



## STATIC TRANSDUCERS

The accuracy and quality of the Norbar Static Torque Transducers has made them the first choice of many calibration laboratories throughout the world. Up to 5,000 N·m (5,000 lbf·ft) classified to BS7882:2017, typically better than Class 1 for the primary classification range ( $\pm 0.5\%$  of reading from 20% to 100% of full scale).

- Robust, heat treated, alloy steel torsion shaft design
- Designed to ignore non-torsional forces
- Operates in clockwise and counter-clockwise directions
- Calibration up to 100,000 N·m with a UKAS accredited Certificate
- Calibrated in clockwise direction as standard. Counter-clockwise provided on request

- Smart transducers have a built in memory circuit which contains essential information about the transducer. This information can be read by Norbar's TST, TTT, TTL-HE & T-Box™ 2 instruments meaning that when the transducer is connected, it is immediately recognised and ready for use
- Smart transducers can also be used with many other instruments, however these will operate as normal ratio calibrated (mV/V) transducers - the Smart data will not be read

## Static Transducers ¼" through to 1"

4	STATIC TRANSDUCERS - 0.1 - 1,500 N·m	
50587.xxx*	0.1 - 1 N·m	¼" M/F
50588.xxx	0.25 - 2.5 N·m	¼" M/F
50589.xxx	0.5 - 5 N·m	¼" M/F
50590.xxx	1 - 10 N·m	¼" M/F
50591.xxx	2.5 - 25 N·m	⅜" M/F
50592.xxx	5 - 50 N·m	⅜" M/F
50593.xxx	10 - 100 N·m	½" M/F
50594.xxx	25 - 250 N·m	½" M/F
50701.xxx	25 - 250 N·m	¾" M/F
50849.xxx	35 - 350 N·m	½" M/F
50596.xxx	50 - 500 N·m	¾" M/F
50772.xxx	100 - 1,000 N·m	1" M/F
50766.xxx	150 - 1,500 N·m	1" M/F

4	STATIC TRANSDUCERS - 0.1 - 1,000 lbf·ft	
50611.xxx	0.1 - 1 lbf·ft	¼" M/F
50615.xxx	0.5 - 5 lbf·ft	¼" M/F
50618.xxx	1 - 10 lbf·ft	¼" M/F
50620.xxx	2.5 - 25 lbf·ft	⅜" M/F
50836.xxx	5 - 50 lbf·ft	½" M/F
50624.xxx	10 - 100 lbf·ft	½" M/F
50625.xxx	25 - 250 lbf·ft	½" M/F
50702.xxx	25 - 250 lbf·ft	¾" M/F
50627.xxx	50 - 500 lbf·ft	¾" M/F
50773.xxx	100 - 1,000 lbf·ft	1" M/F

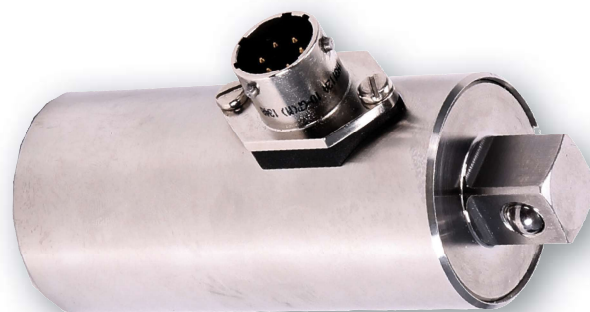
4	STATIC TRANSDUCERS - 1 - 1,000 lbf·in	
50610.xxx*	1 - 10 lbf·in	¼" M/F
50612.xxx	2.5 - 25 lbf·in	¼" M/F
50614.xxx	5 - 50 lbf·in	¼" M/F
50617.xxx	10 - 100 lbf·in	¼" M/F
50619.xxx	25 - 250 lbf·in	⅜" M/F
50621.xxx	50 - 500 lbf·in	⅜" M/F
50623.xxx	100 - 1,000 lbf·in	½" M/F

4	STATIC TRANSDUCERS - 10 - 100 ozf·in	
50609.xxx*	10 - 100 ozf·in	¼" M/F

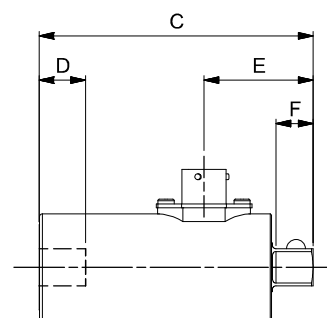
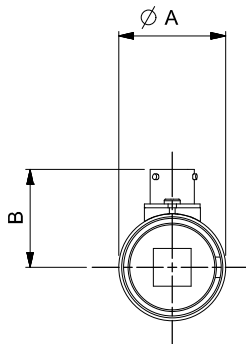
TD2.CCW Alternative calibration direction for transducers up to 1,500 N·m / 1,000 lbf·ft when ordered with new unit

xxx Indicates .LOG or .IND versions, please see page 90.

\* .LOG versions not suitable for use with TST, TTT or TTL-HE, purchased pre Feb 2016.



Model		¼" M/F	⅜" M/F	½" M/F	¾" M/F	1" M/F	
Part Number		50587.xxx 50588.xxx 50589.xxx 50590.xxx 50611.xxx 50615.xxx 50618.xxx 50610.xxx 50612.xxx 50614.xxx 50617.xxx 50609.xxx	50591.xxx 50592.xxx 50620.xxx 50619.xxx 50621.xxx	50593.xxx 50594.xxx 50849.xxx 50836.xxx 50624.xxx 50625.xxx 50623.xxx	50701.xxx 50596.xxx 50702.xxx 50627.xxx	50772.xxx 50766.xxx 50773.xxx	
	Dimensions (mm)	ØA	36	36	36	54	54
		B	33	33	33	42	42
		C	86	90	93	142	147
		D	10	13	16	24	29
		E	30	34	37	46	51
		F	6.5	10	13	22	26
	Weight (kg)		0.6	0.6	0.6	1.5	1.7





## STATIC TRANSDUCERS

### Static Transducers 1½" through to 3½" Male to Female (M/F)

4	STATIC TRANSDUCERS - 250 - 7,000 N·m	
50703.xxx	250 - 2,500 N·m	1½" M/F
50791.xxx	300 - 3,000 N·m	1½" M/F
50599.xxx	500 - 5,000 N·m	1½" M/F
50669.xxx@	700 - 7,000 N·m	1½" M/F

4	STATIC TRANSDUCERS - 250 - 5,000 lbf·ft	
50704.xxx	250 - 2,500 lbf·ft	1½" M/F
50630.xxx	500 - 5,000 lbf·ft	1½" M/F

TD5.CCW@ Alternative calibration direction for transducers from 1,501 - 7,000 N·m / 1,001 - 5,000 lbf·ft when ordered with new unit

4	STATIC TRANSDUCERS - 1,000 - 100,000 N·m	
50776.xxx	1,000 - 10,000 N·m	2½" M/F
50797.xxx	2,500 - 25,000 N·m	2½" M/F
50781.xxx	5,000 - 50,000 N·m	2½" M/F
50783.xxx	8,000 - 80,000 N·m	3½" M/F
50816.xxx	10,000 - 100,000 N·m	3½" M/F

4	STATIC TRANSDUCERS - 1,000 - 60,000 lbf·ft	
50777.xxx	1,000 - 10,000 lbf·ft	2½" M/F
50798.xxx	2,500 - 25,000 lbf·ft	2½" M/F
50799.xxx	3,000 - 30,000 lbf·ft	2½" M/F
50782.xxx	6,000 - 60,000 lbf·ft	3½" M/F

TD3.CCW+ Alternative calibration direction for transducers from 7,001 - 100,000 N·m / 5,001 - 100,000 lbf·ft when ordered with new unit

xxx Indicates .LOG or .IND versions, please see page 90.

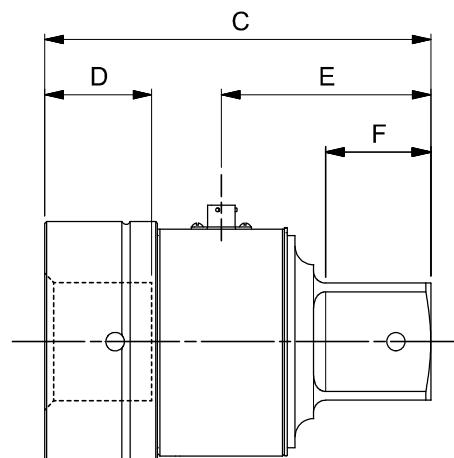
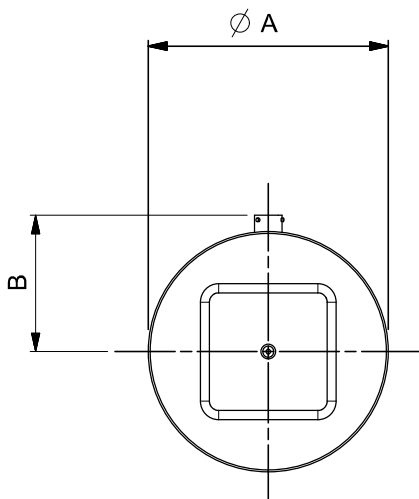
\* .LOG versions not suitable for use with TST, TTT or TTL-HE, purchased pre Feb 2016.

@ UKAS accredited calibration up to 6,000 N·m. A non-accredited value at 7,000 N·m is extrapolated and provided for reference only.

+ UKAS accredited calibration up to 80,000 lbf·ft. A non-accredited value at 100,000 lbf·ft is extrapolated and provided for reference only.



Model		1½" M/F	2½" M/F	3½" M/F
Part Number		50703.xxx 50791.xxx 50599.xxx 50669.xxx 50704.xxx 50630.xxx	50776.xxx 50797.xxx 50781.xxx 50777.xxx 50798.xxx 50799.xxx	50783.xxx 50816.xxx 50782.xxx
Dimensions (mm)	ØA	95	130	160
	B	59	80	107
	C	160	209	292
	D	41	59	91
	E	85	114	147
	F	38	57	76
Weight (kg)		4.5	11.5	16.5





## STATIC TRANSDUCERS

## Static Transducers 2½" through to 3½" Male to Male (M/M)

4	STATIC TRANSDUCERS - 2,500 - 100,000 N·m	
50603.xxx	2,500 - 25,000 N·m	2½" M/M
50794.xxx	5,000 - 50,000 N·m	3½" M/M
50796.xxx	10,000 - 100,000 N·m	3½" M/M

4	STATIC TRANSDUCERS - 2,500 - 100,000 lbf·ft	
50635.xxx	2,500 - 25,000 lbf·ft	2½" M/M
50795.xxx	5,000 - 50,000 lbf·ft	3½" M/M
50637.xxx+	10,000 - 100,000 lbf·ft	3½" M/M

TD3.CCW+ Alternative calibration direction for transducers from 7,001 - 100,000 N·m / 5,001 - 100,000 lbf·ft when ordered with new unit

4	STATIC TRANSDUCERS - 15,000 - 200,000 N·m	
-	15,000 - 150,000 N·m	4½" M/M
-	20,000 - 200,000 N·m	4½" M/M

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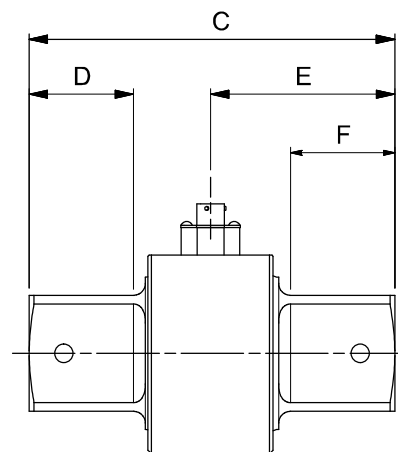
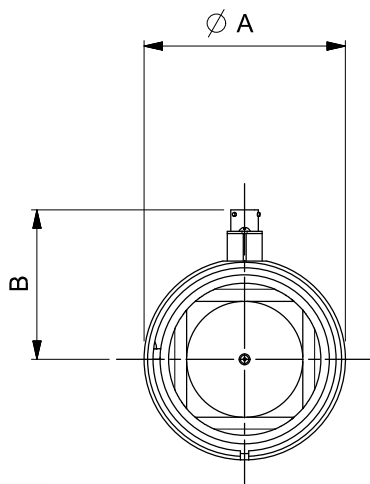
\* .LOG versions not suitable for use with TST, TTT or TTL-HE, purchased pre Feb 2016.

@ UKAS accredited calibration up to 6,000 N·m. A non-accredited value at 7,000 N·m is extrapolated and provided for reference only.

+ UKAS accredited calibration up to 80,000 lbf·ft. A non-accredited value at 100,000 lbf·ft is extrapolated and provided for reference only.



Model	2½" M/M	3½" M/M
Part Number	50603.xxx 50635.xxx	50794.xxx 50796.xxx 50795.xxx 50637.xxx
Dimensions (mm)	ØA	110
	B	82
	C	200
	D	57
	E	100
	F	57
Weight (kg)	11.5	16.5



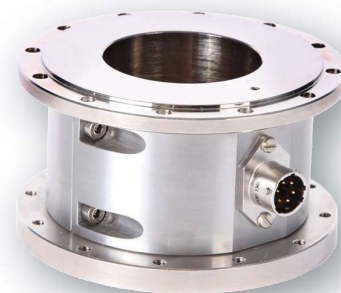
4	STATIC TRANSDUCERS
SECCAL.CW	Secondary calibration in one direction on static transducers with 2½" square drives to extend the range below 10% of the rated capacity, when ordered with new unit
SECCAL.CW+CCW	Secondary calibration in two directions on static transducers with 2½" square drives to extend the range below 10% of the rated capacity, when ordered with new unit
ADDCALPOINTS.NEW	Additional calibration steps below 10% of rated capacity to 2% for transducers up to 7,000 N·m (5,000 lbf·ft) when ordered with new unit



## ANNULAR TRANSDUCERS

These Annular Transducers are designed to fit directly to Norbar torque multipliers and will accurately measure the torque output from the gearbox, via a display instrument (instrument supplied separately, see pages 85 - 86 & 88).

- Up to 6,000 N·m classified to BS7882:2017, typically better than Class 1 for the primary classification range ( $\pm 0.5\%$  of reading from 20% to 100% of full scale)
- Robust heat treated alloy steel torsion tube design
- Designed to ignore non-torsional forces
- Smart transducers have a built in memory circuit which contains essential information about the transducer. This information can be read by Norbar's TST, TTT, TTL-HE & T-Box™ 2 instruments meaning that when the transducer is connected, it is immediately recognised and ready for use
- Smart transducers can also be used with many other instruments, however, these will operate as normal ratio calibrated (mV/V) transducers - the Smart data will not be read



#### 4 ANNULAR TRANSDUCERS FOR STANDARD SERIES GEARBOX

Suitable for PT1, PT1A and PT2

50638.xxx 100 - 1,000 N·m  $\frac{3}{4}$ " sq. dr.

50648.xxx 100 - 1,000 lbf·ft  $\frac{3}{4}$ " sq. dr.

Suitable for heavy duty HT2, PT1, PT1A and PT2

50639.xxx 150 - 1,500 N·m 1" sq. dr.

50649.xxx 150 - 1,500 lbf·ft 1" sq. dr.

**TD2.CCW** Alternative calibration direction for transducers up to 1,500 N·m / 1,000 lbf·ft when ordered with new unit

Suitable for HT5 and PT5

50640.xxx 250 - 2,500 N·m 1" sq. dr.

50650.xxx 250 - 2,500 lbf·ft 1" sq. dr.

50641.xxx 350 - 3,500 N·m 1" sq. dr.

Suitable for HT6 and PT6

50700.xxx 350 - 3,500 N·m  $1\frac{1}{2}$ " sq. dr.

Suitable for HT7 and PT7

50643.xxx 500 - 5,000 N·m  $1\frac{1}{2}$ " sq. dr.

50652.xxx 500 - 5,000 lbf·ft  $1\frac{1}{2}$ " sq. dr.

**TD5.CCW@** Alternative calibration direction for transducers from 1,501 - 7,000 N·m / 1,001 - 5,000 lbf·ft when ordered with new unit

#### 4 ANNULAR TRANSDUCERS FOR STANDARD SERIES GEARBOX

Suitable for HT9 and PT9

50644.xxx 1,000 - 10,000 N·m  $1\frac{1}{2}$ " sq. dr.

50653.xxx 700 - 7,000 lbf·ft  $1\frac{1}{2}$ " sq. dr.

Suitable for HT11 and PT11

50645.xxx 2,000 - 20,000 N·m  $2\frac{1}{2}$ " sq. dr.

50654.xxx 1,500 - 15,000 lbf·ft  $2\frac{1}{2}$ " sq. dr.

Suitable for HT12 and PT12

50764.xxx 3,500 - 35,000 N·m  $2\frac{1}{2}$ " sq. dr.

50765.xxx 2,500 - 25,000 lbf·ft  $2\frac{1}{2}$ " sq. dr.

Suitable for HT13 and PT13

50646.xxx 5,000 - 50,000 N·m  $2\frac{1}{2}$ " sq. dr.

Suitable for PT14

50647.xxx 10,000 - 100,000 N·m  $3\frac{1}{2}$ " sq. dr.

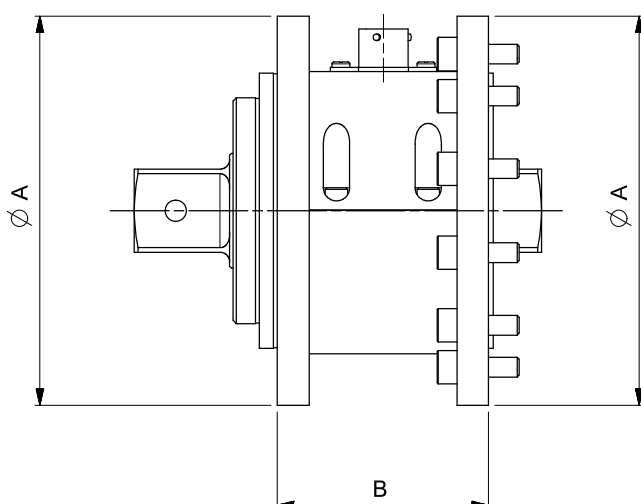
**TD4.CCW** Alternative calibration direction for transducers from 7,001 - 100,000 N·m / 5,001 - 75,000 lbf·ft when ordered with new unit

Suitable for PT18.MTS

- 30,000 - 300,000 N·m

Standard calibration is performed loading counter-clockwise only.

@ UKAS accredited calibration up to 6,000 N·m. A non-accredited value at 7,000 N·m is extrapolated and provided for reference only.



PT 18 fitted with 300,000 N·m  
Annular Transducer and square drive

Model		Annular Transducers for use with Standard Series Multipliers		
Part Number		50638.xxx 50648.xxx 50639.xxx 50649.xxx	50640.xxx 50650.xxx 50641.xxx 50700.xxx	50643.xxx 50652.xxx
Dimensions (mm)	ØA	108	119	144
	B	60	65	71
Weight (kg)		1.4	2.6	3.6



## HARSH ENVIRONMENT TRANSDUCERS

The accuracy and quality of the Norbar torque transducers has made them the first choice of many calibration laboratories throughout the world. The Harsh Environment range of transducers has been specifically designed for use with the Norbar TTL-HE instrument.

- Class 1 accuracy over the 'Primary' classification range ( $\pm 0.5\%$  of reading from 20 to 100% of full scale)
- IP65/IP67 rated
- Stainless steel design with Smart intelligence
- Bi-direction calibration as standard



Designed for use with the Harsh Environment Instrument range (TTL-HE) of products

4	STATIC TRANSDUCERS
50787.xxx	300 - 3,000 N·m 1½" M/F sq. dr.
50751.xxx*	300 - 3,000 N·m 1½" M/M sq. dr.
50705.xxx	500 - 5,000 N·m 1½" M/F sq. dr.
50729.LOG	500 - 5,000 N·m 1½" M/M sq. dr.
50706.xxx	500 - 5,000 lbf·ft 1½" M/F sq. dr.
50728.xxx	1,000 - 10,000 N·m 2½" M/F sq. dr.
50788.xxx	1,000 - 10,000 N·m 2½" M/ 2" M sq. dr.
50789.xxx	1,500 - 15,000 N·m 2½" M/ 2½" M sq. dr.
50726.xxx	2,500 - 25,000 N·m 3½" M/M sq. dr.
50727.xxx	4,000 - 40,000 N·m 3½" M/M sq. dr.
50743.xxx*	10,000 - 100,000 lbf·ft 3½" M/M sq. dr.

\* Suitable for use in Hydraulic Test Pots.

\* UKAS accredited calibration up to 80,000 lbf·ft. A non-accredited value at 100,000 lbf·ft is extrapolated and provided for reference only. Static Transducers 3,000 N·m and above supplied in carry case.

4	INSTRUMENTATION LEADS
60245.200	TTL-HE to HE Transducer
60250.200	TTL-HE to Norbar Static & Annular Transducers
60263.200	TTL-HE to Rotary Transducers
60266.200	HE Transducer to TTT, TST and T-Box 2
60261.200	Serial Data Lead for TTL-HE

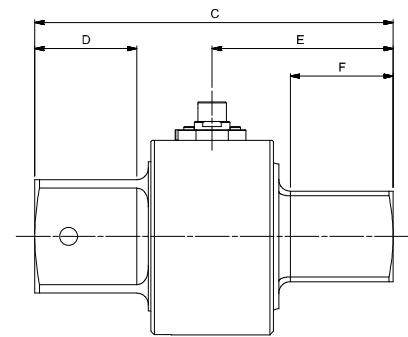
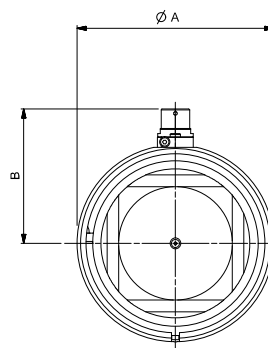
Other lengths can be ordered at an additional cost.

Note: The system should be calibrated with the increased length lead, as calibration may be affected.

Note: The maximum permissible cable length 15 m for Transducer Leads, 7 m if using 60266 with a T-Box™ XL. Contact Norbar for further details.

## Static Transducers - Male to Male (M/M) Square Drives

Model		3,000 N·m 5,000 N·m	10,000 N·m	15,000 N·m	25,000 N·m 40,000 N·m 100,000 lbf·ft
Part Number		50751.xxx 50729.xxx	50788.xxx	50789.xxx	50726.xxx 50727.xxx 50743.xxx
Dimensions (mm)	ØA	95	110	110	164
	B	68	75	75	103
	C	168	200	225	271
	D	38	57	57	76
	E	84	101	101	135
	F	38	57	58	76
Weight (kg)		3.4 (3,000 N·m) 5.0 (5,000 N·m)	11.4	11.4	21.5 (25,000 N·m) 22.0 (40,000 N·m) 25.0 (100,000 lbf·ft)



## Static Transducers - Male to Female (M/F) Square Drives

Model		3,000 N·m 5,000 N·m 5,000 lbf·ft	10,000 N·m
Part Number		50787.xxx 50705.xxx 50706.xxx	50728.xxx
Dimensions (mm)	ØA	95	110
	B	68	83
	C	160	189
	D	41	59
	E	84	100
	F	38	57
Weight (kg)		5.0	9.1

