

TABLE 1
150 LB. FLANGE WITH A193 GR. B7 SCREWS

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

TABLE 3
300 LB. GRAY IRON MULTI-STAGE COMPR. FLG. WITH J429 GR.5 SCREWS

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

TABLE 4
COMPRESSOR INTERSTAGE CONNECTION

NOM. SIZE	BOLT SIZE	QTY	APPLIED TORQUE IN FT.-LBS.		APPLIED TORQUE IN NEWTON-METER	
			MINIMUM	MAXIMUM	MINIMUM	MAXIMUM
4"	5/8"-11	4	147	155	199	210
5"	5/8"-11	4	147	155	199	210
6"	3/4"-10	4	247	260	335	353
8"	7/9"-9	4	390	410	529	556

TABLE 5
PRESSURE VESSEL SIGHT GLASSES
150 LB. FLANGES

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	55 SEE NOTE 4	71	75 SEE NOTE 4

TABLE 6
PRESSURE VESSEL SIGHT GLASSES
300 LB. FLANGES

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	55 SEE NOTE 4	71	75 SEE NOTE 4

TABLE 7
RECEIVER LEVEL INDICATOR

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

TABLE 8
2-BOLT OVAL TONGUE & GROOVE FLANGES

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

TABLE 2
300 LB. FLANGE WITH A193 GR.B7 SCREWS

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

NOTES:

- 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.
- THE MINIMUM TORQUE VALUES ARE THE MINIMUM REQUIRED TO SEAT THE GASKET AND PROVIDE A LEAK-TIGHT JOINT.
- TORQUE VALUES ARE BASED ON GARLOCK IFG 5500 GASKET MATERIAL FOR TABLES 1, 2 & 3. ALL GASKETS ARE TO BE INSTALLED DRY.
- 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.
- TORQUE WRENCHES MUST BE USED FOR THIS PROCESS. THE FOLLOWING ARE GUIDELINES FOR PROPER TORQUE:
 - BOLT TIGHTENING MUST PROGRESS IN A CRISSCROSS MANNER (SEE FIGURE 1).
 - 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.
- FIELD TORQUE REQUIREMENTS ARE IDENTICAL TO THE ABOVE EXCEPT AS FOLLOWS:
 - 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.
- TORQUE VALUES BASED ON ALL SCREW, STUD & NUT SURFACES LUBRICATED.
- 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.).

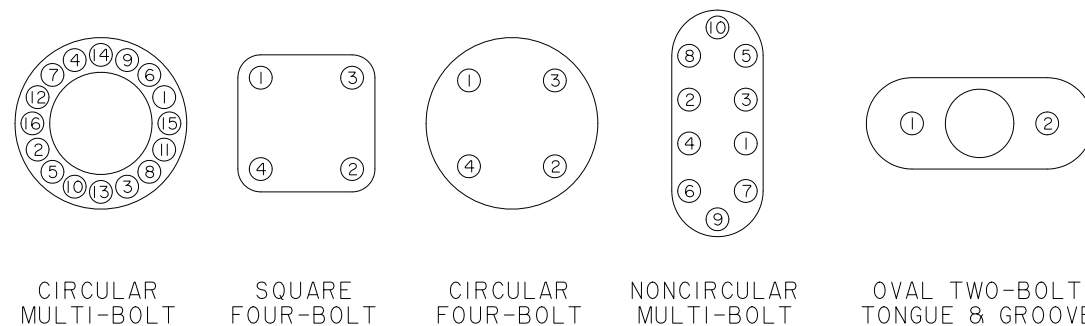


FIGURE 1
CORRECT BOLTING PATTERNS

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

REV. LEV.	DATE	REVISION RECORD	CHG. NO.	DR.	CK.
-	NEW		CS01		
A	07-25-02	ADDED NEW NOTE 1, RE-NUMBERED NOTES 2 THRU 7	CS02	DJP	DJP
B	10-03-02	ADDED TABLES 6 & 8 RE-NUMBERED TABLES	CS02	CWM	CWM
		6 THRU 8, ADDED NEW NOTE 4 RE-NUMBERED NOTES			
		4 THRU 8, ADDED OVAL TONGUE & GROOVE PATTERN			
C	11-11-03	REFILM - ADDED METRIC UNITS TO TABLES 1 THRU 8	CS02	JDD	TWW
C	05-19-04	REFILM - UPDATE, IN NOTE 8, PARA. WAS 500.1.5	CS02	MEB	MEB

REV. LEV.	DATE	REVISION RECORD	CHG. NO.	DR.	CK.
C	08-05-04	REFILM - ADDED CERTIFICATION STAMP	CS02	JDD	ARS

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YORK INTERNATIONAL CORPORATION
YORK, PA. 17405

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 _____
NAME DR. D.J. PETROSKIE APPR. D.J. PETROSKIE SCALE: N.T.S.	DATE 08-16-01 11-29-01	SIZE D
CAGE NO. 66935	DRAWING NUMBER 077-10989-000	
WT. = _____ LBS.	ORIG. NO. 077-10989-000	SHEET _____