

WHEEL NUT CLAMPING FORCE

Tests conducted by the Motor Wheel Engineering Department show the superior clamp load of a Cone Lock Nut (CLN) wheel fastening system over a Double Cap Nut (DCN) system. The superiority lies in the CLN's flat seating surface over the DCN's ball seat. The CLN is used on Hub Piloted Wheel Systems, with the DCN used on the conventional 10-hole stud piloted disc wheel system.

As shown in the graph, 450-500 ft.-lbs. of torque (horizontal axis) using CLN yields 45,000 lbs to 50,000 lbs. of clamping pressure (vertical axis) for one nut. This compares to the DCN's 13,000 lbs. to 18,000 lbs. pressure at 450-500 ft.-lbs. of torque. Hub Piloted Systems using CLN offer up to 150% greater clamp force per nut. For a wheel at nominal recommended torques using 10 inner/outer DCN compared to the CLN Systems, the following typical forces are registered:

DCN	Hub Piloted 8 Hole	Hub Piloted 10 Hole	% Increase
Dual Wheel 180,000	400,000	500,000	120/175
Front Wheel 140,000	400,000	500,000	185/255

