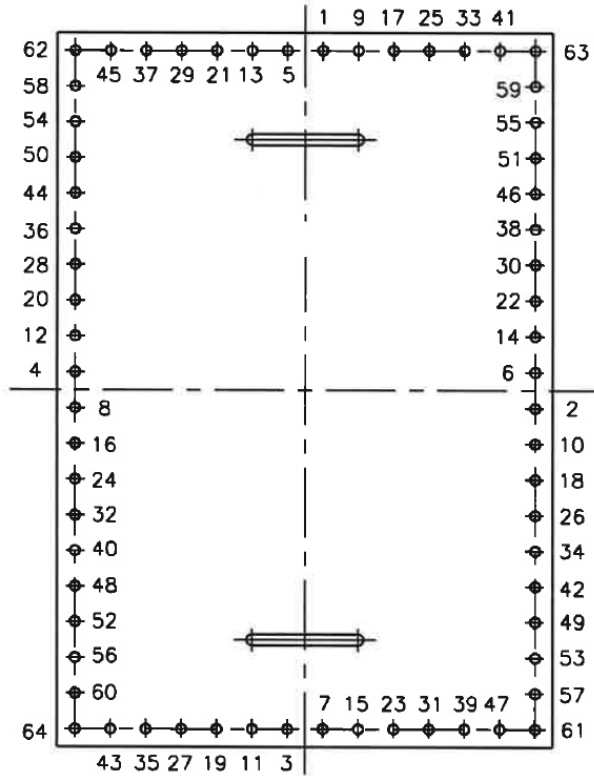




Manway Bolt Torque Guide



1. ALIGN COMPONENT PARTS AND CLAMP TOGETHER WITH SUITABLE CLAMPING DEVICE.
 2. LUBRICATE BOLT THREADS IN AREA ON NUT ENGAGEMENT, FACE OF NUTS AND BOLT HEAD USING A SUITABLE LUBRICANT.
 3. INSTALL ALL BOLTS AND NUTS FINGER TIGHT
 4. TORQUE ALL BOLTS TO 20 FT-LBS IN THE SEQUENCE INDICATED, THEN REPEAT TO FULL TORQUE VALUE BASED ON CHART BELOW.
 5. USE ROTATIONAL TIGHTENING UNTIL ALL BOLTS ARE STABLE AT FINAL TORQUE LEVEL.
- ** OVER TIGHTENING MAY CAUSE GASKET FAILURE ****

Nominal Dia. (in.)	Threads per inch	SAE J429 Grade 2			SAE J429 Grade 5			SAE J429 Grade 8					
		Clamp Load (lbs.)	Tightening Torque			Clamp Load (lbs.)	Tightening Torque			Clamp Load (lbs.)	Tightening Torque		
			K = 0.15	K = 0.18	K = 0.20		K = 0.15	K = 0.18	K = 0.20		K = 0.15	K = 0.18	K = 0.20
Unified Coarse Thread Series													
7/16	14	4385	24	29	32	6777	37	44	49	9568	52	63	70
1/2	13	5853	37	44	49	9046	57	68	75	12771	80	96	106

K = 0.15 (LUBRICATED CONDITIONS); 0.18 (ZINC PLATED AND DRY CONDITIONS); 0.20 (PLAIN DRY CONDITIONS)