

NOM. SIZE	BOLT SIZE	QTY	APPLIED TORQUE IN FT.-LBS.		APPLIED TORQUE IN NEWTON-METER	
			MINIMUM	MAXIMUM	MINIMUM	MAXIMUM
1/2"	1/2"-13	4	9	28	12	38
3/4"	1/2"-13	4	13	40	18	54
1"	1/2"-13	4	17	53	23	72
1-1/4"	1/2"-13	4	26	60	35	81
1-1/2"	1/2"-13	4	35	60	48	81
2"	5/8"-11	4	69	120	94	163
2-1/2"	5/8"-11	4	81	120	110	163
3"	5/8"-11	4	114	120	155	163
3-1/2"	5/8"-11	8	66	120	90	163
4"	5/8"-11	8	84	120	114	163
5"	3/4"-10	8	117	200	159	271
6"	3/4"-10	8	148	200	201	271
8"	3/4"-10	8	190	200	258	271
10"	7/8"-9	12	188	320	255	434
12"	7/8"-9	12	250	320	339	434
14"	1"-8	12	317	490	430	665
16"	1"-8	16	301	490	408	665
18"	1-1/8"-8	16	448	710	607	963
20"	1-1/8"-8	20	395	710	536	963
24"	1-1/4"-8	20	563	1000	763	1356
30"	3/4"-10	44	190	200	258	271

NOM. SIZE	BOLT SIZE	QTY	APPLIED TORQUE IN FT.-LBS.		APPLIED TORQUE IN NEWTON-METER	
			MINIMUM	MAXIMUM	MINIMUM	MAXIMUM
1/2"	1/2"-13	4	12	28	16	38
3/4"	5/8"-11	4	21	51	29	69
1"	5/8"-11	4	28	67	40	91
1-1/4"	5/8"-11	4	43	102	58	138
1-1/2"	3/4"-10	4	64	151	87	205
2"	5/8"-11	8	46	108	62	146
2-1/2"	3/4"-10	8	60	141	81	191
3"	3/4"-10	8	88	200	119	271
3-1/2"	3/4"-10	8	99	200	134	271
4"	3/4"-10	8	125	200	170	271
5"	3/4"-10	8	156	200	212	271
6"	3/4"-10	12	131	200	178	271
8"	7/8"-9	12	205	320	278	434
10"	1"-8	16	219	490	297	664
12"	1-1/8"-8	16	319	710	433	963
14"	1-1/8"-8	20	287	652	389	884
16"	1-1/4"-8	16	401	912	544	1237
18"	1-1/4"-8	24	489	1000	663	1356
20"	1-1/4"-8	24	484	1000	656	1356
24"	1-1/2"-8	24	662	1552	898	2104
30"	1-3/8"-8	36	650	1360	881	1844

NOM. SIZE	BOLT SIZE	QTY	APPLIED TORQUE IN FT.-LBS.		APPLIED TORQUE IN NEWTON-METER	
			MINIMUM	MAXIMUM	MINIMUM	MAXIMUM
6"	3/4"-10	12	131	170	178	231
10"	1"-8	16	219	417	297	565
14"	1-1/8"-8	20	287	525	389	712
20"	1-1/4"-8	24	484	740	656	1003

NOM. SIZE	BOLT SIZE	QTY	APPLIED TORQUE IN FT.-LBS.		APPLIED TORQUE IN NEWTON-METER	
			MINIMUM	MAXIMUM	MINIMUM	MAXIMUM
4"	5/8"-II	4	147	155	199	210
5"	5/8"-II	4	147	155	199	210
6"	3/4"-10	4	247	260	335	353
8"	7/9"-9	4	390	410	529	556

NOM. SIZE	BOLT SIZE	QTY	APPLIED TORQUE IN FT.-LBS.		APPLIED TORQUE IN NEWTON-METER	
			MINIMUM	MAXIMUM	MINIMUM	MAXIMUM
4"	3/8"-16	8	10	11	14	15
6"	3/4"-10	8	52	SEE 55 NOTE 4	71	75 NOTE 4

NOM. SIZE	BOLT SIZE	QTY	APPLIED TORQUE IN FT.-LBS.		APPLIED TORQUE IN NEWTON-METER	
			MINIMUM	MAXIMUM	MINIMUM	MAXIMUM
6"	3/4"-10	8	52	SEE 55 NOTE 4	71	SEE 75 NOTE 4

BOLT SIZE	QTY	APPLIED TORQUE IN FT.-LBS.		APPLIED TORQUE IN NEWTON-METER	
		MINIMUM	MAXIMUM	MINIMUM	MAXIMUM
5/16"-24	4	11	12	15	16

BOLT SIZE	APPLIED TORQUE IN FT.-LBS.		APPLIED TORQUE IN NEWTON-METER	
	MINIMUM	MAXIMUM	MINIMUM	MAXIMUM
7/16"-14	27	28	37	38
5/8"-11	84	85	114	115

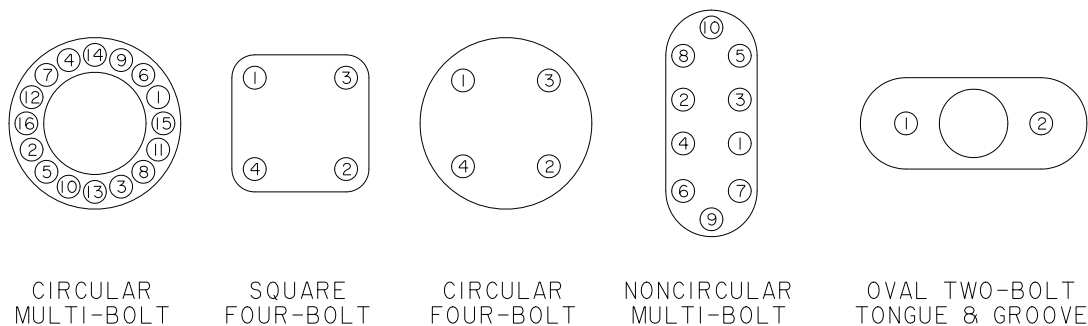


FIGURE 1
CORRECT BOLTING PATTERNS

NOTES:

1. SPECIFIED TORQUE VALUES WERE CALCULATED ASSUMING MATING FLANGE SURFACES ARE PARALLEL SO THE GASKET CONTACT SURFACES BEAR UNIFORMLY ON THE GASKET WHEN TORQUE IS APPLIED. IF A LEAK TIGHT JOINT CAN NOT BE ACHIEVED USING MAXIMUM TORQUE VALUES, CHECK INSTALLATION FOR PARALLELISM.
2. THE MINIMUM TORQUE VALUES ARE THE MINIMUM REQUIRED TO SEAT THE GASKET AND PROVIDE A LEAK-TIGHT JOINT.
3. TORQUE VALUES ARE BASED ON GARLOCK IFG 5500 GASKET MATERIAL FOR TABLES 1, 2 & 3. ALL GASKETS ARE TO BE INSTALLED DRY.
4. TORQUE VALUES FOR 6"-150 LB. & 300 LB. FLGS. PRESSURE VESSEL SIGHT GLASS IN TABLES 5 & 6 ARE BASED ON GARLOCK IFG 5500 CUSHION GASKET AND GYLON 3545 SEAL GASKET. ALL GASKETS ARE TO BE INSTALLED DRY.
GASKET INSTRUCTION:
INSTALL GYLON 3545 GASKET FIRST, SIGHT GLASS SECOND,
GARLOCK IFG 5500 GASKET LAST.
5. TORQUE WRENCHES MUST BE USED FOR THIS PROCESS. THE FOLLOWING ARE GUIDELINES FOR PROPER TORQUE:
 - 5.1 BOLT TIGHTENING MUST PROGRESS IN A CRISSCROSS MANNER (SEE FIGURE 1).
 - 5.2 TORQUE SHALL BE APPLIED IN TWO STEPS TO AVOID UNEVEN GASKET COMPRESSION. THE FIRST STEP IS TO BE 25% OF THE TOTAL VALUE. FOR EXAMPLE, IF THE FINAL VALUE IS 600 FT-LBS./ 814 NEWTON-METER, THE FIRST STEP WOULD BE 150 FT-LBS./ 203 NEWTON-METER.
6. FIELD TORQUE REQUIREMENTS ARE IDENTICAL TO THE ABOVE EXCEPT AS FOLLOWS:
 - 6.1 RETORQUE THE BOLTS AFTER A PERIOD OF FROM 12 TO 24 HOURS TO INSURE A TIGHT JOINT AND AVOID THE LOOSENING EFFECTS ASSOCIATED WITH GASKET CREEP.
7. TORQUE VALUES BASED ON ALL SCREW, STUD & NUT SURFACES LUBRICATED.
8. COMPRESSOR SUCTION AND DISCHARGE FLANGES AND INTERSTAGE CONNECTION ARE NOT INCLUDED IN THE SCOPE OF ASME B31.5 (SEE B31.5, PARAGRAPH 500.1.3.d.).

CERTIFIED FOR CONSTRUCTION
YORK
INTERNATIONAL CORP.
DATE 08-05-04 BY A.R. SHANKO JR.

REV. LEV.	DATE	REVISION RECORD	CHG. NO.	DR.	CK.	REV. LEV.	DATE	REVISION RECORD	CHG. NO.	DR.	CK.	REV. LEV.	DATE	REVISION RECORD	CHG. NO.	DR.	CK.	*ALL PROPRIETARY RIGHTS IN THE SUBJECT MATTER HEREOF ARE RESERVED. AND NO PERMISSION IS GRANTED TO REPRODUCE THIS PRINT IN WHOLE OR IN PART, OR DISCLOSE ANY OF THE INFORMATION UPON IT TO OTHERS WITHOUT WRITTEN RELEASE BY YORK INTERNATIONAL CORPORATION".	DIMENSIONS ARE IN INCHES DO NOT SCALE TOLERANCES PER ENG. STD. M-282 WELDING PER ENG. STD. M-30 REF. DWG.	INSTRUCTION BOLT TORQUE TITAN OM CHILLER REFRIG. FLANGE CONN'S.	MATERIAL TYPE _____ ENG. STD. _____ PART NO. _____ CUT SIZE _____
-	NEW		C801			C	08-05-04	REFILM - ADDED CERTIFICATION STAMP	C802	JDD	ARS										
A	07-25-02	ADDED NEW NOTE 1, RE-NUMBERED NOTES 2 THRU 7	C802	DJP	DJP				C802												
B	10-03-02	ADDED TABLES 6 & 8 RE-NUMBERED TABLES	C802	CWM	CWM				C802												
		6 THRU 8, ADDED NEW NOTE 4 RE-NUMBERED NOTES	C802																		
		4 THRU 8. ADDED OVAL TONGUE & GROOVE PATTERN																			
C	11-HI-03	REFILM - ADDED METRIC UNITS TO TABLES 1 THRU 8	C802	JDD	TWW				C802												
C	05-19-04	REFILM - UPDATE, IN NOTE 8, PARA. WAS 500.I.5	C802	MEB	MEB				C802												

NAME DATE
DR. D.J.PETROSKIE 08-16-01
APPR. D.J.PETROSKIE 11-29-01
SCALE: N.T.S.

SIZE CAGE NO DRAWING NUMBER
D 66935 077-10989-000

WT. = LBS. ORIG. NO. 077-10989-000 SHEET