



Introduction

The following instructions apply to the mounting of NEMA or IEC motors to a motor plate. The UltraMax gear drive is mounted level to the motor plate surface prior to shipment at the Factory. Motor plates may include pedestals if required for proper vertical positioning of the motor.

General Instructions

- A. Prior to assembly, inspect all parts for cleanliness. Remove burrs from all mounting surfaces.
- B. Place the motor plate (with UltraMax drive already in place) on a flat and rigid surface plate or foundation. Shim under the motor plate foot pads until the motor plate is level and ALL motor plate feet are in the same plane.
- C. Motor mounting fastener information is listed in Table 1 for NEMA motors and Table 2 for IEC motors.
- D. Tables 3 and 4 indicate which motor frame and drive combinations require clearance holes or tapped holes for mounting the motor to the motor plate.

TABLE 1 — NEMA Motor Foundation Fastener Information

MOTOR FRAME	Fastener Size	Clearance Hole Diameter (In.)	Tightening Torque ★ (lb.-ft.) ±5%
140T	.312	.3750	15
180T	.375	.4375	27
210T	.375	.4375	27
250T	.500	.5625	67
280T	.500	.5625	67
280TS	.500	.5625	67
320T	.625	.6875	134
320TS	.625	.6875	134
360T	.625	.6875	134
360TS	.625	.6875	134
400T	.750	.8750	242
400TS	.750	.8750	242
440T	.750	.8750	242
440TS	.750	.8750	242

★ Tightening torques listed are for Grade 5 fasteners. If higher grade fasteners are used, higher tightening torques may be used.

TABLE 2 — IEC Motor Foundation Fastener Information

MOTOR FRAME	Fastener Size	Clearance Hole Diameter (mm)	Tightening Torque ★ (Nm) ±5%
80	M8	10	24
90	M8	10	24
100	M10	12	49
112	M10	12	49
132	M10	12	49
160	M12	15	84
180	M12	15	84
200	M16	19	211
225	M16	19	211
250	M20	24	413
280	M20	24	413

★ Tightening torques listed are for Property Class 8.8 fasteners. If higher class fasteners are used, higher tightening torques may be used.

Motor Plate Assembly (With or Without Pedestal)

- A. Determine shaft gap, coupling gap and, when required, coupling overhang.
- B. Assemble coupling hubs to motor and drive shafts. Position motor on motor plate.
- C. Align coupling hubs per the coupling installation manual. Scribe position of motor mounting holes onto the surface of the motor plate (or pedestal).
Shims up to 3.75" (95, 25mm) may be required to obtain the correct height. These shims are furnished by the Factory when specified on the purchase order; otherwise they will be the purchaser's responsibility.
- D. Position the coupling guard over the coupling (when furnished). Maintain .125" (3, 175mm) minimum clearance with all rotating parts. Scribe the coupling guard mounting holes on the motor plate (or pedestal) surface. Refer to 148-114 for complete installation instructions for coupling guards.
- E. Remove the motor and coupling guard.
- F. Determine whether motor mounting holes are thru-drilled or drilled and tapped in the motor plate (or pedestal) per Tables 3 or 4.
- G. Refer to Tables 1 or 2 for fastener size or clearance hole size.
- H. Thru-drill (or drill and tap) motor mounting holes and coupling guard holes on the motor plate (or pedestal).
- J. Replace motor and shims on the motor plate (or pedestal).
- K. Align coupling.
- L. Refer to Tables 3 and 4 to determine if motor fasteners are assembled from the top or bottom of the motor plate (or pedestal).

TABLE 3 — NEMA Motors – Mounting Holes in Motor Plates

MOTOR FRAME	DRIVE SIZE									
	2040	2050	2060	2070	2080	2090	2100	2110	2120	2130
140T	1	1	1	1	1	1*	1	1*	1*	1*
180T	1	1	1	1	1	1*	1	1	1	1*
210T	2	1	1	1	1	1*	1	1	1	1*
250T	2	2	1	1	1	1	1	1	1	1*
280T	2	2	2	1	1	1	1	1	1	1*
280TS	2	2	2	1	1	1	1	1	1	1*
320T	2	2	2	2	1	1	1	1	1	1
320TS	...	2	2	2	1	1	1	1	1	1
360T	...	2	2	2	2	1	1	1	1	1
360TS	...	2	2	2	2	1	1	1	1	1
400T	...	...	2	2	2	1	1	1	1	1
400TS	...	...	2	2	2	1	1	1	1	1
440T	...	...	...	2	2	1	1	1	1	1
440TS	...	...	...	2	2	1	1	1	1	1

¹ Drill thru.

² Drill and tap.

* Insert fastener from bottom.

TABLE 4 — IEC Motors – Mounting Holes in Motor Plates

MOTOR FRAME	DRIVE SIZE									
	2040	2050	2060	2070	2080	2090	2100	2110	2120	2130
80	1	1	1	1	1	1*	1	1*	1*	1*
90	1	1	1	1	1	1*	1	1*	1*	1*
100	1	1	1	1	1	1*	1	1*	1*	1*
112	1	1	1	1	1	1*	1	1	1	1*
132	2	1	1	1	1	1*	1	1	1	1*
160	2	2	1	1	1	1	1	1	1	1*
180	2	2	2	1	1	1	1	1	1	1*
200	2	2	2	2	1	1	1	1	1	1
225	...	2	2	2	2	1	1	1	1	1
250	...	...	2	2	2	1	1	1	1	1
280	...	...	...	2	2	1	1	1	1	1

¹ Drill thru.

² Drill and tap.

* Insert fastener from bottom.

M. Refer to Tables 1 and 2 for the required fastener and tightening torque. Fasten the motor to the motor plate (or pedestal).

Drives equipped with a backstop and assembled complete with a motor by the Factory are shipped to the user with the coupling disconnected. Make electrical connections and verify the correct rotation of the motor and drive shafts. Then check coupling alignment and complete coupling assembly.

N. Lubricate and assemble the coupling as specified in the coupling installation manual.

O. Complete coupling guard assembly.