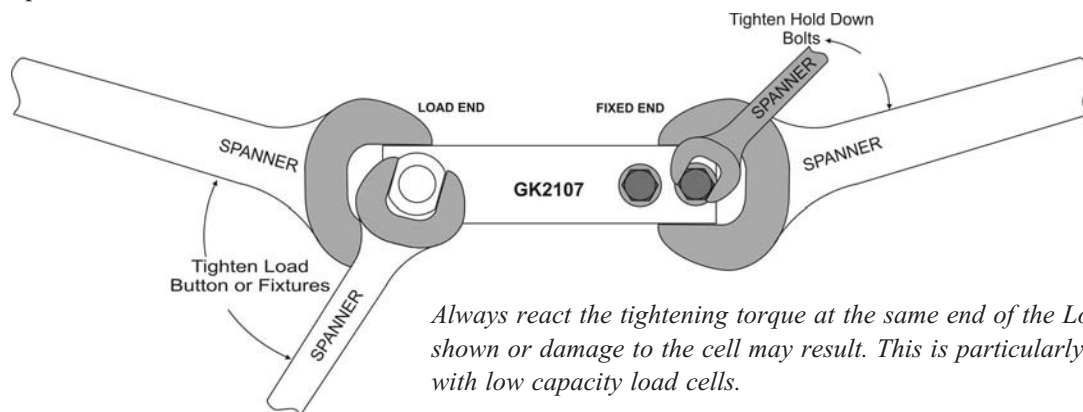


MOUNTING BOLT SELECTION, TORQUE and CLAMPING FORCE.

This Installation Note contains recommendations for fixing GK2107 Shear Beam Load Cells to Mounting Structures using two bolts at the mounting locations in the cell. The note applies whether the cells are mounted on base plates or mounted on part of a structure. The cantilever nature of Shear Beam Load Cells results in high bending moments which produce high tensile forces in the mounting bolts, especially in the higher capacity cells. Great care must be taken to use high quality high strength bolts. If thin section bases are used, they must be of high strength material. GS-KMT Bases are made of Hardened Stainless Steel with a yield strength of 1,000MPa minimum. Do not attempt to use thin steel sections like the GS-KMT high strength bases unless you are using high strength material of at least 1,000MPa yield. If using through hole mounting with NUTS you will need to ensure the NUTS are sufficiently large and strong so the threads in the NUTS will not strip at the required torque.



WARNING - THE INFORMATION BELOW IS A GUIDE ONLY. YOU SHOULD VERIFY THE INFORMATION AND MAKE SURE IT IS APPROPRIATE FOR YOUR INSTALLATION. ALWAYS USE A PLAIN WASHER AND SINGLE COIL SPRING WASHER WITH THE MOUNTING BOLTS.

USING LOWER GRADE BOLTS, LESS THREAD ENGAGEMENT, LOWER STRENGTH BASE PLATE MATERIALS OR HIGHER TORQUE VALUES MAY RESULT IN BROKEN BOLTS OR STRIPPED THREADS OCCURRING DURING INSTALLATION OR SERVICE.

In the below, Stainless Steel Bolts of type 316 are indentified as A4-50; -70 or -80 of 210MPa; 450MPa & 600MPa Yield Strength. Where an A4-50 is specified the higher strength A4-70 or -80 can be used. Proof Stress for non-stainless steel bolts is higher, with grade 10.9 being 830MPa and 12.9 Cap Screws being 970MPa.. The clamping forces below are calculated using the 150% overload rating of the load cells unless stated as "Always<" in which case 100% is used.

GK2107 Model Capacity kg / T	Size and MINIMUM Bolt Grade Where 10.9 is specified Grade 12.9 can be used	Torque Bolts to kg-m	Clamping Force per Bolt at 0.20 K Factor kg	Thread Engagement in GS-KMT 1,000MPa Bases mm	Minimum Thread Engagement in Steel of 250MPa Yield Strength mm
25 - 250	M12x1.75 /10.9/A4-50	3	1,250	8 to 9	10
500 - 1,000	M12x1.75 /10.9/A4-70	5	2090	8 to 9	13
2,000	M12x1.75 /10.9/A4-80	9	3800	9 to 12	25
Always<3,000	M12x1.75 /10.9/A4-80	9	3800	9 to 12	25
3,000	M12x1.75 / 12.9	13	5,430	9 to 12	32
5,000	M18x2.5 / 10.9	33	9,200	10 to 18	36
5,000	M20x2.5 / 8.8	37	9,200	na	18

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