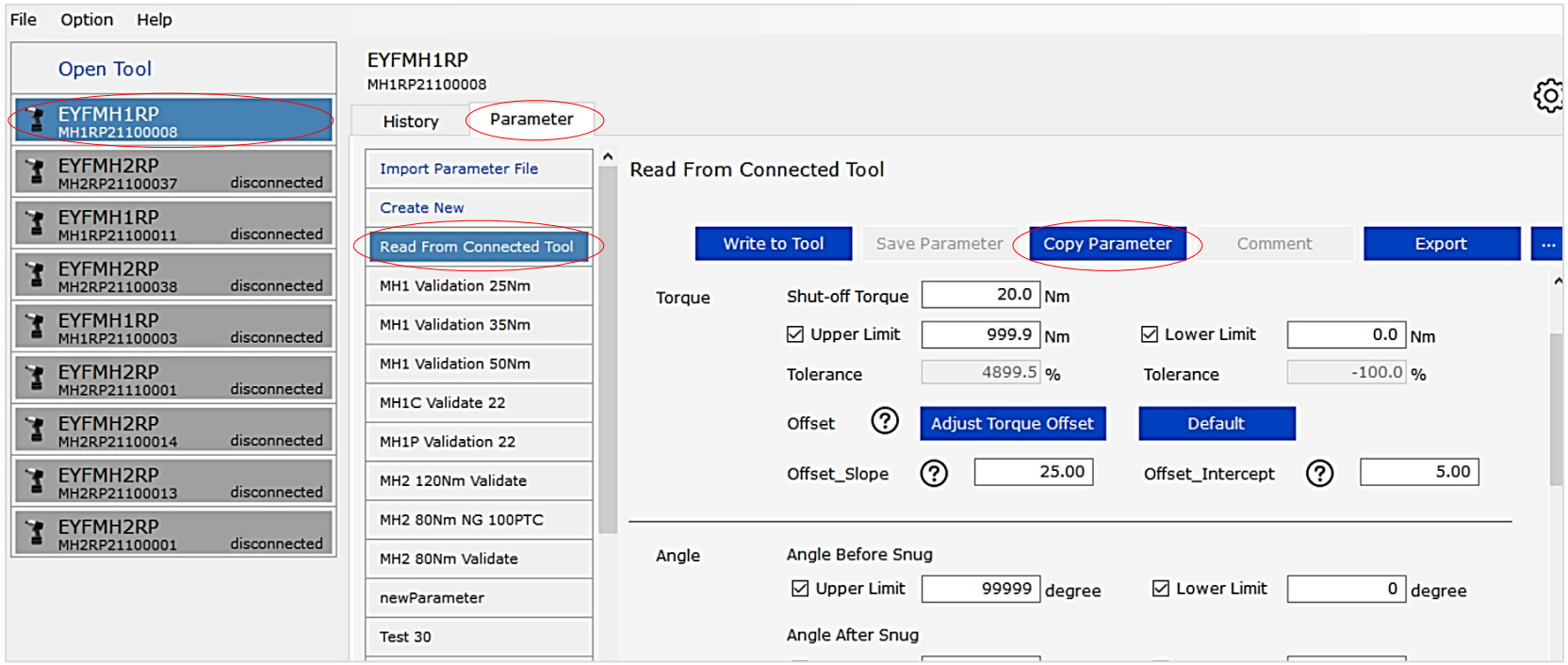
Connecting the Tool

- Open Tool Manager software, plug the tool into the USB if you haven't already
- Pull the trigger to wake the tool if the tool is not already awake
- A Pair Tool screen will popup. Press Pair Tool button
- The paired tool will highlight in blue in the left column. The tool list will include all tools previously connected tools, up to 9 tools



Initial setup

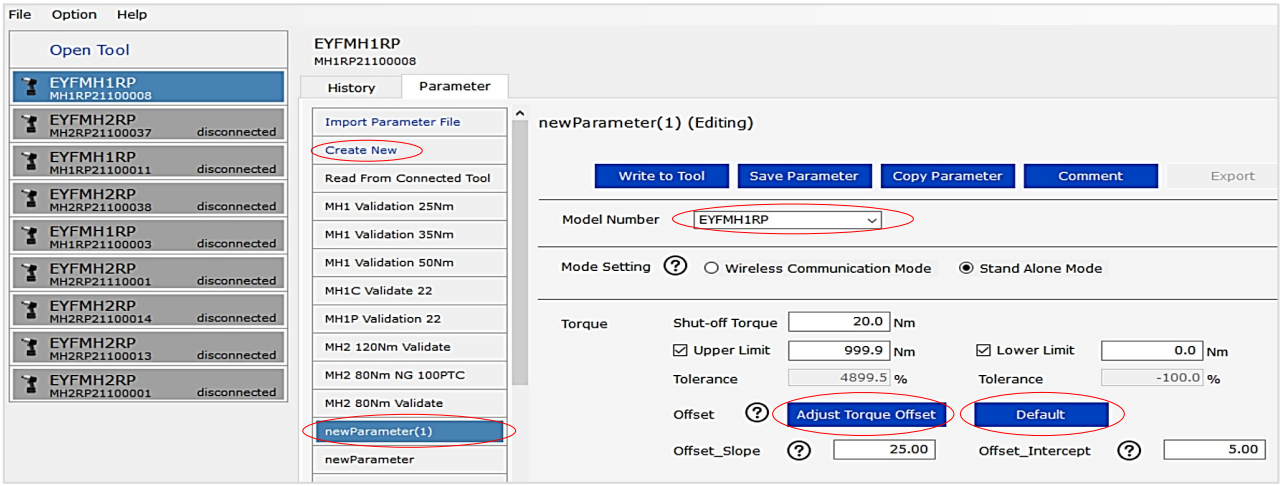
- The tool will contain the last parameter written to the tool if it's been used before or default values if it’s a new tool
- Under the Parameter tab to select Read From Connected Tool to see current tool parameters to edit or save.



- Copy Parameter to save the tools parameter if you don’t want to lose that parameter
- Create New to setup for a new application
- Parameters will be archived in the parameter list

New Parameter Setup

1. Select Create New **Always start a new assembly with Create New and default offset values**
2. A Popup window appears to name the Parameter, then select add
3. Select Adjust Torque Offset. A "Adjust Torque Offset" window will pop up and you will begin the process of matching the tool torque algorithm to the audit torque



Default Offset Values

Default Offset Values							
Tool	Slope	Intercept	Unit of Measure	Tool	Slope	Intercept	Unit of Measure
MH1	25Nm	5	Nm	MH2	55	25	Nm
	221.24	44.25	in.lbs		486.73	221.24	in.lbs
	18.44	3.69	ft.lbs		40.56	18.44	ft.lbs

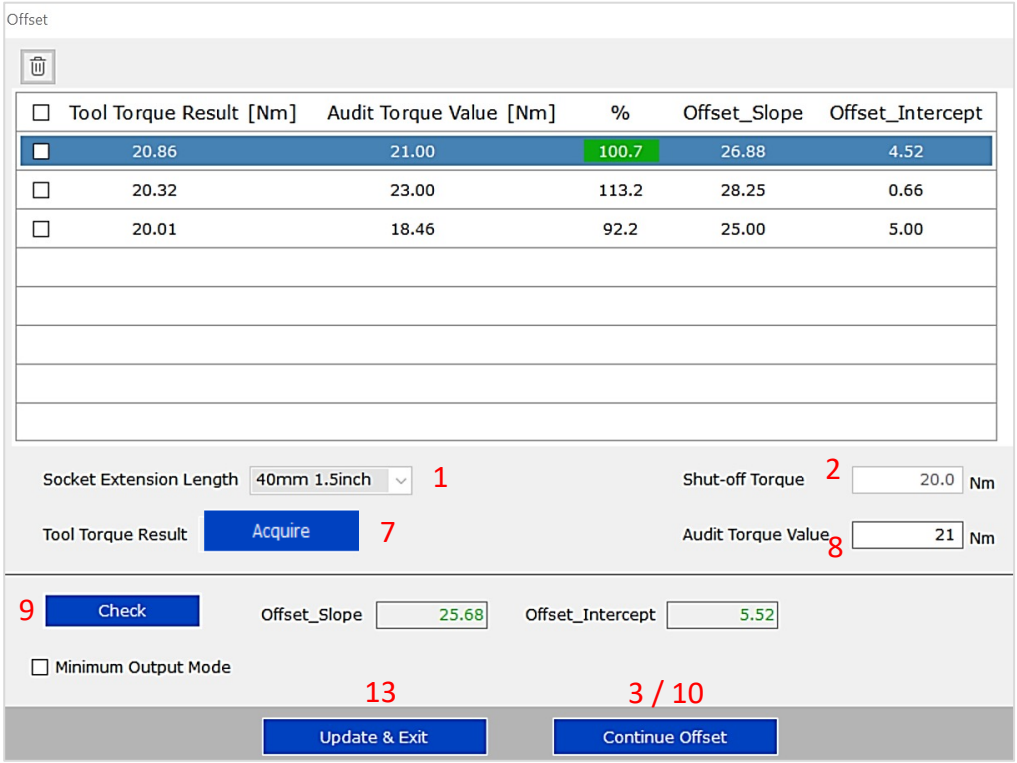
- If the assembly has multiple fasteners and mean shift issues, use the softer to middle joint to initially setup the tool.
- Use the minimum output mode to determine the fasteners minimum torque discussed on page 8

Adjust Torque Offset matching the tool torque algorithm to the audit torque

1. Choose the socket length including the extension
2. Type in the target torque for Shut-off torque
3. Continue Offset to store the value in the tool
4. Unplug the tool and rundown the fastener
5. Use a digital torque wrench to check the residual torque for the Audit torque Value required for step 8

6. Plug tool back in
7. Select Acquire to upload the tool rundown data.
8. Input the Audit Torque Value from the static audit
9. Select Check to calculate the new offsets
   - The offset slope and intercept will change, adjusting the tool torque signature to the audit torque

10. Continue Offset to write the new values to the tool.
11. Repeat from step 4 until the % column and offset value Turn green indicating torque values are within 5%
13. Update & Exit when 5% is met



Note: If the tool is not shutting Off

- Harder joints and higher torque may cause the tool to not shut off
- Go back to the parameter page
  - Increase Offset slope by 5 incrementally (55-60) for a MH2.
  - Increase Offset Slope by 3 incrementally (25-28) for MH1
- Go back to Adjust Torque Offset and try the procedure again

Minimum Output Mode

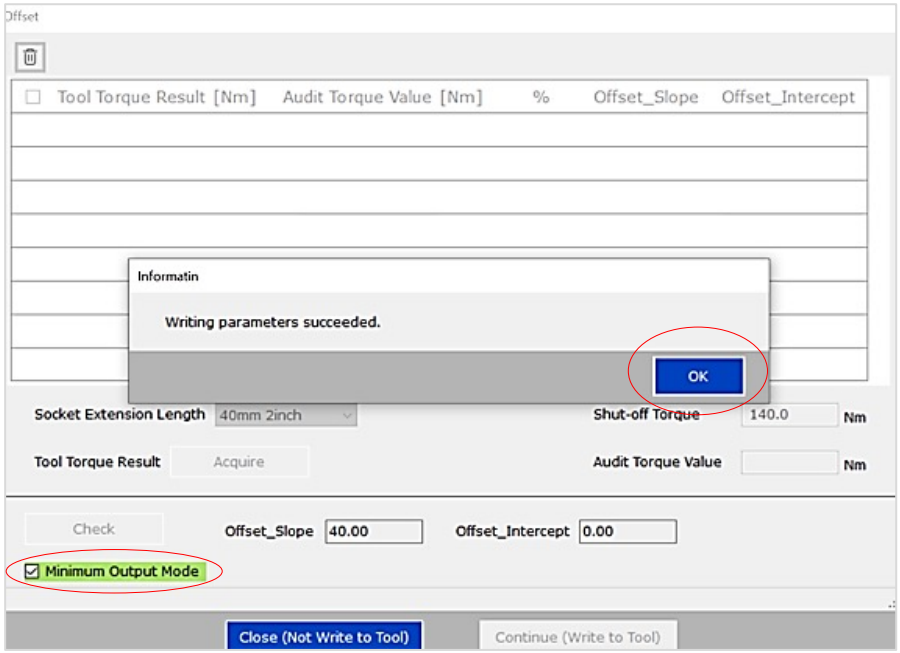
If you receive unexpected results during the Adjust Torque Offset or cannot achieve the lowest torque needed, use the "Minimum Output Mode" to qualify the bolt.

Test the bolts for minimum torque possible. Follow below

1. Change to 1500 rpm on the parameter page to get lower torque if required
2. Select the socket extension length
3. Select "Minimum Output Mode"
4. Select "OK"
5. Unplug the tool and run each bolt down that you want to test
6. Do a static audit of each bolt

That audit will be the minimum torque capable for that tool to bolt

*After the Minimum Offset Mode has been made or not required, uncheck the Minimum Offset Mode and continue to the next slide



Note: If you setup on bolts that cannot reach minimum torque required without testing, you will get unreliable torque results

Use the procedure described and stay within the torque to bolt range and the tool will be very reliable

Appendix

Saving Parameters

After adjusting torque offset you will close and return to this main screen. You can see below the new offset value As a part of the unique algorithm for that assembly

Write to Tool

Write to the tool will erase the previous parameter in the tool and replace it with the highlighted parameter selected from Parameter column

Save Parameter

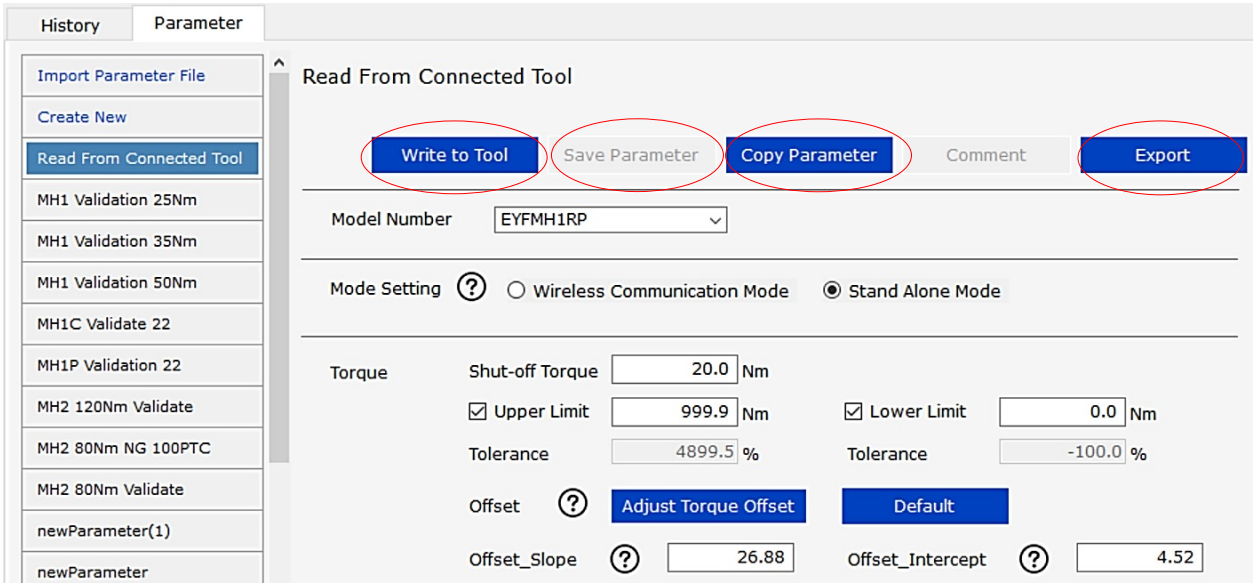
Save Parameter will overwrite and save changes that are made to the selected parameter

Copy Parameter

Copy Parameter copies the selected parameter. A popup window will prompt for a name and any comments you want to add to the copy. The new parameter will be listed under the Parameter tab

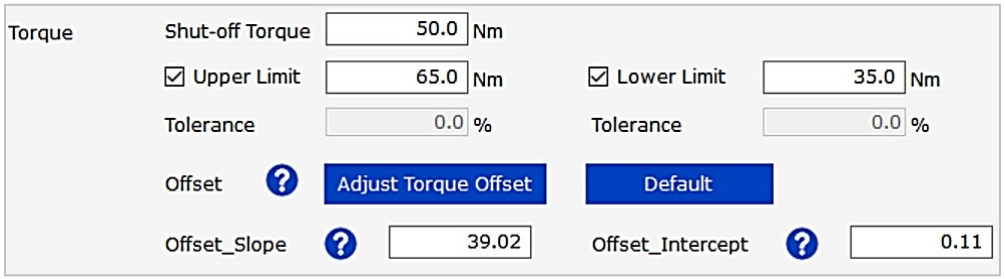
Export

Export highlighted parameter to a .csv file to archive saved parameters to a file. The saved files are used for uploading to a controller or imported for stand alone use



Settings and Limits Explanation

- Mode setting turns wireless communication on/off.
- Wireless Communication enable wireless communication for pairing to the controller
- Stand Alone is no wireless communication.



- Shut off torque is the target torque
- Upper and lower limits for minimum and maximum allowable torque for OK/NOK. If the final rundown torque is above or below the limits, the tool will display NOK
- Offset is automatic offset adjustment during Adjust Torque Offset procedure. Alignment of tool torque to Static torque
- Default will change the offset values to default

- No Load speed rpm speed before the tool begins to pulse or see a load. Selectable from 1500 to 2300, in 100 rpm increments
- Variable speed is rpm speed before load depending on depth the trigger is pulled

CMK Report

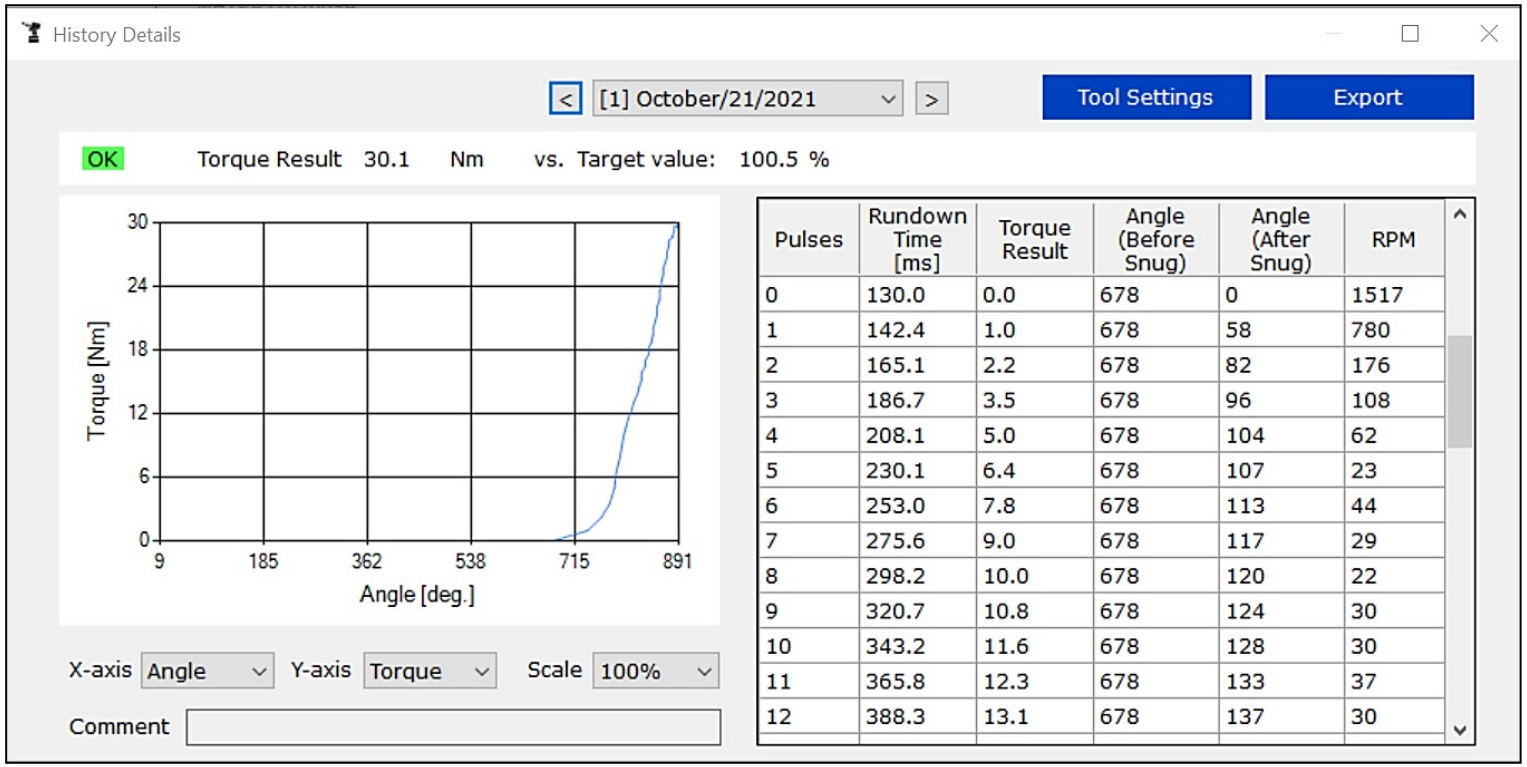
Machine Capability Study

n·gineric

Result:	OK
Accepable min. Cmk:	1.67
Date/Time:	2021-10-21 16:50
Sensor Serial Number:	M1B4EF0
Tool Type:	EYFST20NM
Tool / Part No.:	
Tool / Part Name:	
Batch:	
Comment:	
Target Value [Nm]:	20.0000
Tolerance (+/-):	10.00%
+Tolerance [Nm]:	2.0000
-Tolerance [Nm]:	2.0000
Upper Limit [Nm]:	22.0000
Lower Limit [Nm]:	18.0000
Count (n):	10
Process Mean (x) [Nm]:	19.8144
Max. [Nm]:	20.3030
Min. [Nm]:	19.3730
Spread (R) [Nm]:	0.9300
Standard Deviation (s):	0.321942
6 Sigma (6 s):	1.931655
Cm:	2.07
Cml:	1.88
Cmu:	2.26
Cmk:	1.88

No.	Date	Time	Max.	Unit	Dev. (Target) [%]	Dev. (Mean) [Nm]	Valid
1	2021-10-21	16:48:07	19.8010	Nm	-0.995%	-0.0134	TRUE
2	2021-10-21	16:48:16	20.1300	Nm	0.650%	0.3156	TRUE
3	2021-10-21	16:48:25	20.3030	Nm	1.515%	0.4886	TRUE
4	2021-10-21	16:48:35	20.2030	Nm	1.015%	0.3886	TRUE
5	2021-10-21	16:48:44	19.4770	Nm	-2.615%	-0.3374	TRUE
6	2021-10-21	16:48:54	19.8380	Nm	-0.810%	0.0236	TRUE
7	2021-10-21	16:49:03	19.8410	Nm	-0.795%	0.0266	TRUE
8	2021-10-21	16:49:12	19.7150	Nm	-1.425%	-0.0994	TRUE
9	2021-10-21	16:49:21	19.4630	Nm	-2.685%	-0.3514	TRUE
10	2021-10-21	16:49:30	19.3730	Nm	-3.135%	-0.4414	TRUE

Graph result display from AccuPulse 4.0 tool manager program



Pulses	Rundown Time [ms]	Torque Result	Angle (Before Snug)	Angle (After Snug)	RPM
0	130.0	0.0	678	0	1517
1	142.4	1.0	678	58	780
2	165.1	2.2	678	82	176
3	186.7	3.5	678	96	108
4	208.1	5.0	678	104	62
5	230.1	6.4	678	107	23
6	253.0	7.8	678	113	44
7	275.6	9.0	678	117	29
8	298.2	10.0	678	120	22
9	320.7	10.8	678	124	30
10	343.2	11.6	678	128	30
11	365.8	12.3	678	133	37
12	388.3	13.1	678	137	30