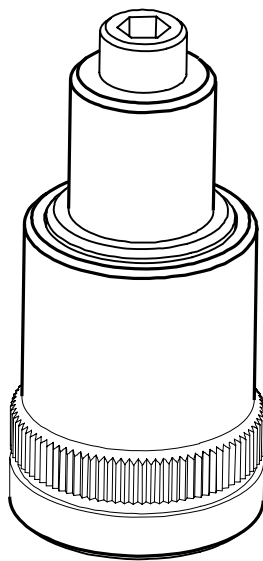




# Joint Simulators

## For use with FMT & TST

**OPERATOR'S HANDBOOK (PART No 34338) Issue 1**  
(ENGLISH)



**THIS HANDBOOK COVERS PART NUMBERS:**

**50539 JOINT SIMULATOR 2 N.m**  
**50540 JOINT SIMULATOR 10 N.m**  
**50541 JOINT SIMULATOR 25 N.m**  
**50692 JOINT SIMULATOR 150 N.m**

## INTRODUCTION

The joint simulators act as a repeatable bolted joint to enable the consistency of non-impact power torque tools to be measured. This handbook covers Norbar Joint Simulators that are designed to be used in conjunction with Norbar Flange Mount Transducers (FMT) and Norbar Torque Screwdriver Testers (TST).

The joint simulators use springs to control the joint rate. The springs are designed to cope with repetitive testing at rated capacity, so the performance remains consistent over the product life.

Joint Simulator	Part 50539	Part 50540	Part 50541	Part 50692
Capacity	2 N.m / 20 lbf.in	10 N.m / 100 lbf.in	25 N.m / 250 lbf.in	150 N.m / 100 lbf.ft
Compatible TST	<b>TST</b> (Part 43212)	<b>TST 10</b> (Part 43213)	<b>TST 25</b> (Part 43214)	-
Compatible FMT (N.m)	<b>2 N.m</b> (Part 50671.IND or 50671.LOG)	<b>10 N.m</b> (Part 50672.IND or 50672.LOG)	<b>25 N.m</b> (Part 50673.IND or 50673.LOG)	<b>150N.m</b> (Part 50674.IND or 50674.LOG)
Compatible FMT (lbf.in / lbf.ft)	<b>20 lbf.in</b> (Part 50677.IND or 50677.LOG)	<b>100 lbf.in</b> (Part 50678.IND or 50678.LOG)	<b>250 lbf.in</b> (Part 50679.IND or 50679.LOG)	<b>100 lbf.ft</b> (Part 50680.IND or 50680.LOG)
Adaptor included	1/4 HEX - 1/4 HEX Male/Male (Part 28902)			-

## FEATURES AND FUNCTIONS

- ▶ A consistent joint for power tool testing.
- ▶ Directly compatible with Norbar FMT & TST products.
- ▶ For clockwise testing of power tools.

## SET UP

*If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.*

### 1. FMT / TST:- \_\_\_\_\_

Secure FMT / TST transducer to a flat surface as indicated in the product handbook.  
Set instrument measurement mode as required (see instrument handbook).

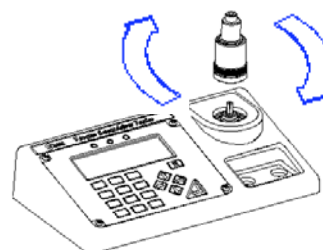
### 2. JOINT SIMULATOR:- \_\_\_\_\_

Position joint simulator onto FMT / TST transducer.

Ensure the hex / bi-square drive is fully located on transducer.

Attach joint simulator to transducer:

- On 2N.m / 10N.m / 25N.m – Screw joint simulator (shown right).
- On 150N.m – Push joint simulator over rubber 'O' ring.



### 3. TOOL:- \_\_\_\_\_

Connect up power tool as detailed in power tool handbook. **DO NOT USE IMPACT TOOLS.**

Ensure torque setting on power tool is not above maximum rating for transducer.  
Ensure torque setting on power tool is not above maximum rating for joint simulator.  
Fit required adapter(s) to fix power tool to joint simulator.

## OPERATING INSTRUCTIONS

Note: *Exceeding maximum torque for washer make-up will result in permanent damage to washers.*

*Keep bolt and washers greased with graphite loaded grease. See Maintenance section.*

### 1. TIGHTENING:- \_\_\_\_\_

Run tool in to joint simulator in CLOCKWISE direction.

Read torque value from measurement instrument.

### 2. RELEASING:- \_\_\_\_\_

To release joint simulator rotate the socket cap screw in an ANTI-CLOCKWISE direction.

Reset measurement instrument as required.

## SPECIFICATIONS

Part Number	50539	50540	50541	50692
Capacity	2 N.m (20 lbf.in)	10 N.m (100 lbf.in)	25 N.m (250 lbf.in)	150 N.m (100 lbf.ft)
Dimensions (without adaptor)	74mm (H) x 34mm(Ø)			128mm (H) x 47 (Ø)
Weight (with adaptor)	0.25 Kg	0.27 Kg	0.29 Kg	1.09 Kg
Socket cap screw A/F	1/4" hex			14 mm
Interface to transducer	1/4" hex			22 BI-Square

Operating temperature range            0°C to +50°C.

Storage temperature range            -20°C to +70°C.

Maximum operating humidity            85% Relative Humidity @30°C.

Environment                                Indoor use within a light industrial environment.

*Due to continuous improvement all specifications are subject to change without prior notice.*

## MAINTENANCE

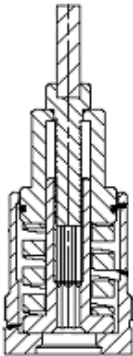
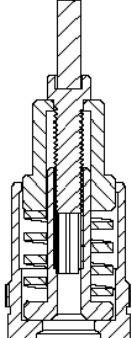
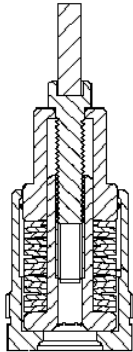
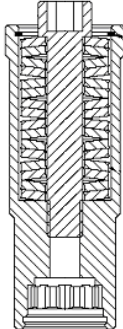
NOTE: *Always complete maintenance tasks on a clean work area.  
Always wear suitable gloves for your protection.*

### SERVICE / REPAIR:- \_\_\_\_\_

To service or repair the joint simulator complete the following steps:

1. Remove joint simulator from transducer:  
 On 2N.m / 10N.m / 25N.m – Unscrew joint simulator.  
 On 150N.m – Pull joint simulator.
2. Unscrew socket cap screw in an anticlockwise direction.

The socket cap screw is the item most prone to wear. It is recommended to grease the socket cap screw regularly with Rocol M204 G Graphite grease or Rocol Tufgear 85. Replace socket cap screw when worn.

	Part Number			
Joint simulator	50539	50540	50541	50692
Cutaway of joint simulator				
Socket cap screw	25236.20 (5/16" UNC x 1 1/4" long)			25357.80 (M14 x 80mm long)
Spring(s)	28087 (1 off)	28088 (1 off)	28089 (15 off)	28095 (16 off)

3. To access the spring(s):  
 On 2N.m / 10N.m / 25N.m – Pull off the top sleeve, this is held using a rubber seal.  
 On 150N.m – Remove internal retaining ring with suitable tool (e.g. Flat blade screwdriver).  
 It is important to note the orientation of the spring(s) ready for reassembly.
4. Clean spring(s) or replace with new spring(s). On 25N.m & 150N.m joint simulators grease springs with Rocol M204 G Graphite grease or Rocol Tufgear 85.
5. Replace top sleeve or internal retaining ring.
6. Grease and replace socket cap screw.

### CLEANING:- \_\_\_\_\_

Do not use abrasives or solvent based cleaners.

### DISPOSAL (RECYCLING CONSIDERATIONS):- \_\_\_\_\_

Component	Material
Joint Simulator Housing	Steel
Socket Cap Screw	Steel

For up to date disposal information, see our web site [www.norbar.com](http://www.norbar.com).