

# INTOMACHINES

Bolting Protocol

Turbine ID

Job

7

Test Job

Flange	Amount of Bolts	Size	Tightening order	Tightening type	Target cycle 1 [Nm]	Target angle 1 [deg]	Target cycle 2 [Nm]	Target angle 2 [deg]	Flange finished	Time stamp
7.1	15	M30x210	Count up	Linear tightening	1100	0	1600	0	yes	2021-08-26 14:42:57
7.2	15	M30x180	Count up	Linear tightening	1000	0	1500	0	yes	2021-08-26 14:56:03

# INTOMACHINES

Amount of Bolts	Size	Tightening order	Tightening type	Target cycle 1 [Nm]	Target angle 1 [deg]	Target cycle 2 [Nm]	Target angle 2 [deg]	Flange ID
15	M30x210	Count up	Linear tightening	1100	0	1600	0	<b>7.1</b>

Bolt ID	Size	Cycle 1 [Nm]	Angle [deg]	E-RAD message	Time stamp	Tool Id	Cycle 2 [Nm]	Angle [deg]	E-RAD message	Time stamp	Tool Id	ID	Bolt finished
7.1.1	M30x180	1096	1328	Passed	2021-08-26 14:38:09	E14876	1612	63	Passed	2021-08-26 14:40:19	E14876	mk	yes
7.1.2	M30x180	1106	59	Passed	2021-08-26 14:38:15	E14876	1612	63	Passed	2021-08-26 14:40:21	E14876	mk	yes
7.1.3	M30x180											mk	
7.1.3	M30x180	0	0	Loosened	2021-08-26 14:41:19	E14876	0	0	Loosened	2021-08-26 14:41:19	E14876	mk	
7.1.3	M30x180	1112	31	Passed	2021-08-26 14:41:37	E14876	1604	9	Passed	2021-08-26 14:41:43	E14876	mk	yes
7.1.4	M30x180	1105	26	Passed	2021-08-26 14:38:27	E14876	1594	35	Passed	2021-08-26 14:40:35	E14876	mk	yes
7.1.5	M30x180	1104	33	Passed	2021-08-26 14:38:32	E14876	1600	40	Passed	2021-08-26 14:40:39	E14876	mk	yes
7.1.6	M30x180	1109	43	Passed	2021-08-26 14:38:37	E14876	1596	32	Passed	2021-08-26 14:40:43	E14876	mk	yes
7.1.7	M30x180											mk	
7.1.7	M30x180	0	0	Loosened	2021-08-26 14:42:22	E14876	0	0	Loosened	2021-08-26 14:42:22	E14876	mk	
7.1.7	M30x180	1113	42	Passed	2021-08-26 14:42:31	E14876	1607	11	Passed	2021-08-26 14:42:35	E14876	mk	yes
7.1.8	M30x180	1106	54	Passed	2021-08-26 14:38:47	E14876	1616	28	Passed	2021-08-26 14:40:53	E14876	mk	yes
7.1.9	M30x180	1114	45	Passed	2021-08-26 14:38:54	E14876	1594	19	Passed	2021-08-26 14:40:57	E14876	mk	yes
7.1.10	M30x180	1097	45	Passed	2021-08-26 14:38:59	E14876	1593	20	Passed	2021-08-26 14:41:58	E14876	mk	yes
7.1.11	M30x180	1100	46	Passed	2021-08-26 14:39:11	E14876	1600	5	Passed	2021-08-26 14:42:03	E14876	mk	yes
7.1.12	M30x180	1098	254	Passed	2021-08-26 14:39:18	E14876	1599	29	Passed	2021-08-26 14:42:09	E14876	mk	yes

# INTOMACHINES

**Graphing**

**Flange ID**

**Protocol**

Cycle 1

7.1

Test Job

**Bolt ID**

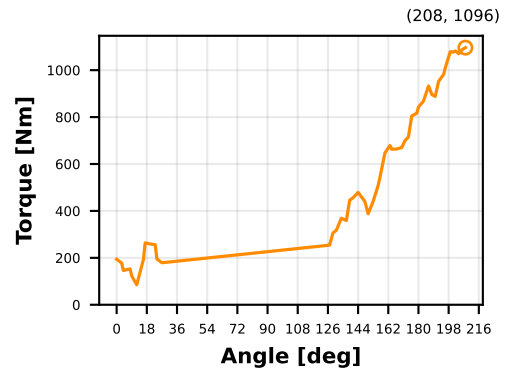
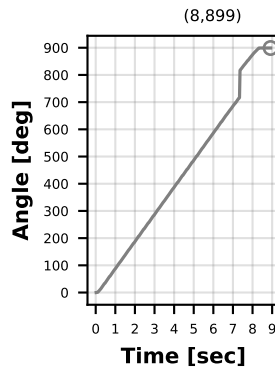
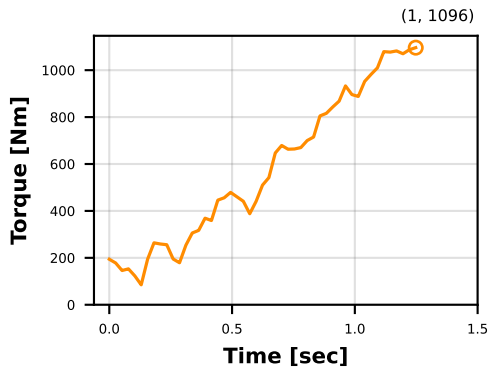
**Torque vs Time**

**Angle vs Time**

**Torque vs Angle**

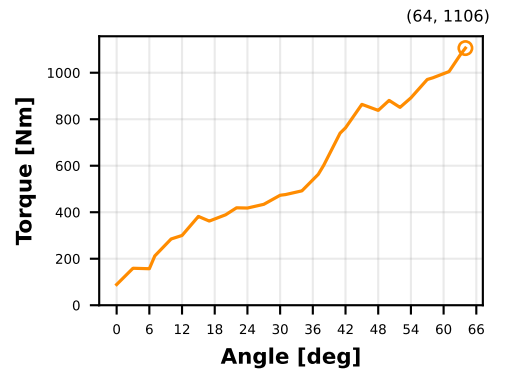
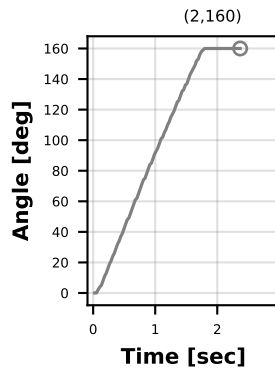
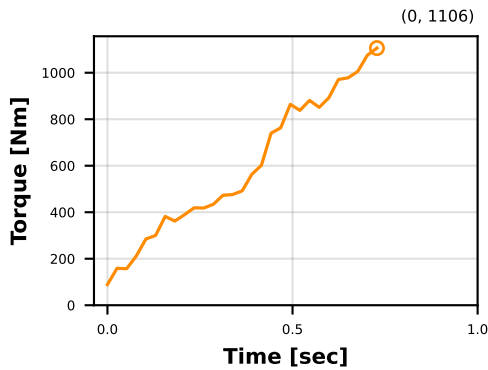
**7.1.1**

2021-08-26  
14:38:09



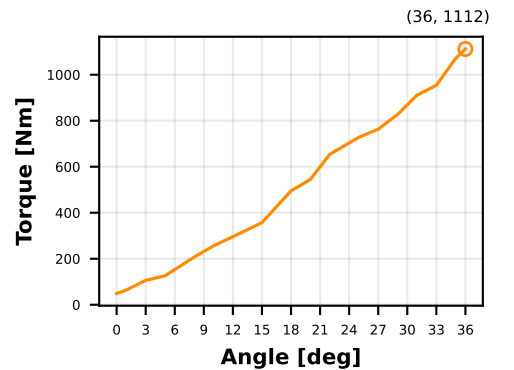
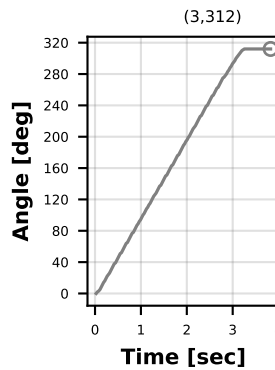
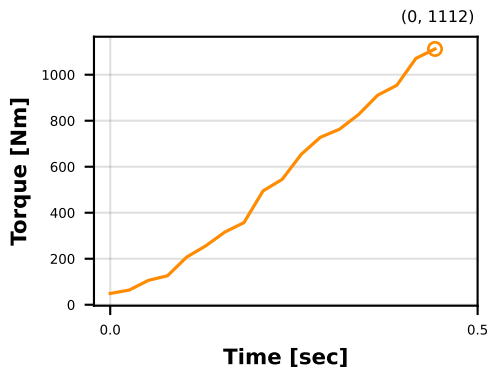
**7.1.2**

2021-08-26  
14:38:15



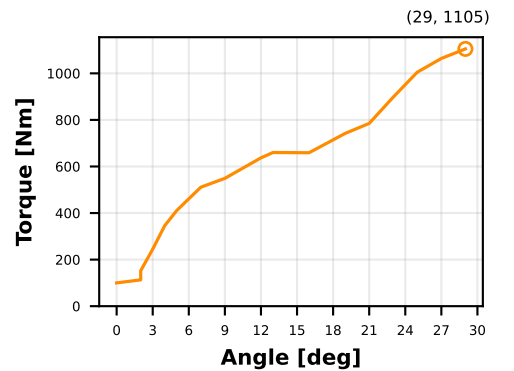
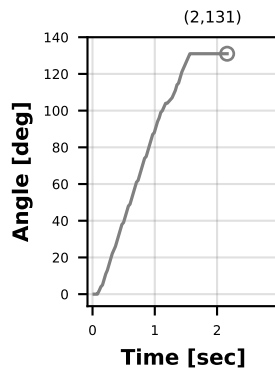
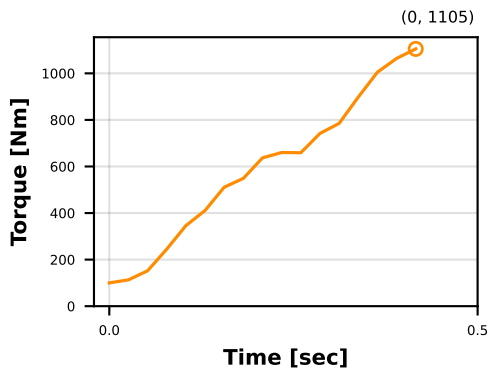
**7.1.3**

2021-08-26  
14:41:37



**7.1.4**

2021-08-26  
14:38:27



## Bolt ID

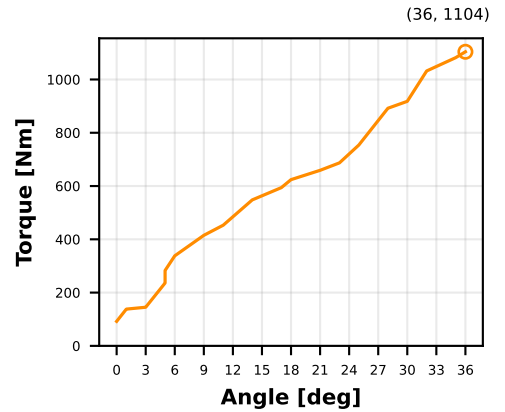
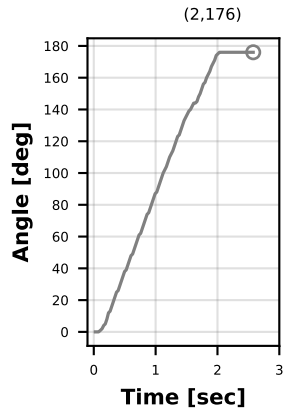
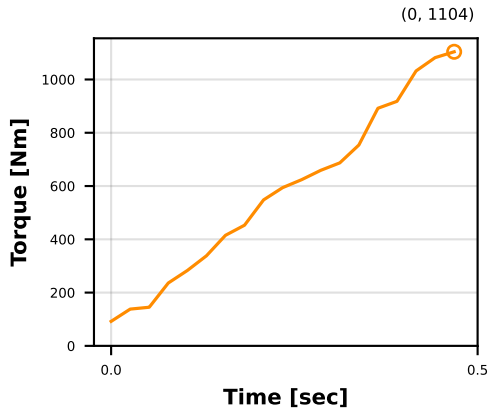
## Torque vs Time

## Angle vs Time

## Torque vs Angle

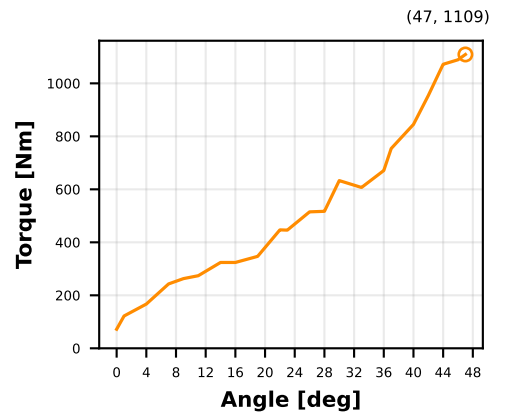
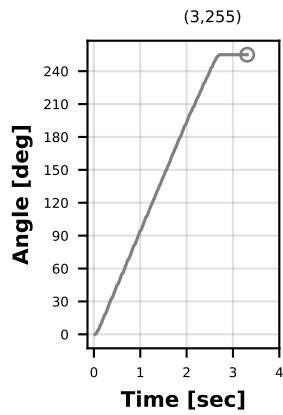
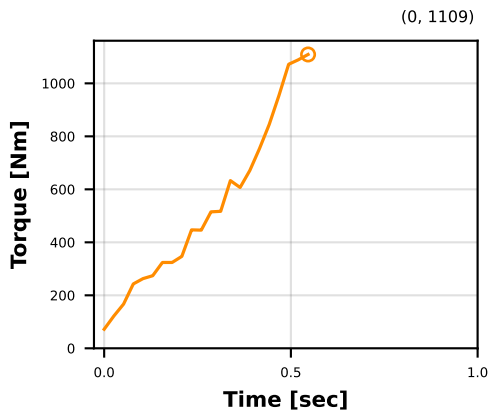
### 7.1.5

2021-08-26  
14:38:32



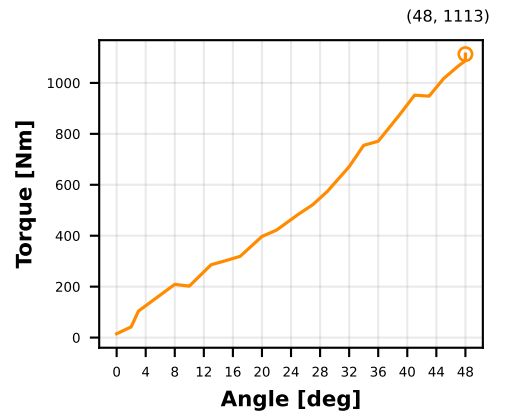
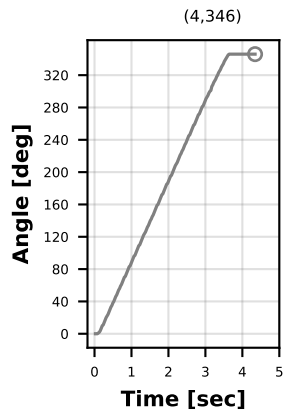
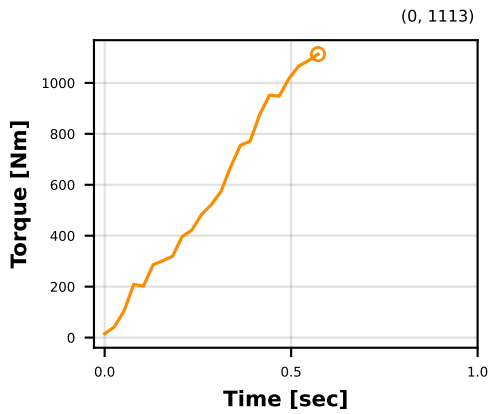
### 7.1.6

2021-08-26  
14:38:37



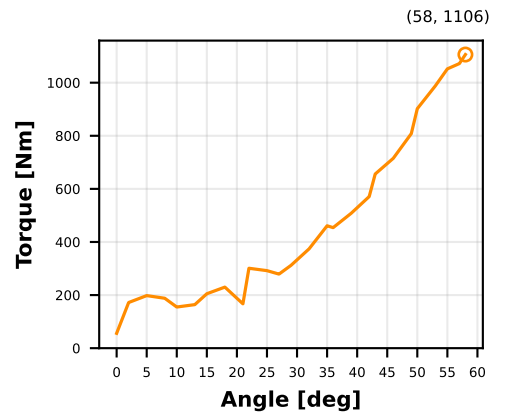
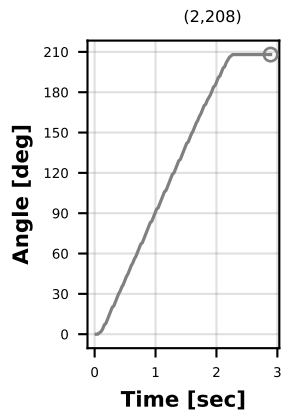
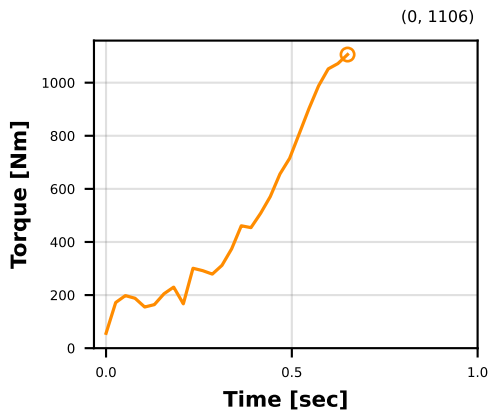
### 7.1.7

2021-08-26  
14:42:31



### 7.1.8

2021-08-26  
14:38:47



## Bolt ID

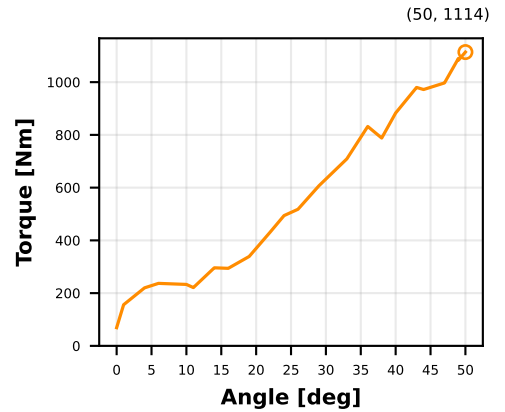
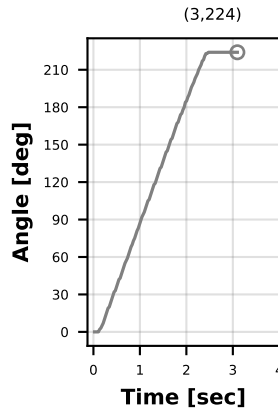
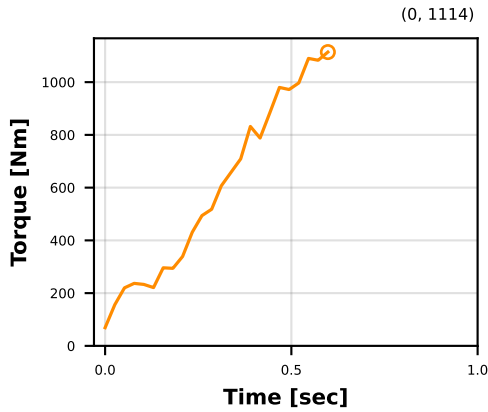
## Torque vs Time

## Angle vs Time

## Torque vs Angle

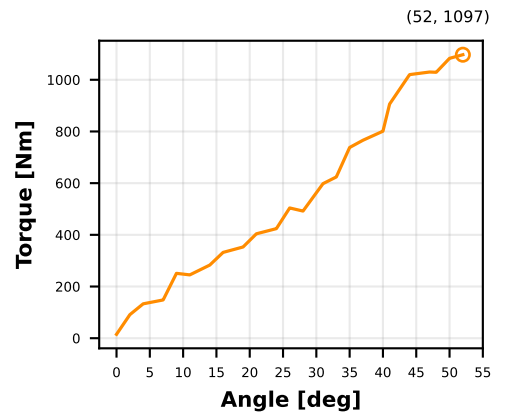
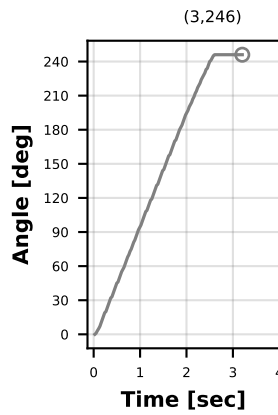
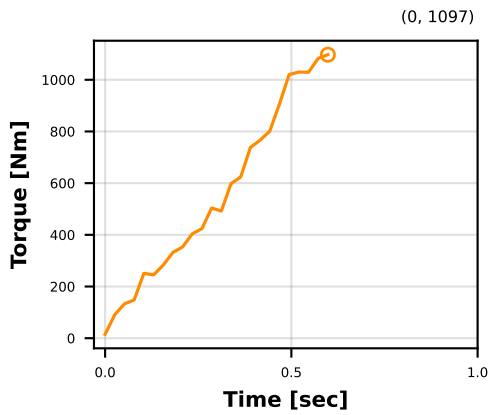
### 7.1.9

2021-08-26  
14:38:54



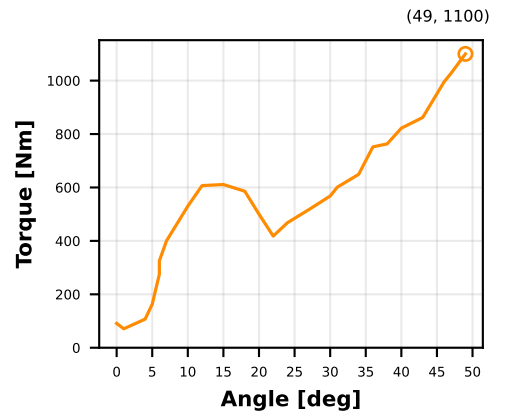
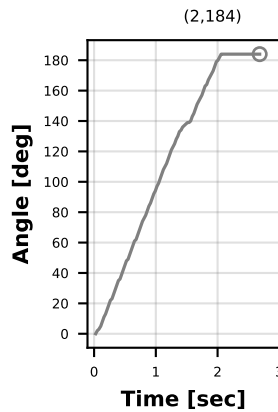
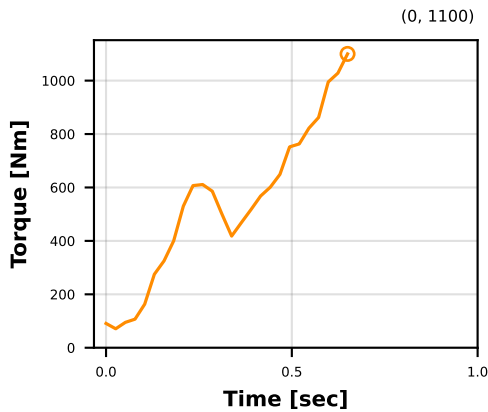
### 7.1.10

2021-08-26  
14:38:59



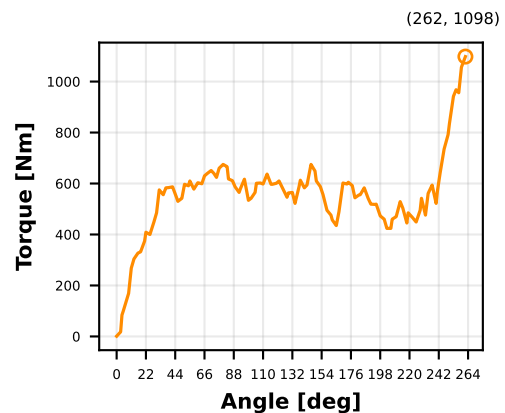
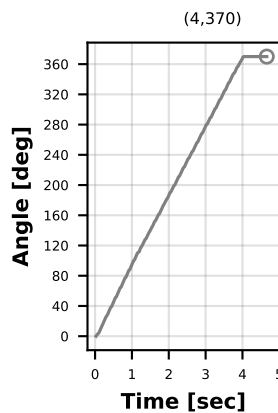
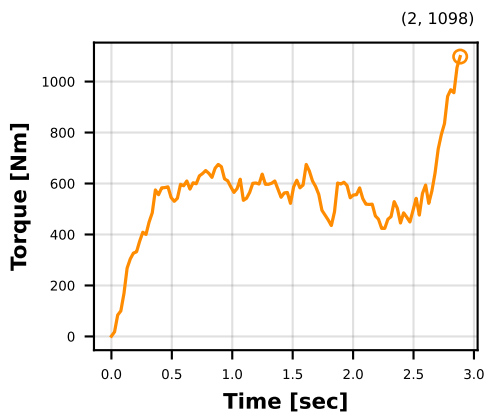
### 7.1.11

2021-08-26  
14:39:11



### 7.1.12

2021-08-26  
14:39:18



## Bolt ID

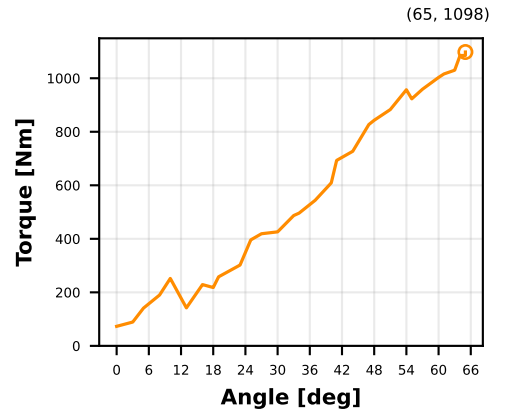
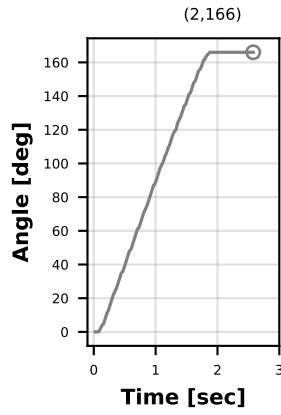
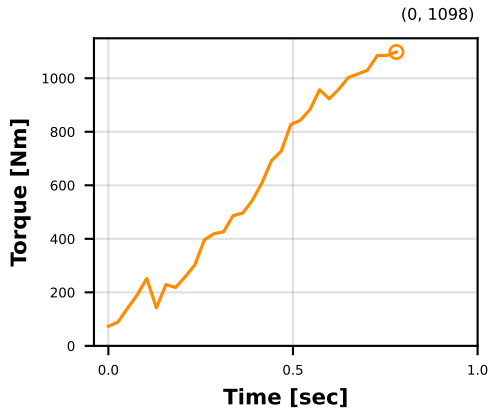
## Torque vs Time

## Angle vs Time

## Torque vs Angle

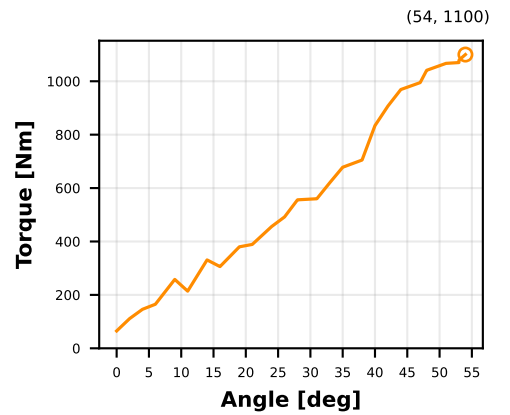
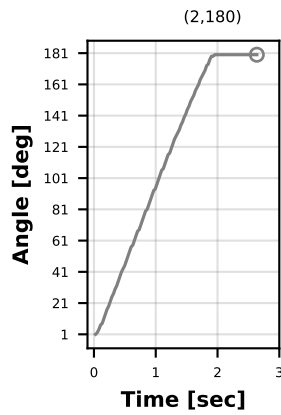
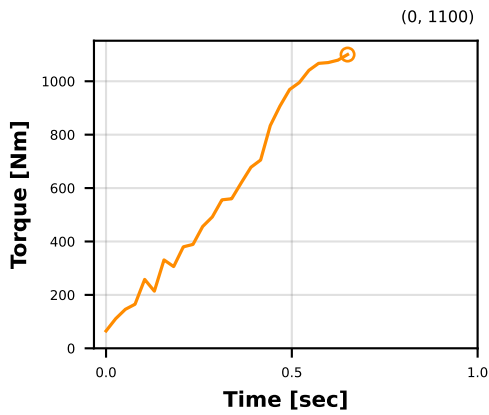
### 7.1.13

2021-08-26  
14:39:24



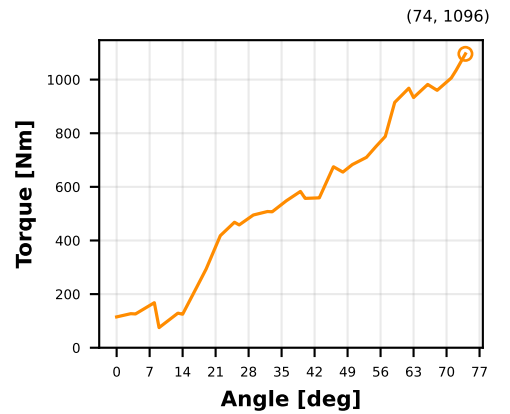
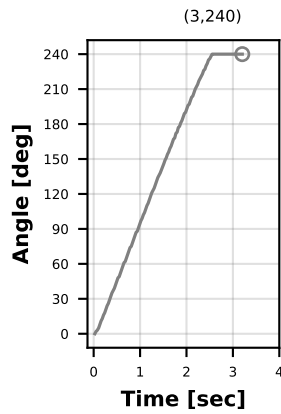
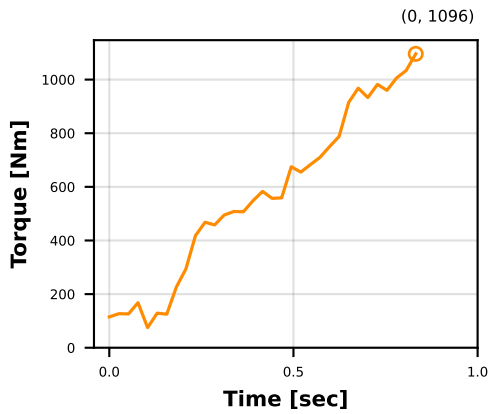
### 7.1.14

2021-08-26  
14:39:29



### 7.1.15

2021-08-26  
14:39:36



# INTOMACHINES

**Graphing**

Cycle 2

**Flange ID**

7.1

**Protocol**

Test Job

**Bolt ID**

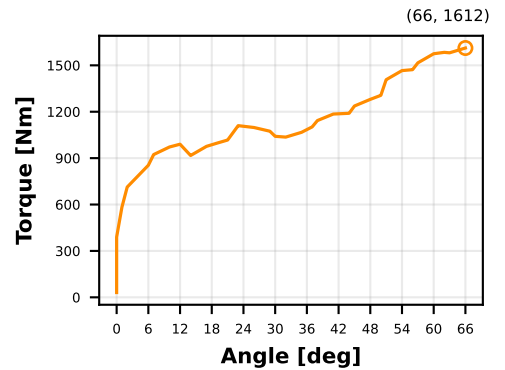
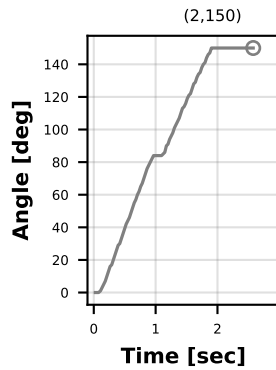
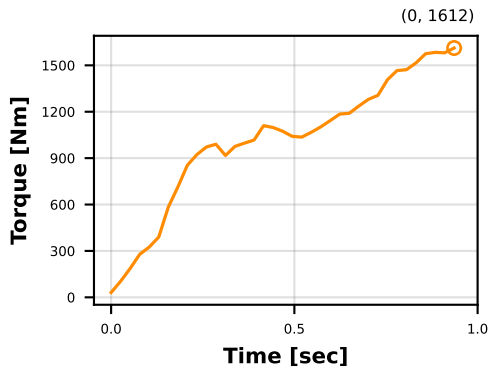
**Torque vs Time**

**Angle vs Time**

**Torque vs Angle**

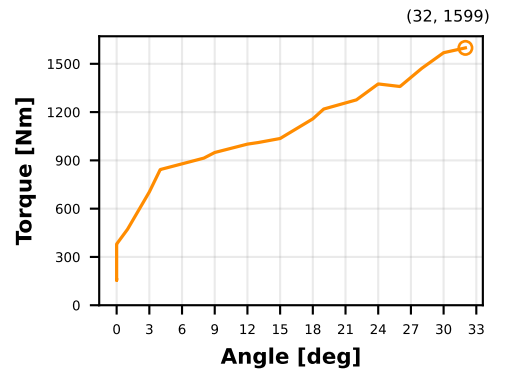
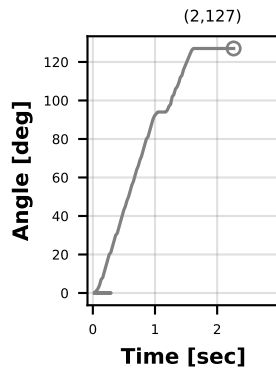
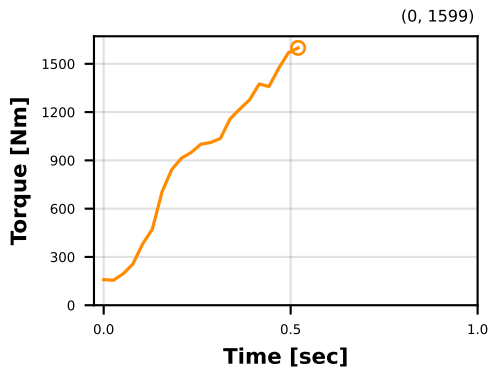
**7.1.1**

2021-08-26  
14:40:19



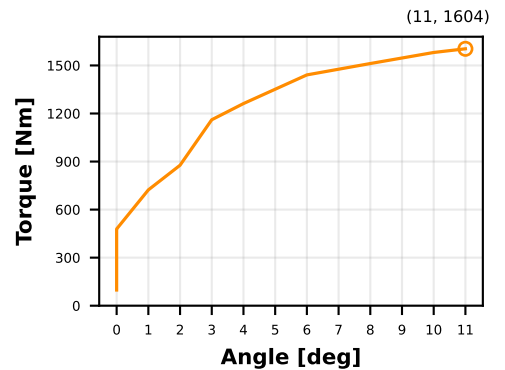
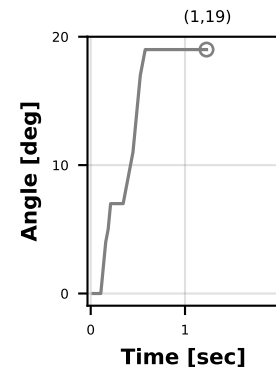
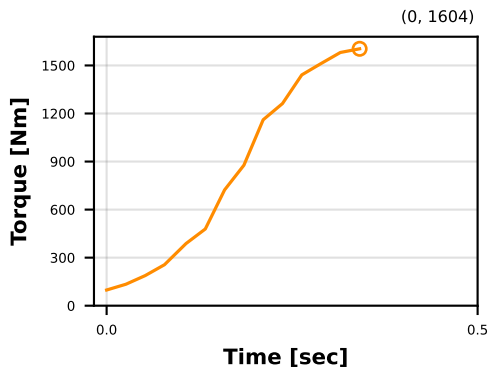
**7.1.2**

2021-08-26  
14:40:21



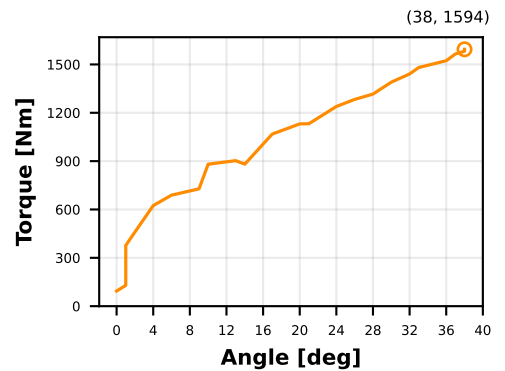
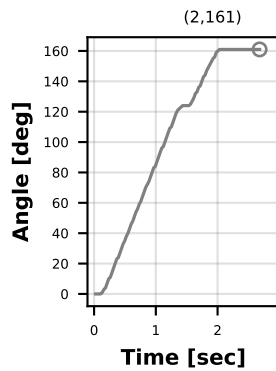
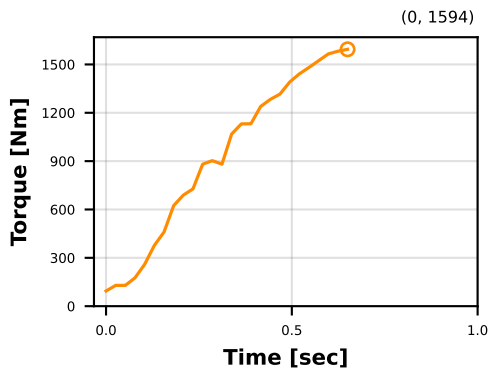
**7.1.3**

2021-08-26  
14:41:43



**7.1.4**

2021-08-26  
14:40:35



## Bolt ID

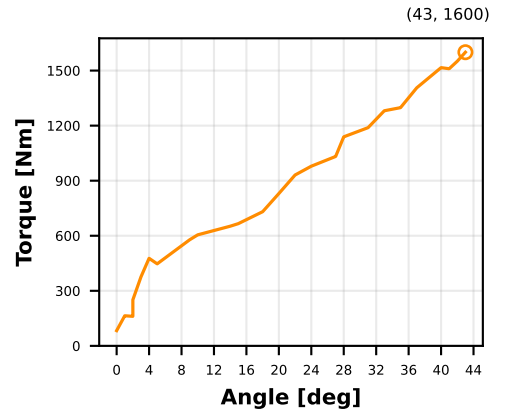
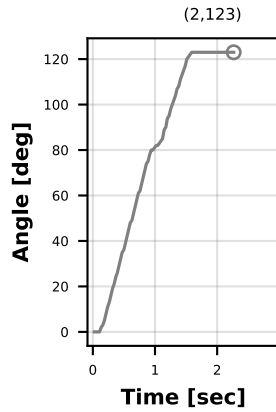
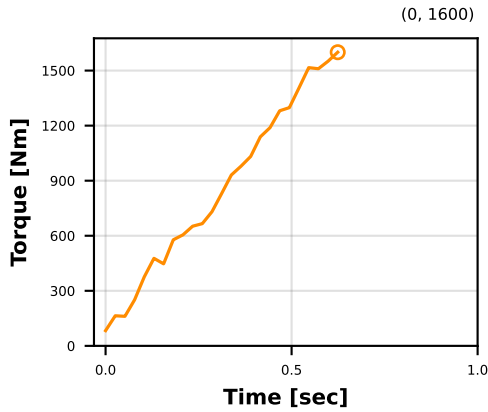
## Torque vs Time

## Angle vs Time

## Torque vs Angle

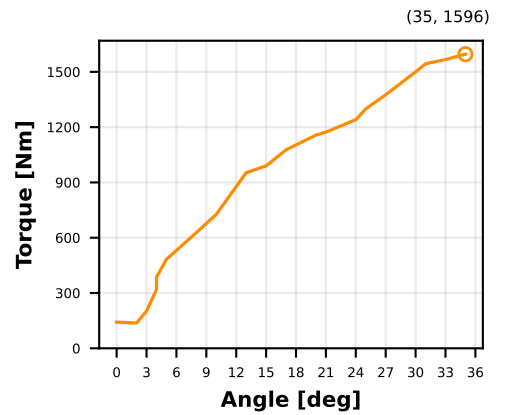
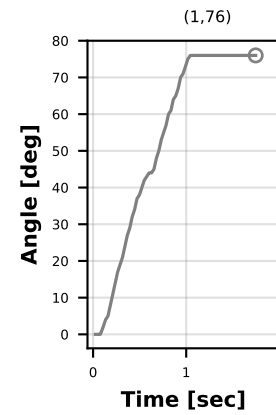
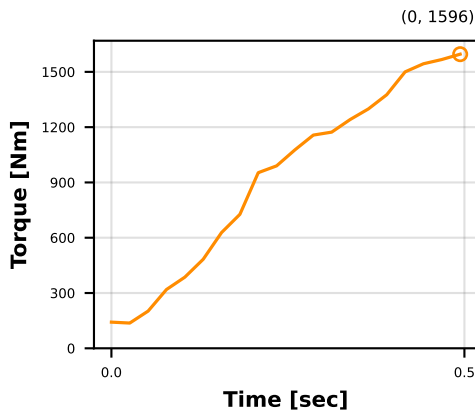
### 7.1.5

2021-08-26  
14:40:39



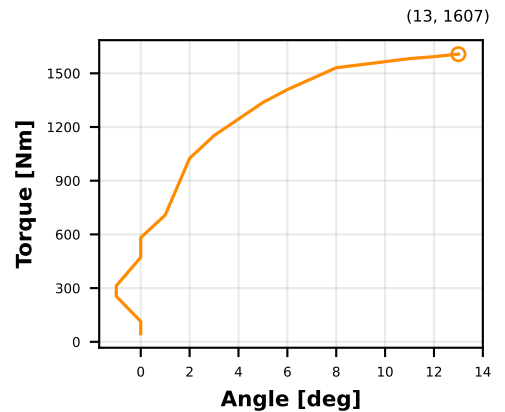
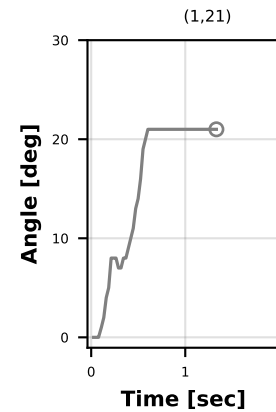
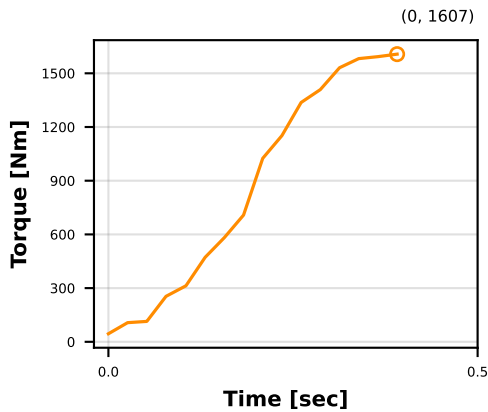
### 7.1.6

2021-08-26  
14:40:43



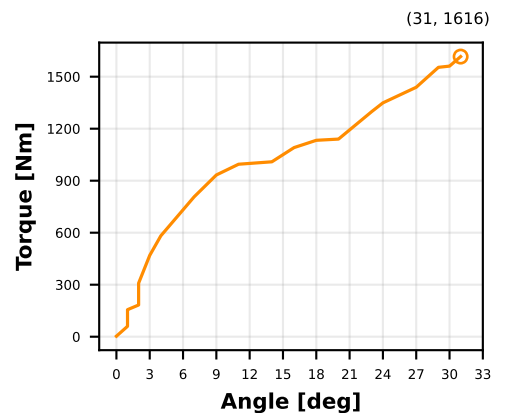
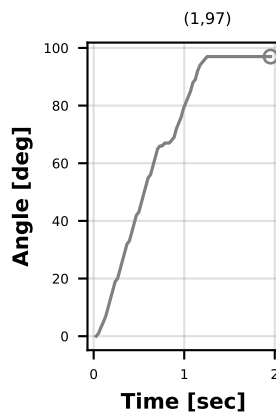
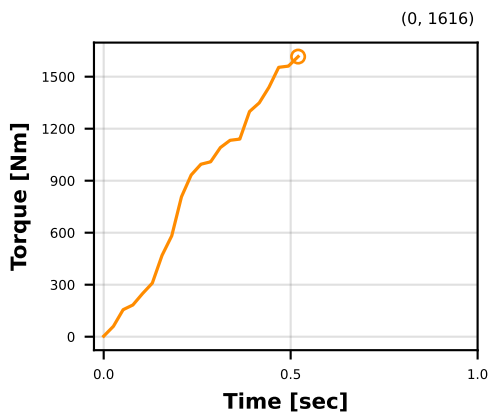
### 7.1.7

2021-08-26  
14:42:35



### 7.1.8

2021-08-26  
14:40:53





## Bolt ID

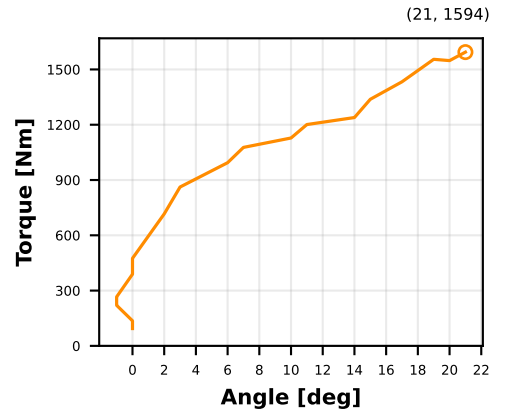
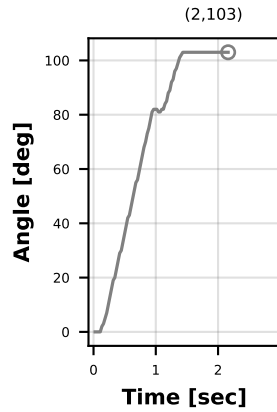
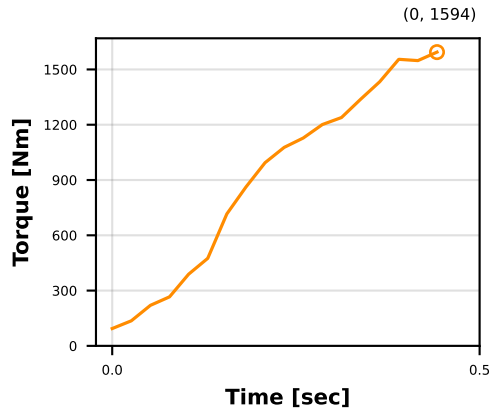
## Torque vs Time

## Angle vs Time

## Torque vs Angle

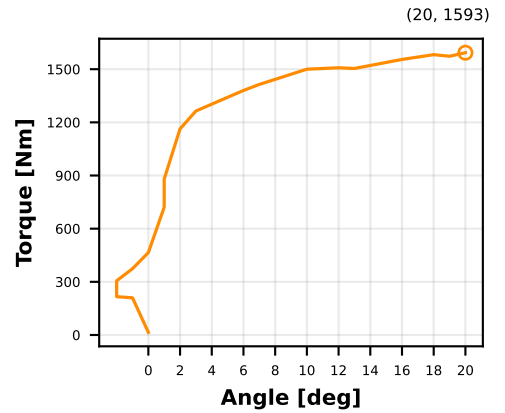
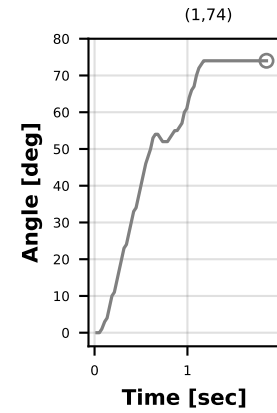
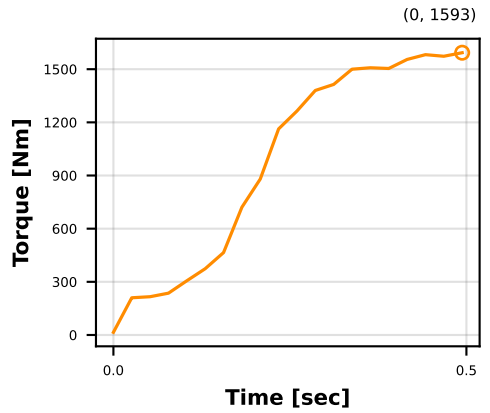
### 7.1.9

2021-08-26  
14:40:57



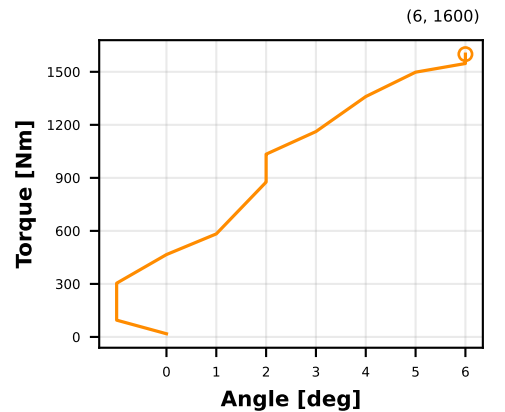
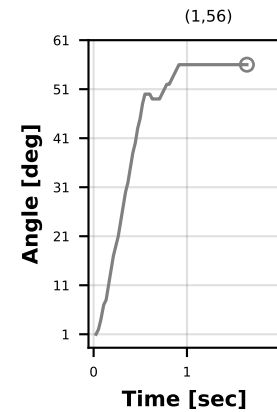
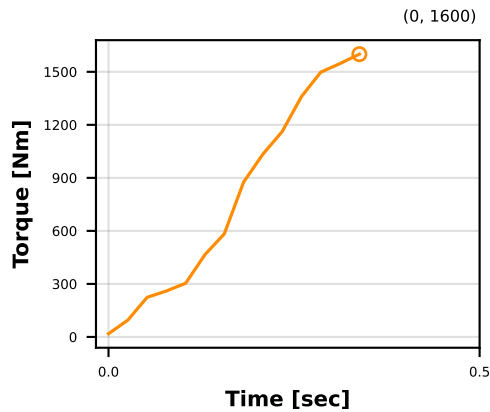
### 7.1.10

2021-08-26  
14:41:58



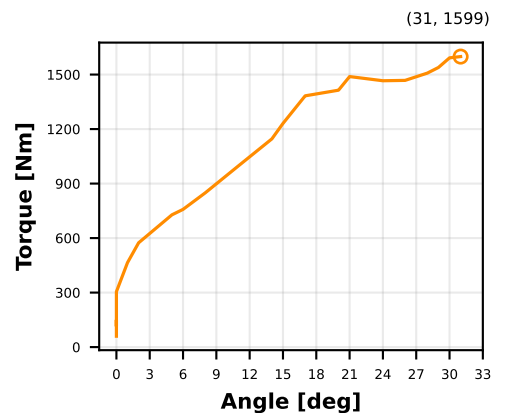
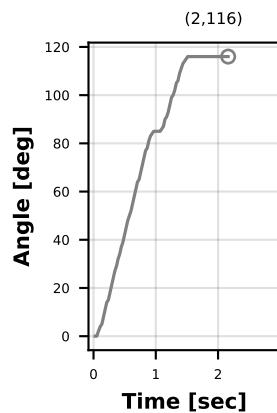
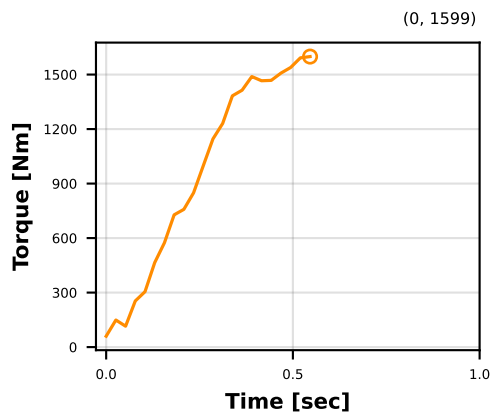
### 7.1.11

2021-08-26  
14:42:03



### 7.1.12

2021-08-26  
14:42:09



## Bolt ID

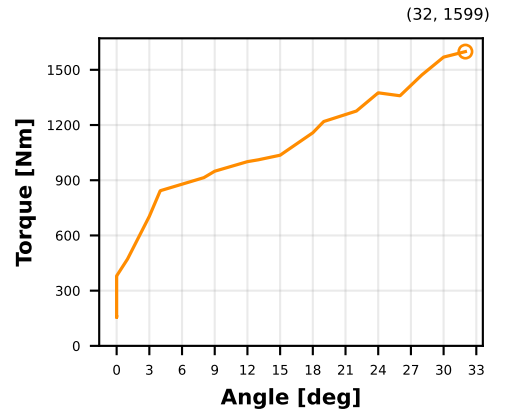
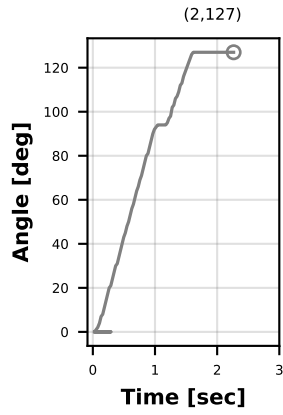
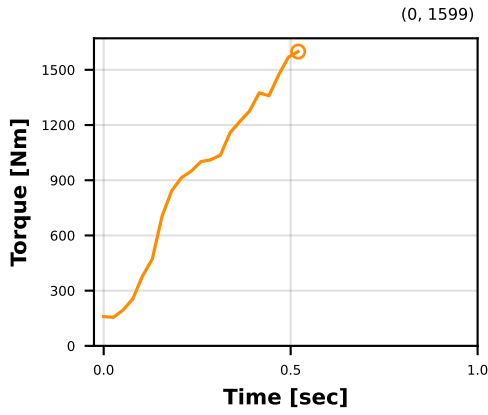
## Torque vs Time

## Angle vs Time

## Torque vs Angle

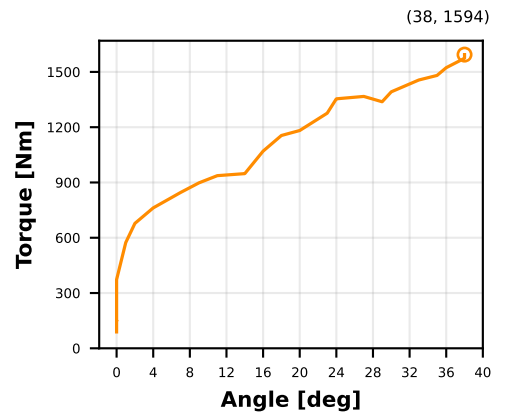
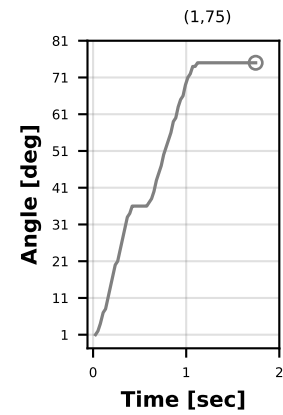
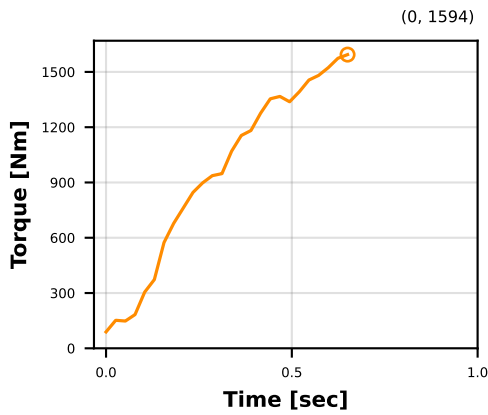
### 7.1.13

2021-08-26  
14:42:47



### 7.1.14

2021-08-26  
14:42:52



### 7.1.15

2021-08-26  
14:42:57

