

## Radius Ended Beam

Designed to remove potential sources of measurement error, these beams can be used to calibrate Norbar torque transducers, and torque transducers from other manufacturers (where design permits), as well as mechanical test devices. A UKAS accredited certificate for the measurement of torque radius is supplied with each beam.

- The < 0.02% uncertainty of applied torque achievable with these beams allows calibration to the highest class of accuracy specified by BS7882:2008.
- Machined to  $\pm 0.01\%$  (100 microns per meter) from aircraft alloys.
- Clockwise and counter-clockwise operation.
- All have interchangeable square drive to increase flexibility of use.
- Torque radius maintained throughout  $\pm 8$  degrees of rotation from horizontal.
- No bearings to cause energy loss during loading.
- Balanced to maximise energy transfer to transducer during loading.
- Loading point offset to reduce bending moments on the transducer.
- High torque radius accuracy allows use of cast iron weights rather than stainless steel. Weight accuracy is required to be equal to or better than  $\pm 0.01\%$ .



**NOTE:** A temperature controlled environment is essential for use of these beams. The selection of weights will be influenced by gravitational constant and air buoyancy values at the proposed laboratory site. See page 88.

### Radius Ended Beams - S.I. Calibration

Range		Beam Part No.	Radius to Centre Line of Hanger	Weight Set Part No.s	Weight Set Comprising (N)	Diameter of Weight Hanger Rod	Drive Square A/F (in)
Minimum	Maximum						
0.5 N.m	5.0 N.m	21429	250 mm	21476.NAM	10 x 2	9.5 mm	¼, ⅜
1 N.m	10 N.m	21429	250 mm	21454.NAM	10 x 4	9.5 mm	¼, ⅜
5 N.m	50 N.m	21429	250 mm	21458.NAM	10 x 20	9.5 mm	¼, ⅜
1.2 N.m	60 N.m	21429	250 mm	Q2343.NAM	1 x 4.8, 1 x 7.2 1 x 12, 1 x 24 4 x 48	9.5 mm	¼, ⅜
5 N.m	50 N.m	21421	500 mm	21477.NAM	10 x 10	9.5 mm	⅜, ½
10 N.m	100 N.m	21421	500 mm	21458.NAM	10 x 20	9.5 mm	½, ⅜
5 N.m	250 N.m	21427	500 mm	21459.NAM	1 x 10, 10 x 50	9.5 mm	½, ⅜
5 N.m	500 N.m	21427	500 mm	21460.NAM	1 x 10, 10 x 100	9.5 mm	½, ⅜
10 N.m	500 N.m	21428	1000 mm	21459.NAM	1 x 10, 10 x 50	9.5 mm	½, ⅜, 1
10 N.m	1000 N.m	21428	1000 mm	21460.NAM	1 x 10, 10 x 100	9.5 mm	½, ⅜, 1
10 N.m	1500 N.m	21428	1000 mm	21483.NAM	14 x 100, 1 x 50 2 x 20, 1 x 10	9.5 mm	½, ⅜, 1

### Radius Ended Beams - Imperial Calibration

Range		Beam Part No.	Radius to Centre Line of Hanger	Weight Set Part No.s	Weight Set Comprising (lbf)	Diameter of Weight Hanger Rod	Drive Square A/F (in)
Minimum	Maximum						
10 lbf.in	100 lbf.in	21430	10"	21465.NAM	10 x 1	9.5 mm	¼, ⅜
50 lbf.in	500 lbf.in	21430	10"	21466.NAM	10 x 5	9.5 mm	¼, ⅜
10 lbf.ft	100 lbf.ft	21424	12"	21467.NAM	10 x 10	9.5 mm	⅜, ½
50 lbf.ft	500 lbf.ft	21425	24"	21468.NAM	10 x 25	9.5 mm	½, ⅜
100 lbf.ft	1000 lbf.ft	21426	48"	21468.NAM	10 x 25	9.5 mm	⅜, 1