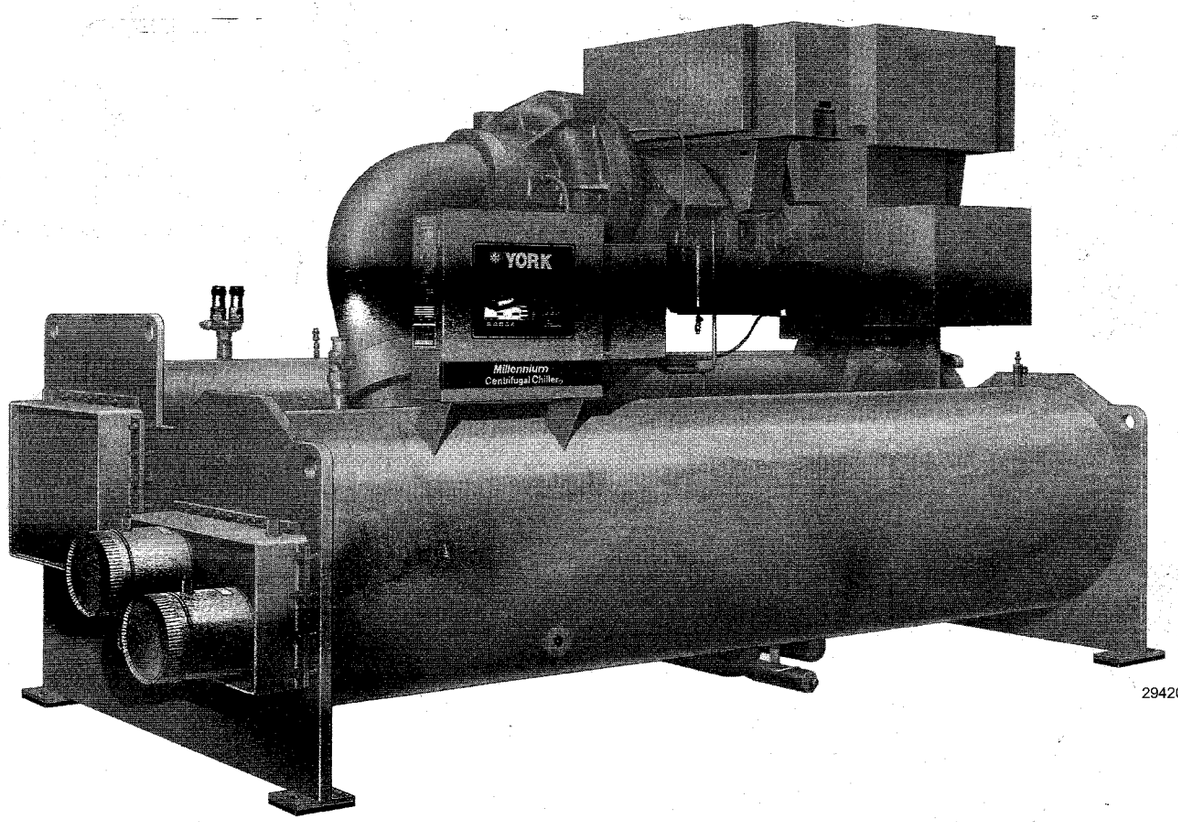
YORK®	*MILLENNIUM*™ CENTRIFUGAL LIQUID CHILLERS	
INSTALLATION INSTRUCTIONS	Supersedes: Nothing	Form 160.54-N1 (399)

MODEL YK (STYLE E)
R-134a (COOLING ONLY)

WITH GRAPHIC CONTROL CENTER FOR ELECTRO-MECHANICAL STARTER, SOLID STATE STARTER & VARIABLE SPEED DRIVE



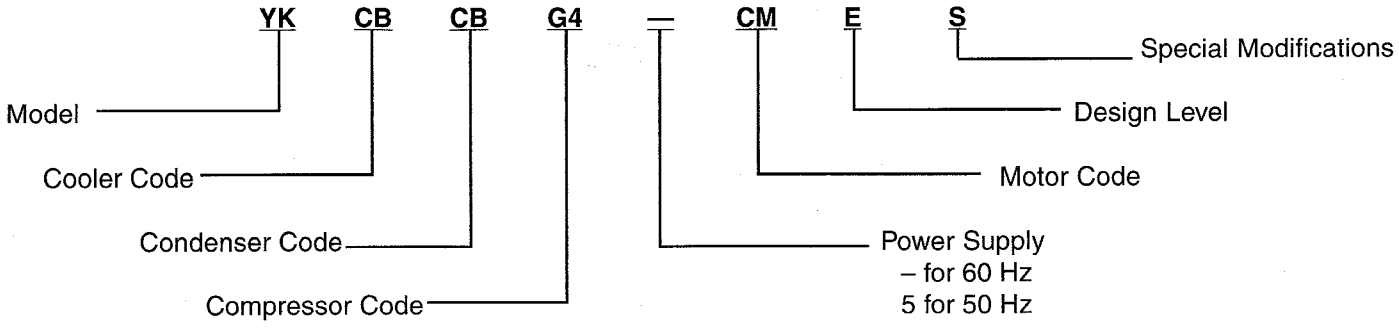
29420A

Metric Conversions

ALLOWABLE COMPRESSOR/ COOLER/CONDENSER/MOTOR COMBINATIONS

COMPRESSOR CODE	COOLER CODE	CONDENSER CODE	MOTOR CODES	
			60 HZ	50 HZ
G4	CB, CC, CD, CE	CB, CC, CD, DB, DC, DD	CH – CT	5CE – 5CS
	DD, DE	CB, CC, CD, DB, DC, DD, EB, EC, ED		
H0/H4	DB, DC, DD	DB, DC, DD, EB, EC, ED	CH – CV	5CE – 5CX
	EC, ED	DB, DC, DD, EB, EC, ED, FB, FC, FD		
	FC, FD	EB, EC, ED, FB, FC, FD		
H1/H5	EB	EB, EC, ED, FB, FC, FD	CN – CY	5CK – 5DD
	FB, FC, FD	EB, EC, ED, FB, FC, FD, GB, GC, GD		
	GC, GD	FB, FC, FD, GB ,GC, GD		
H2/H6	FB, FC	FA, FB, FC, FD, GB, GC, GD	CN – CZ	5CK – 5DD
	GB, GC, GD	FA, FB, FC, FD, GB, GC, GD		
	HB, HC	GB, GC, GD		
H3/H8	GB, GC, GD	FB, FC, FD, GB, GC, GD	CN – CZ (H8)	5CK – 5CU (H8)
	HB, HC	GB, GC, GD	CN-CB (H3)	5CK – 5CX (H3)
J1 J2	GF, GH	GB, GC, GD, HB, HC, HD	CW – DH	5CS – 5DH
	HF, HH	GB, GC, GD, HB, HC, HD, JB, JC, JD		
	JF, JG, JH	HB, HC, HD, JB, JC, JD		
	TF, TG, TH	TB, TC, TD		
J3	HF, HH	HB, HC, HD, JB, JC, JD	DA – DJ	5DA – 5DH
	JF, JG, JH	HB, HC, HD, JB, JC, JD		
	TF, TG, TH	TB, TC, TD, VB, VC, VD	DA – DJ	5DA – 5DH
	VF, VH	TB, TC, TD, VB, VC, VD		
	WF, WH	VB, VC, VD		
J4	JF, JG, JH	JB, JC, JD	DA – DJ	5DA – 5DH
	TF, TG, TH	TB, TC, TD, VB, VC, VD	DA – DJ	5DA - 5OJ
	VF, VH	TB, TC, TD, VB, VC, VD		
	WF, WH	VB, VC, VD		

NOMENCLATURE



IMPORTANT!

READ BEFORE PROCEEDING!

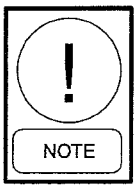
GENERAL SAFETY GUIDELINES

This equipment is a relatively complicated apparatus. During installation, operation maintenance or service, individuals may be exposed to certain components or conditions including, but not limited to: refrigerants, oils, materials under pressure, rotating components, and both high and low voltage. Each of these items has the potential, if misused or handled improperly, to cause bodily injury or death. It is the obligation and responsibility of operating/service personnel to identify and recognize these inherent hazards, protect themselves, and proceed safely in completing their tasks. Failure to comply with any of these requirements could result in serious damage to the equipment and the property in which it is situated, as well as severe personal injury or death to themselves and people at the site.

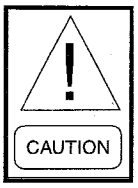
This document is intended for use by owner-authorized operating/service personnel. It is expected that this individual posseses independent training that will enable them to perform their assigned tasks properly and safely. It is essential that, prior to performing any task on this equipment, this individual shall have read and understood this document and any referenced materials. This individual shall also be familiar with and comply with all applicable governmental standards and regulations pertaining to the task in question.

SAFETY SYMBOLS

The following symbol is used in this document to alert the reader to areas of potential hazard:



NOTE is used to highlight additional information which may be helpful to you.



CAUTION identifies a hazard which could lead to damage to the machine, damage to other equipment and/or environmental pollution. Usually an instruction will be given, together with a brief explanation.

CHANGEABILITY OF THIS DOCUMENT

In complying with YORK's policy for continuous product improvement, the information contained in this document is subject to change without notice. While YORK makes no commitment to update or provide current information automatically to the manual owner, that information, if applicable, can be obtained by contacting the nearest YORK Applied Systems Service office.

It is the responsibility of operating/service personnel to verify the applicability of these documents to the equipment in question. If there is any question in the mind of operating/service personnel as to the applicability of these documents, then prior to working on the equipment, they should verify with the owner whether the equipment has been modified and if current literature is available.

TABLE OF CONTENTS

DIMENSIONS 6
CHILLER WEIGHTS 10
MOTOR WEIGHTS 14
INTRODUCTION 15
General 15
Field Assembed Units Only 15
Shipment 15
Inspection – Damage – Shortage 16
Chiller Data Plate 16
Rigging 16
Location 17
Open Motors 18
Foundation 18
Clearance 18
Isolators 19
INSTALLATION 23
Rigging Unit to Final Location 23
Locating and Installing Isolator Pads 23
Checking the Isolation Pad Deflection 23
Leveling the Unit 23
Installing Optional Spring Isolators 23
Piping Connections 23
Cooler and Condenser Water Piping 24
Refrigerant Relief Piping 25
Unit Piping 25
Control Panel Positioning 26
Control Wiring 26
Power Wiring 26
Insulation 27
Installation Check – Request for Start-up Service 27

LIST OF FIGURES

Fig. 1 – YK Model E Chiller 5
Fig. 2 – Dimensions (G & H Compressors – Ft.-In.) 6
Fig. 3 – Dimensions (G & H Compressors – Metric) 7
Fig. 4 – Dimensions (J Compressors – Ft.-In.) 8
Fig. 5 – Dimensions (J Compressors – Metric) 9
Fig. 6 – Unit Weights (G & H Compressors) 10
Fig. 7 – Unit Weights (J Compressors) 12
Fig. 8 – Motor Weights 14
Fig. 9 – Rigging 17
Fig. 10 – Neoprene Isolators (Ft.-In.) 19
Fig. 11 – Neoprene Isolators (Metric) 20
Fig. 12 – Spring Isolators (Ft.-In.) 21
Fig. 13 – Spring Isolators (Metric) 22
Fig. 14 – Schematic for a Typical Piping Arrangement 24
Fig. 15 – Typical Refrigerant Vent Piping 25
Fig. 16 – Control Panel Positioning 26
Fig. 17 – Motor Connections (E.M. Starter) 27

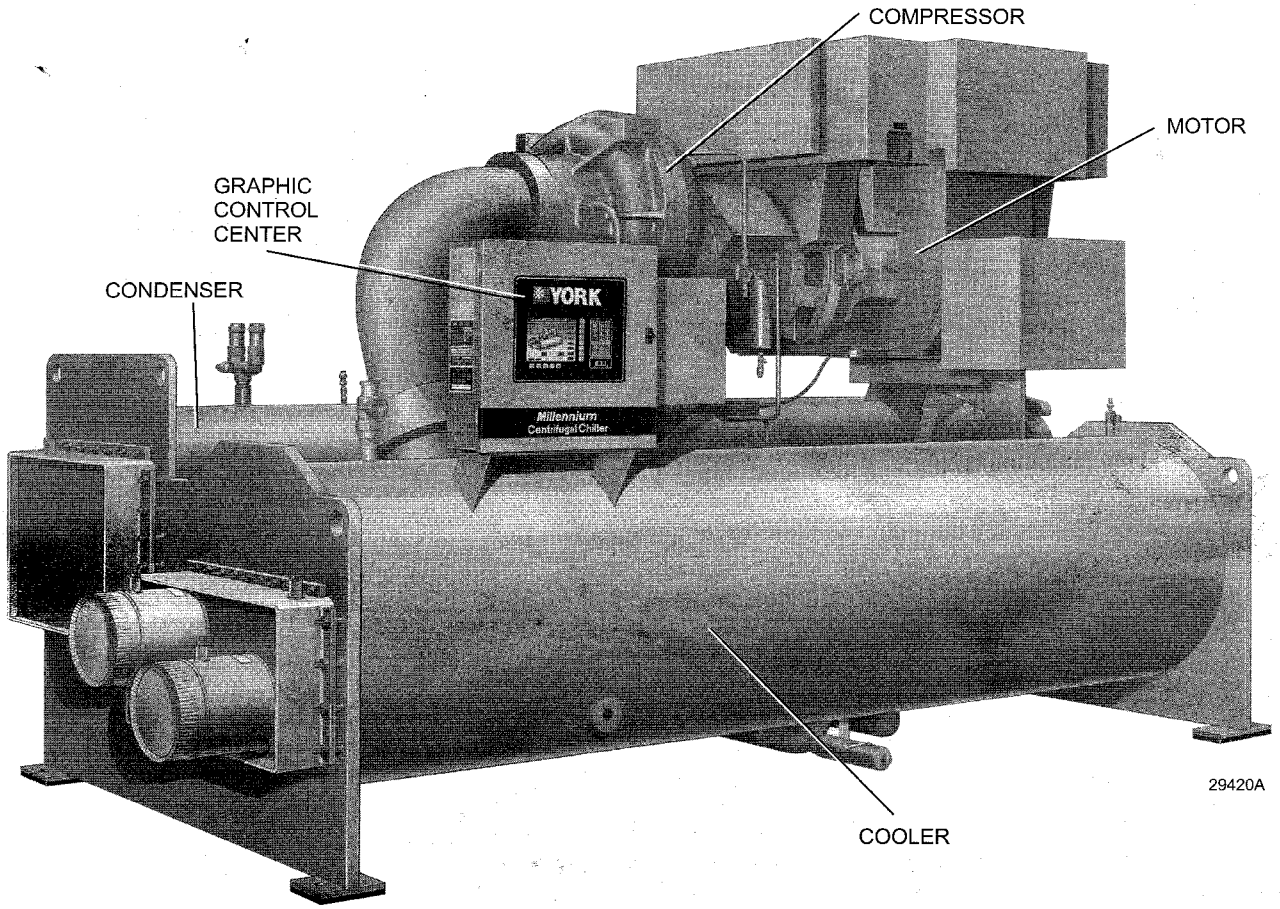
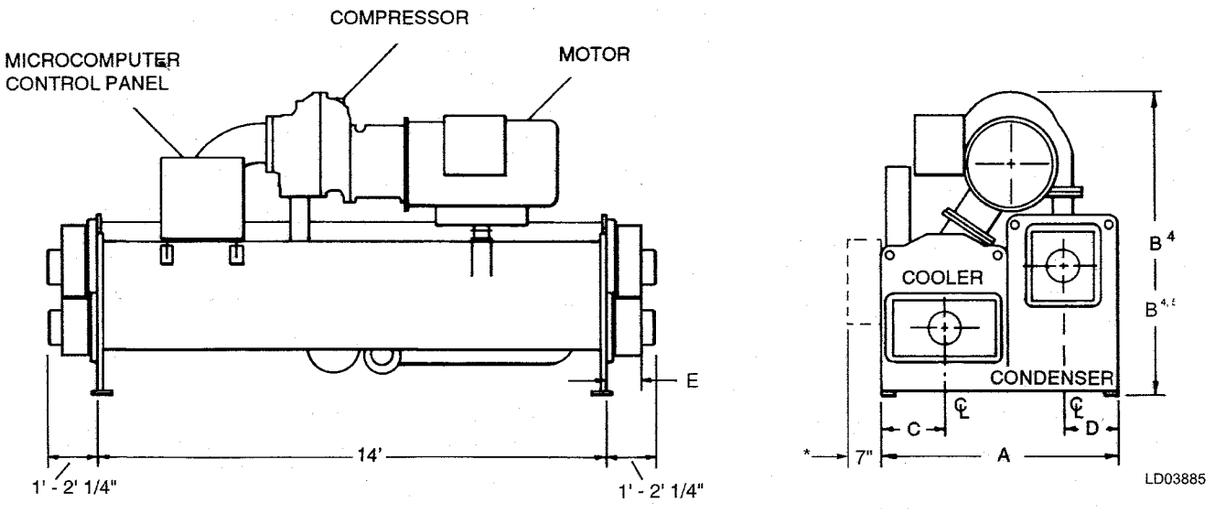


FIG. 1 – MODEL YK MILLENNIUM CHILLER



* Operating Location of Control Center on Cooler Codes G thru W.

G4 COMPRESSORS
COOLER – CONDENSER SHELL CODES

	C–C	C–D	D–C	D–D	D–E
A	6'–1"	6'–1"	6'–4"	6'–4"	6'–4"
B	7'–10-1/2"	8'–0-1/2"	7'–10-1/2"	8'–0-1/2"	8'–1"
C	1'–7"	1'–7"	1'–8-1/2"	1'–8-1/2"	1'–8-1/2"
D	1'–5-1/2"	1'–5-1/2"	1'–5-1/2"	1'–5-1/2"	1'–5-1/2"
E	0'–5-5/8"	0'–5-5/8"	0'–5-5/8"	0'–5-5/8"	0'–5-5/8"

H0/H4 COMPRESSORS
COOLER – CONDENSER SHELL CODES

	D–D	D–E	E–D	E–E	E–F	F–E	F–F
A	6'–4"	6'–4"	6'–6"	6'–6"	6'–9"	6'–11"	7'–2"
B	8'–0-1/2"	8'–1"	8'–0-1/2"	8'–1"	8'–3-1/2"	8'–1"	8'–3-1/2"
C	1'–8-1/2"	1'–8-1/2"	1'–9-1/2"	1'–9-1/2"	1'–9-1/2"	2'–0"	2'–0"
D	1'–5-1/2"	1'–5-1/2"	1'–5-1/2"	1'–5-1/2"	1'–7"	1'–5-1/2"	1'–7"
E	0'–5-5/8"	0'–5-5/8"	0'–5-7/8"	0'–5-7/8"	0'–5-7/8"	0'–5-7/8"	0'–5-7/8"

H1/H5 COMPRESSORS
COOLER – CONDENSER SHELL CODES

	E–E	E–F	F–E	F–F	F–G	G–F	G–G
A	6'–6"	6'–9"	6'–11"	7'–2"	7'–6"	7'–4-1/2"	7'–8-1/2"
B	8'–1"	8'–3-1/2"	8'–1"	8'–3-1/2"	8'–7-1/2"	8'–3-1/2"	8'–7-1/2"
C	1'–9-1/2"	1'–9-1/2"	2'–0"	2'–0"	2'–0"	2'–1-1/4"	2'–1-1/4"
D	1'–5-1/2"	1'–7"	1'–5-1/2"	1'–7"	1'–9"	1'–7"	1'–9"
E	0'–5-7/8"	0'–5-7/8"	0'–5-7/8"	0'–5-7/8"	0'–5-7/8"	0'–6-1/4"	0'–6-1/4"

H2/H6 COMPRESSORS
COOLER – CONDENSER SHELL CODES

	F–F	F–G	G–F	G–G	H–G
A	7'–2"	7'–6"	7'–4-1/2"	7'–8-1/2"	8'–0"
B	8'–6-3/4"	8'–10-1/4"	8'–6-3/4"	8'–10-1/4"	8'–10-1/4"
C	2'–0"	2'–0"	2'–1-1/4"	2'–1-1/4"	2'–3"
D	1'–7"	1'–9"	1'–7"	1'–9"	1'–9"
E	0'–5-7/8"	0'–5-7/8"	0'–6-1/4"	0'–6-1/4"	0'–6-1/4"

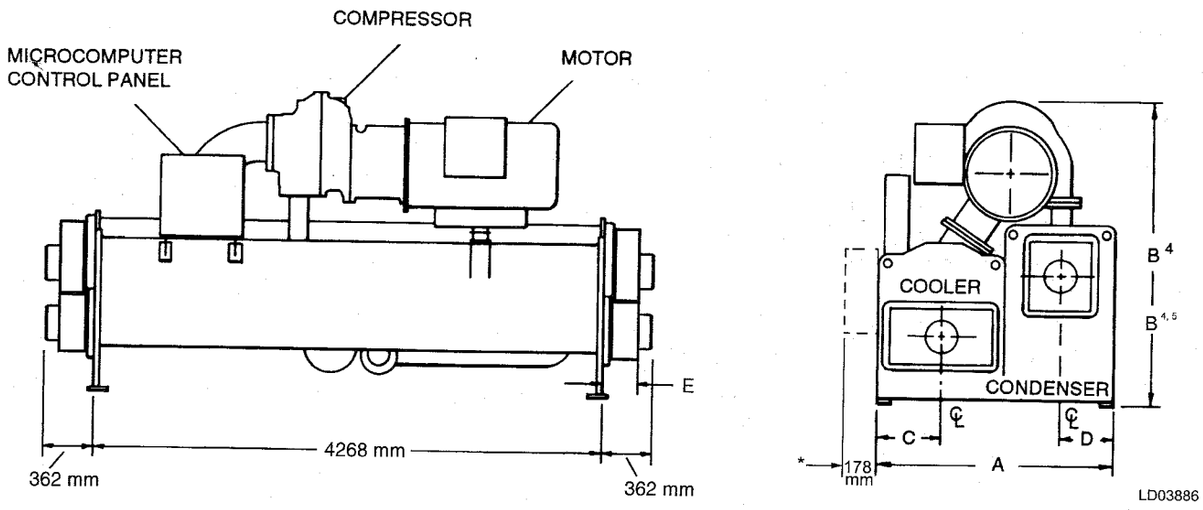
H3/H8 COMPRESSORS
COOLER – CONDENSER SHELL CODES

	G–F	G–G	H–G
A	7'–4-1/2"	7'–8-1/2"	8'–0"
B	8'–6-3/4"	8'–10-1/4"	8'–10-1/4"
C	2'–1-1/4"	2'–1-1/4"	2'–3"
D	1'–7"	1'–9"	1'–9"
E	0'–6-1/4"	0'–6-1/4"	0'–6-1/4"

NOTES:

1. All dimensions are approximate. Certified dimensions are available on request.
2. For compact water boxes (shown above), determine overall unit length by adding water box depth to tube sheet length.
3. Water nozzles can be located on either end of unit. Add 1/2" to nozzle length for flanges connections.
4. To determine overall height, add 7/8" for isolators.
5. Use of motors with motor hoods may increase overall unit dimensions.

FIG. 2 – DIMENSIONS – G & H COMPRESSOR UNITS (FT.–IN.)



* Operating Location of Control Center on Cooler Codes G thru W.

G4 COMPRESSORS
COOLER – CONDENSER SHELL CODES

	C–C	C–D	D–C	D–D	D–E
A	1854	1854	1930	1930	1930
B	2400	2451	2400	2451	2464
C	483	483	521	521	521
D	445	445	445	445	445
E	143	143	143	143	143

H0/H4 COMPRESSORS
COOLER – CONDENSER SHELL CODES

	D–D	D–E	E–D	E–E	E–F	F–E	F–F
A	1930	1930	1981	1981	2057	2108	2184
B	2451	2464	2451	2464	2527	2462	2527
C	521	521	546	546	546	610	610
D	445	445	445	445	483	445	483
E	143	143	149	149	149	149	149

H1/H5 COMPRESSORS
COOLER – CONDENSER SHELL CODES

	E–E	E–F	F–E	F–F	F–G	G–F	G–G
A	1981	2057	2108	2184	2286	2248	2350
B	2464	2527	2462	2527	2324	2527	2324
C	546	546	610	610	610	641	641
D	445	483	445	483	533	483	533
E	149	149	149	149	149	159	159

H2/H6 COMPRESSORS
COOLER – CONDENSER SHELL CODES

	F–F	F–G	G–F	G–G	H–G
A	2184	2286	2248	2350	2438
B	2527	2324	2527	2324	2691
C	610	610	641	641	686
D	483	533	483	533	533
E	149	149	159	159	159

H3/H8 COMPRESSORS
COOLER – CONDENSER SHELL CODES

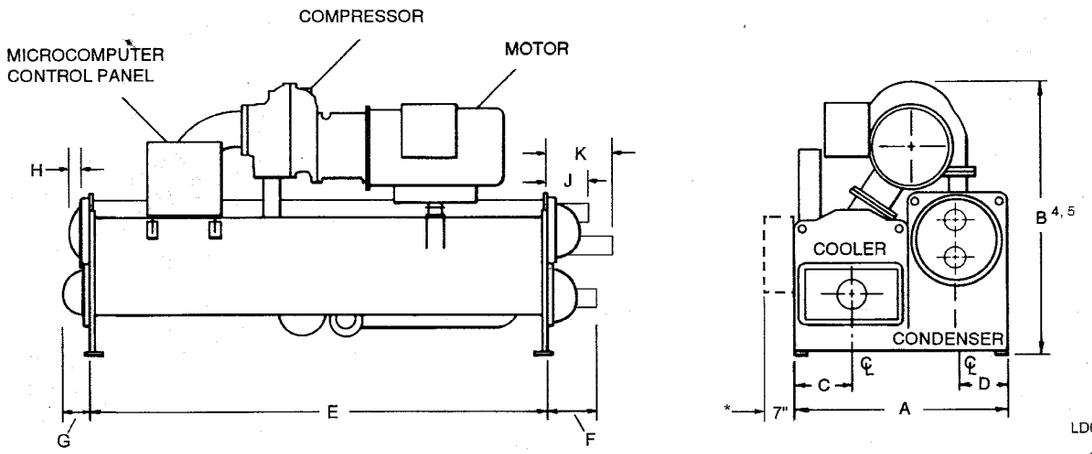
	G–F	G–G	H–G
A	2248	2350	2438
B	2527	2324	2691
C	641	641	686
D	483	533	533
E	159	159	159

NOTES:

1. All dimensions are approximate. Certified dimensions are available on request.
2. For compact water boxes (shown above), determine overall unit length by adding water box depth to tube sheet length.
3. Water nozzles can be located on either end of unit. Add 13 mm to nozzle length for flanges connections.
4. To determine overall height, add 22 mm for isolators.
5. Use of motors with motor hoods may increase overall unit dimensions.

FIG. 3 – DIMENSIONS – G & H COMPRESSOR UNITS (mm)

J COMPRESSOR UNITS



* Operating Location of Control Center on Cooler Codes G thru W.

J1/J2 COMPRESSORS
COOLER – CONDENSER SHELL CODES

	G-G	G-H	H-G	H-H	H-J	J-H	J-J	T-T
A	7'–6"	7'–10"	7'–10-1/2"	8'–2-1/2"	8'–6-1/2"	8'–11"	9'–1"	9'–1"
B	9'–3-3/4"	9'–9-3/4"	9'–3-3/4"	9'–9-3/4"	9'–9-3/4"	9'–9-3/4"	9'–9-3/4"	9'–9-1/2"
C	2'–0"	2'–0"	2'–2-1/4"	2'–2-1/4"	2'–2-1/4"	2'–5-1/2"	2'–5-1/2"	2'–5-1/2"
D	1'–9"	1'–11"	1'–9"	1'–11"	2'–1"	1'–11"	2'–1"	2'–1"
E	14'–0"	14'–0"	14'–0"	14'–0"	14'–0"	14'–0"	14'–0"	16'–0"
F	1'–11-3/4"	1'–11-3/4"	1'–11-3/4"	1'–11-3/4"	1'–11-3/4"	1'–11-3/4"	1'–11-3/4"	1'–11-3/4"
G	1'–2-3/4"	1'–2-3/4"	1'–2-3/4"	1'–2-3/4"	1'–2-3/4"	1'–2-3/4"	1'–2-3/4"	1'–2-3/4"

J3 COMPRESSORS
COOLER – CONDENSER SHELL CODES

	H-H	H-J	J-H
A	8'–2-1/2"	8'–6-1/2"	8'–9"
B	9'–8-3/4"	10'–0-3/4"	9'–8-3/4"
C	2'–2-1/4"	2'–2-1/4"	2'–5-1/2"
D	1'–11"	2'–1"	1'–11"
E	14'–0"	14'–0"	14'–0"
F	1'–11-3/4"	1'–11-3/4"	1'–11-3/4"
G	1'–2-3/4"	1'–2-3/4"	1'–2-3/4"

J3/J4 COMPRESSORS
COOLER – CONDENSER SHELL CODES

	J-J	T-T	T-V	V-T	V-V	W-V
A	9'–1"	9'–1"	9'–6"	9'–1"	9'–6"	9'–11"
B	10'–0-3/4"	10'–0-3/4"	10'–5-3/4"	10'–0-3/4"	10'–5-3/4"	10'–5-3/4"
C	2'–5-1/2"	2'–5-1/2"	2'–5-1/2"	2'–5-1/2"	2'–5-1/2"	2'–8"
D	2'–1"	2'–1"	2'–3-1/2"	2'–1"	2'–3-1/2"	2'–3-1/2"
E	14'–0"	16'–0"	16'–0"	16'–0"	16'–0"	16'–0"
F	1'–11-3/4"	1'–11-3/4"	1'–11-3/4"	1'–11-3/4"	1'–11-3/4"	2'–0-3/4"
G	1'–2-3/4"	1'–2-3/4"	1'–2-3/4"	1'–2-3/4"	1'–2-3/4"	1'–4-1/2"

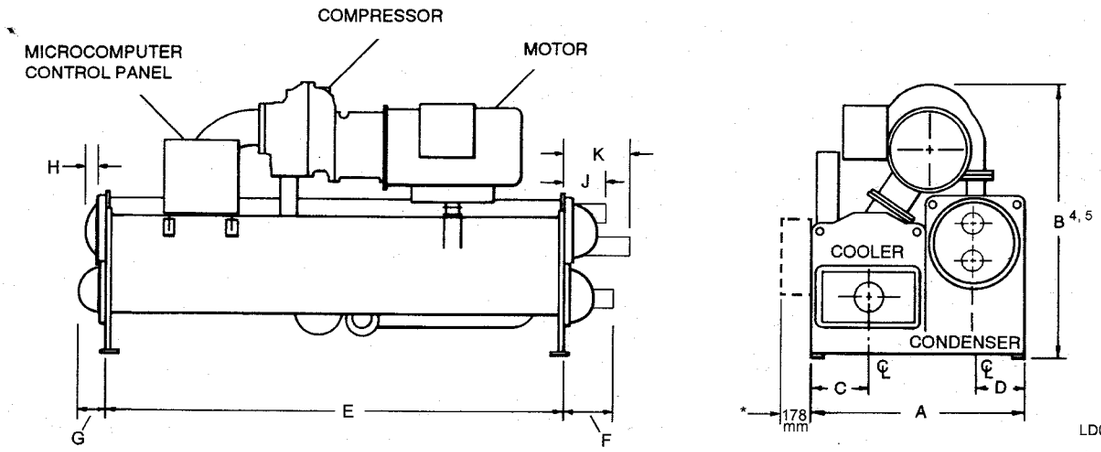
COND. CODE	H	1 PASS		2 PASS		3 PASS	
		J	K	J	K	J	K
G	5-7/8"	1'–1-3/4"	1'–1-3/4"	1'–1-3/4"	1'–1-3/4"	1'–1-3/4"	1'–1-3/4"
H	11-5/8"	1'–8-7/8"	1'–8-7/8"	1'–6-1/8"	1'–6-1/8"	1'–4-5/8"	1'–8"
J	1'–0-1/2"	1'–9-5/8"	1'–9-5/8"	1'–7-1/2"	1'–7-1/2"	1'–6-3/4"	1'–10"
T	1'–0-1/2"	1'–9-5/8"	1'–9-5/8"	1'–7-1/2"	1'–7-1/2"	1'–6-3/4"	1'–10"
V	1'–1-5/8"	1'–11"	1'–11"	1'–10"	1'–10"	1'–7-1/2"	1'–11-1/4"

NOTES:

1. All dimensions are approximate. Certified dimensions are available on request.
2. For compact water boxes (shown above), determine overall unit length by adding water box depth to tube sheet length.
3. Water nozzles can be located on either end of unit. Add 1/2" to nozzle length for flanges connections.
4. To determine overall height, add 7/8" for isolators.
5. Use of motors with motor hoods may increase overall unit dimensions.

FIG. 4 – DIMENSIONS – J COMPRESSOR UNITS (FT.–IN.)

J COMPRESSOR UNITS



* Operating Location of Control Center on Cooler Codes G thru W.

J1/J2 COMPRESSORS
COOLER – CONDENSER SHELL CODES

	G-G	G-H	H-G	H-H	H-J	J-H	J-J	T-T
A	2286	2388	2400	2502	2604	2718	2769	2769
B	2838	2991	2838	2991	2991	2991	2991	2985
C	610	610	667	667	667	749	749	749
D	533	584	533	584	635	584	635	635
E	4267	4267	4267	4267	4267	4267	4267	4877
F	603	603	603	603	603	603	603	603
G	375	375	375	375	375	375	375	375

J3 COMPRESSORS
COOLER – CONDENSER SHELL CODES

	H-H	H-J	J-H
A	2502	2604	2667
B	2965	3067	2965
C	667	667	749
D	584	635	584
E	4267	4267	4267
F	603	603	603
G	375	375	375

J3/J4 COMPRESSORS
COOLER – CONDENSER SHELL CODES

	J-J	T-T	T-V	V-T	V-V	W-V
A	2769	2769	2896	2769	2896	3023
B	3067	3067	3194	3067	3194	3194
C	749	749	749	749	749	813
D	635	635	699	635	699	699
E	4267	4877	4877	4877	4877	4877
F	603	603	603	603	603	629
G	375	375	375	375	375	419

COND. CODE	H	1 PASS		2 PASS		3 PASS	
		J	K	J	K	J	K
G	149	349	349	349	349	349	349
H	295	530	530	460	460	422	508
J	318	549	549	495	495	476	559
T	318	549	549	495	495	476	559
V	346	584	584	559	559	495	591

NOTES:
1. All dimensions are approximate. Certified dimensions are available on request.
2. For compact water boxes (shown above), determine overall unit length by adding water box depth to tube sheet length.
3. Water nozzles can be located on either end of unit. Add 1/2" to nozzle length for flanges connections.
4. To determine overall height, add 22 mm for isolators.
5. Use of motors with motor hoods may increase overall unit dimensions.

FIG. 5 – DIMENSIONS – J COMPRESSOR UNITS (mm)

FIG. 6 – UNIT WEIGHTS LESS MOTOR (G & H COMPRESSORS)

SHELLS		SHIPPING WEIGHT		OPERATING WEIGHT		REFRIGERANT CHARGE		LOADING PER ISOLATOR	
		(LBS)	(KG)	(LBS)	(KG)	(LBS)	(KG)	(LBS)	(KG)
C-C	CBCB	16670	7580	20000	9090	1350	612	5000	2273
	CBCC	16730	7600	20100	9140	1350	612	5025	2285
	CBCD	16870	7670	20200	9180	1350	612	5050	2295
	CCCB	16900	7680	20300	9230	1350	612	5075	2308
	CCCC	16960	7710	20300	9230	1350	612	5075	2308
	CCCD	17100	7770	20500	9320	1350	612	5125	2330
	CDCB	17170	7800	20500	9320	1350	612	5125	2330
	CDCC	17230	7830	20600	9360	1350	612	5150	2340
	CDCD	17370	7900	20700	9410	1350	612	5175	2353
	CECB	17430	7920	20800	9450	1350	612	5200	2363
	CECC	17490	7950	20900	9500	1350	612	5225	2375
	CECD	17630	8010	21000	9550	1350	612	5250	2388
C-D	CBDB	17060	7750	20400	9270	1400	635	5100	2318
	CBDC	17070	7760	20400	9270	1400	635	5100	2318
	CBDD	17360	7890	20700	9410	1400	635	5175	2353
	CCDB	17300	7860	20700	9410	1400	635	5175	2353
	CCDC	17310	7870	20700	9410	1400	635	5175	2353
	CCDD	17590	8000	21000	9550	1400	635	5250	2388
	CDDB	17570	7990	20900	9500	1400	635	5225	2375
	CDDC	17580	7990	21000	9550	1400	635	5250	2388
	CDDD	17860	8120	21200	9640	1400	635	5300	2410
	CEDB	17820	8100	21200	9640	1400	635	5300	2410
	CEDC	17830	8100	21200	9640	1400	635	5300	2410
	CEDD	18120	8240	21500	9770	1400	635	5375	2443
D-C	DDCB	17600	8000	21000	9550	1420	644	5250	2388
	DDCC	17660	8030	21000	9550	1420	644	5250	2388
	DDCD	17800	8090	21200	9640	1420	644	5300	2410
	DECB	17750	8070	21100	9590	1420	644	5275	2398
	DECC	17820	8100	21200	9640	1420	644	5300	2410
	DECD	17960	8160	21300	9680	1420	644	5325	2420
D-D	DBDB	17420	7920	20800	9450	1470	667	5200	2363
	DBDC	17430	7920	20800	9450	1470	667	5200	2363
	DBDD	17710	8050	21100	9590	1470	667	5275	2398
	DCDB	17660	8030	21000	9550	1470	667	5250	2388
	DCDC	17670	8030	21000	9550	1470	667	5250	2388
	DCDD	17960	8160	21300	9680	1470	667	5325	2420
	DDDB	17990	8180	21400	9730	1470	667	5350	2433
	DDDC	18000	8180	21400	9730	1470	667	5350	2433
	DDDD	18290	8310	21700	9860	1470	667	5425	2465
	DEDB	18150	8250	21500	9770	1470	667	5375	2443
	DEDC	18160	8250	21500	9770	1470	667	5375	2443
	DEDD	18450	8390	21800	9910	1470	667	5450	2478
D-E	DBEB	18680	8490	22400	10180	1590	721	5600	2545
	DBEC	18890	8590	22700	10320	1590	721	5675	2580
	DBED	19000	8640	22800	10360	1590	721	5700	2590
	DCEB	18920	8600	22700	10320	1590	721	5675	2580
	DCEC	19130	8700	22900	10410	1590	721	5725	2603
	DCED	19240	8750	23000	10450	1590	721	5750	2613
	DDEB	19250	8750	23000	10450	1590	721	5750	2613
	DDEC	19470	8850	23200	10550	1590	721	5800	2638
	DDED	19570	8900	23300	10590	1590	721	5825	2648
	DEEB	19410	8820	23200	10550	1590	721	5800	2638
	DEEC	19620	8920	23400	10640	1590	721	5850	2660
	DEED	19730	8970	23500	10680	1590	721	5875	2670

FIG. 6 – UNIT WEIGHTS LESS MOTOR (G & H COMPRESSORS) (Cont'd)

SHELLS		SHIPPING WEIGHT		OPERATING WEIGHT		REFRIGERANT CHARGE		LOADING PER ISOLATOR	
		(LBS)	(KG)	(LBS)	(KG)	(LBS)	(KG)	(LBS)	(KG)
E-D	ECDB	18800	8550	22600	10270	1590	721	5650	2568
	ECDC	18810	8550	22700	10320	1590	721	5675	2580
	ECDD	19100	8680	22900	10410	1590	721	5725	2603
	EDDB	19050	8660	22900	10410	1590	721	5725	2603
	EDDC	19060	8660	22900	10410	1590	721	5725	2603
	EDDD	19350	8800	23200	10550	1590	721	5800	2638
E-E	EBEB	19810	9000	24000	10910	1690	767	6000	2728
	EBEC	20020	9100	24300	11050	1690	767	6075	2763
	EBED	20130	9150	24400	11090	1690	767	6100	2773
	ECEB	20050	9110	24300	11050	1690	767	6075	2763
	ECEC	20260	9210	24500	11140	1690	767	6125	2785
	ECED	20370	9260	24600	11180	1690	767	6150	2795
	EDEB	20300	9230	24500	11140	1690	767	6125	2785
	EDEC	20510	9320	24700	11230	1690	767	6175	2808
	EDED	20620	9370	24900	11320	1690	767	6225	2830
E-F	EBFB	21140	9610	25800	11730	1790	812	6450	2933
	EBFC	21260	9660	25900	11770	1790	812	6475	2943
	EBFD	21440	9750	26100	11860	1790	812	6525	2965
	ECFB	21380	9720	26000	11820	1790	812	6500	2955
	ECFC	21500	9770	26100	11860	1790	812	6525	2965
	ECFD	21680	9850	26300	11950	1790	812	6575	2988
	EDFB	21630	9830	26300	11950	1790	812	6575	2988
	EDFC	21750	9890	26400	12000	1790	812	6600	3000
	EDFD	21930	9970	26600	12090	1790	812	6650	3023
F-E	FCEB	21220	9650	25900	11770	1900	862	6475	2943
	FCEC	21430	9740	26200	11910	1900	862	6550	2978
	FCED	21530	9790	26300	11950	1900	862	6575	2988
	FDEB	21470	9760	26200	11910	1900	862	6550	2978
	FDEC	21680	9850	26400	12000	1900	862	6600	3000
	FDED	21790	9900	26500	12050	1900	862	6625	3013
F-F	FBFA	21550	9800	26900	12230	2020	916	6725	3058
	FBFB	21960	9980	27300	12410	2020	916	6825	3103
	FBFC	22080	10040	27400	12450	2020	916	6850	3113
	FBFD	22260	10120	27600	12550	2020	916	6900	3138
	FCFA	21860	9940	27200	12360	2020	916	6800	3090
	FCFB	22270	10120	27600	12550	2020	916	6900	3138
	FCFC	22400	10180	27800	12640	2020	916	6950	3160
	FCFD	22580	10260	27900	12680	2020	916	6975	3170
	FDFB	22530	10240	27900	12680	2020	916	6975	3170
	FDFC	22650	10300	28000	12730	2020	916	7000	3183
	FDFD	22830	10380	28200	12820	2020	916	7050	3205
F-G	FBGB	24140	10970	29900	13590	2150	975	7475	3398
	FBGC	24550	11160	30300	13770	2150	975	7575	3443
	FBGD	24820	11280	30500	13860	2150	975	7625	3465
	FCGB	24460	11120	30200	13730	2150	975	7550	3433
	FCGC	24870	11300	30600	13910	2150	975	7650	3478
	FCGD	25140	11430	30900	14050	2150	975	7725	3513
	FDGB	24720	11240	30400	13820	2150	975	7600	3455
	FDGC	25130	11420	30800	14000	2150	975	7700	3500
	FDGD	25400	11550	31100	14140	2150	975	7775	3535

FIG. 6 – UNIT WEIGHTS LESS MOTOR (G & H COMPRESSORS) (Cont'd)

SHELLS		SHIPPING WEIGHT		OPERATING WEIGHT		REFRIGERANT CHARGE		LOADING PER ISOLATOR	
		(LBS)	(KG)	(LBS)	(KG)	(LBS)	(KG)	(LBS)	(KG)
G-F	GBFA	23660	10750	29200	13270	2290	1039	7300	3318
	GBFB	24070	10940	29600	13450	2290	1039	7400	3363
	GBFC	24190	11000	29700	13500	2290	1039	7425	3375
	GBFD	24370	11080	29900	13590	2290	1039	7475	3398
	GCFA	24020	10920	29600	13450	2290	1039	7400	3363
	GCFB	24430	11100	30000	13640	2290	1039	7500	3410
	GCFC	24550	11160	30100	13680	2290	1039	7525	3420
	GCFD	24740	11250	30300	13770	2290	1039	7575	3443
	GDFA	24510	11140	30100	13680	2290	1039	7525	3420
	GDFB	24920	11330	30500	13860	2290	1039	7625	3465
	GDFC	25050	11390	30600	13910	2290	1039	7650	3478
	GDFD	25230	11470	30800	14000	2290	1039	7700	3500
G-G	GBGB	25970	11800	32500	14770	2415	1095	8125	3693
	GBGC	26380	11990	32900	14950	2415	1095	8225	3738
	GBGD	26640	12110	33200	15090	2415	1095	8300	3773
	GCGB	26330	11970	32900	14950	2415	1095	8225	3738
	GCGC	26740	12150	33300	15140	2415	1095	8325	3785
	GCGD	27010	12280	33600	15270	2415	1095	8400	3818
	GDGB	26830	12200	33400	15180	2415	1095	8350	3795
	GDGC	27240	12380	33800	15360	2415	1095	8450	3840
	GDGD	27500	12500	34100	15500	2415	1095	8525	3875
H-G	HBGB	28150	12800	35100	15950	2625	1191	8775	3988
	HBGC	28560	12980	35500	16140	2625	1191	8875	4035
	HBGD	28820	13100	35700	16230	2625	1191	8925	4058
	HCGB	28770	13080	35700	16230	2625	1191	8925	4058
	HCGC	29180	13260	36100	16410	2625	1191	9025	4103
	HCGD	29450	13390	36400	16550	2625	1191	9100	4138

FIG. 7 – UNIT WEIGHTS LESS MOTOR (J COMPRESSOR UNITS – SEE NOTE ON PAGE 14)

SHELLS		SHIPPING WEIGHT		OPERATING WEIGHT		REFRIGERANT CHARGE		LOADING PER ISOLATOR	
		(LBS)	(KG)	(LBS)	(KG)	(LBS)	(KG)	(LBS)	(KG)
G-G	GFGB	25900	11748	32050	14538	2415	1095	8013	3634
	GFGC	26330	11943	32600	14787	2415	1095	8150	3697
	GFGD	26540	12039	32900	14923	2415	1095	8225	3731
	GHGB	26290	11925	32610	14792	2415	1095	8153	3698
	GHGC	26720	12120	33320	15114	2415	1095	8330	3778
	GHGD	26930	12215	33550	15218	2415	1095	8388	3805
G-H	GFHB	27320	12392	33950	15400	2560	1161	8488	3850
	GFHC	27500	12474	34260	15540	2560	1161	8565	3885
	GFHD	27730	12578	34560	15676	2560	1161	8640	3919
	GHHB	27710	12569	34510	15654	2560	1161	8628	3913
	GHHC	27890	12651	34820	15794	2560	1161	8705	3949
	GHHD	28120	12755	36110	16379	2560	1161	9028	4095
H-G	HFGB	28020	12710	34080	15459	2625	1191	8520	3865
	HFGC	28440	12900	35480	16094	2625	1191	8870	4023
	HFGD	28650	12996	35800	16239	2625	1191	8950	4060
	HHGB	28550	12950	35630	16162	2625	1191	8908	4040
	HHGC	28980	13145	36240	16438	2625	1191	9060	4110
	HHGD	29190	13241	36570	16588	2625	1191	9143	4147
H-H	HFHB	29430	13349	36760	16674	2825	1281	9190	4169
	HFHC	29260	13272	37080	16819	2825	1281	9270	4205
	HFHD	29850	13540	37380	16956	2825	1281	9345	4239
	HHHB	29970	13594	37530	17024	2825	1281	9383	4256
	HHHC	30150	13676	37480	17001	2825	1281	9370	4250
	HHHD	30380	13780	38140	17300	2825	1281	9535	4325

FIG. 7 – UNIT WEIGHTS LESS MOTOR (J COMPRESSOR UNITS) (Cont'd) (SEE NOTE ON PAGE 13)

SHELLS		SHIPPING WEIGHT		OPERATING WEIGHT		REFRIGERANT CHARGE		LOADING PER ISOLATOR	
		(LBS)	(KG)	(LBS)	(KG)	(LBS)	(KG)	(LBS)	(KG)
H-J	HFJB	31330	14211	39280	17817	3010	1365	9820	4454
	HFJC	31750	14402	39920	18108	3010	1365	9980	4527
	HFJD	31990	14511	40250	18257	3010	1365	10063	4564
	HHJB	31870	14456	40050	18167	3010	1365	10013	4542
	HHJC	32280	14642	40680	18452	3010	1365	10170	4613
	HHJD	32520	14751	41010	18602	3010	1365	10253	4651
J-H	JFHB	32410	14701	40580	18407	3310	1501	10145	4602
	JFHC	32590	14783	40890	18548	3310	1501	10223	4637
	JFHD	32820	14887	41180	18679	3310	1501	10295	4670
	JGHB	32780	14869	41100	18643	3310	1501	10275	4661
	JGHC	32960	14951	41410	18784	3310	1501	10353	4696
	JGHD	33190	15055	41710	18920	3310	1501	10428	4730
	JHHB	33140	15032	41620	18879	3310	1501	10405	4720
	JHHC	33330	15118	41940	19024	3310	1501	10485	4756
	JHHD	33530	15209	42240	19160	3310	1501	10560	4790
J-J	JFJB	34310	15563	43100	19550	3495	1585	10775	4888
	JFJC	34720	15749	43730	19836	3495	1585	10933	4959
	JGJD	34960	15858	44050	19981	3495	1585	11013	4995
	JGJB	34880	15822	43620	19786	3495	1585	10905	4947
	JGJC	35090	15917	44250	20072	3495	1585	11063	5018
	JGJD	35330	16026	44580	20221	3495	1585	11145	5055
	JHJB	35040	15894	44140	20022	3495	1585	11035	5005
	JHJC	35450	16080	44780	20312	3495	1585	11195	5078
	JHJD	35700	16194	45110	20462	3495	1585	11278	5115
T-T	TFTB	37260	16901	47230	21424	3995	1812	11808	5356
	TFTC	37750	17123	47970	21759	3995	1812	11993	5440
	TFTD	38010	17241	48330	21922	3995	1812	12083	5481
	TGTB	37680	17092	47630	21605	3995	1812	11908	5401
	TGTC	38170	17314	48570	22031	3995	1812	12143	5508
	TGTD	38440	17436	48940	22199	3995	1812	12235	5550
	THTB	38110	17287	48440	21972	3995	1812	12110	5493
	THTC	38600	17509	49180	22308	3995	1812	12295	5577
	THTD	38860	17627	49540	22471	3995	1812	12385	5618
	TFVB	41430	18793	52410	23773	4290	1946	13103	5943
	TFVC	41630	18883	52780	23941	4290	1946	13195	5985
	TFVD	42450	19255	53910	24454	4290	1946	13478	6113
T-V	TGVB	41860	18988	53020	24050	4290	1946	13255	6012
	TGVC	42060	19078	53390	24218	4290	1946	13348	6054
	TGVD	42880	19450	54520	24730	4290	1946	13630	6183
	THVB	42280	19178	53620	24322	4290	1946	13405	6081
	THVC	42480	19269	53990	24490	4290	1946	13498	6122
	THVD	43300	19641	56120	25456	4290	1946	14030	6364
V-T	VFTB	39620	17972	50580	22943	3820	1733	12645	5736
	VFTC	40110	18194	51320	23279	3820	1733	12830	5820
	VFTD	40380	18316	51690	23447	3820	1733	12923	5862
	VHTB	40220	18244	51430	23329	3820	1733	12858	5832
	VHTC	40700	18462	52170	23664	3820	1733	13043	5916
	VHTD	40970	18584	52540	23832	3820	1733	13135	5958
V-V	VFVB	42700	19369	54670	24798	4150	1882	13668	6200
	VFVC	42900	19459	55040	24966	4150	1882	13760	6242
	VFVD	43720	19831	56170	25479	4150	1882	14043	6370
	VHVB	43290	19636	55520	25184	4150	1882	13880	6296
	VHVC	43490	19727	55880	25347	4150	1882	13970	6337
	VHVD	44310	20099	57010	25860	4150	1882	14253	6465
W-V	WFVB	46180	20947	59850	27148	4460	2023	14963	6787
	WFVC	46380	21038	60210	27311	4460	2023	15053	6828
	WFVD	47200	21410	61340	27824	4460	2023	15335	6956
	WHVB	47550	21569	61790	28028	4460	2023	15448	7007
	WHVC	47740	21655	62150	28191	4460	2023	15538	7048
	WHVD	48570	22031	63290	28708	4460	2023	15823	7177

FIG. 8 – MOTOR WEIGHTS

LOW VOLTAGE

MOTOR CODE		WEIGHT	WEIGHT
60 HZ	50 HZ	(LBS)	(KGS)
CH	—	940	427
CJ	5CE	940	427
CK	5CF	1440	653
CL	5CG	1440	653
CM	5CH	1700	771
CN	5CI	1700	771
CP	5CJ	1700	771
CR	5CK	1700	771
CS	5CL	2635	1195
CT	5CM	2635	1195
CU	5CN	2635	1195
CV	5CO	2635	1195
CW	5CP	2930	1329
CX	5CQ	2930	1329
CY	5CR	2930	1329
CZ	5CS	2930	1329
CA	5CT	5750	2608
CB	5CU	5750	2608
DA	5CV	5750	2608
DB	5CW	6800	3084
DB	5CX	6800	3084
—	5DA	7300	3311
—	5DB	7300	3311

HIGH VOLTAGE

MOTOR CODE		WEIGHT	WEIGHT
60 HZ	50 HZ	(LBS)	(KGS)
CH	—	2670	1211
CJ	5CE	2670	1211
CK	5CF	3100	1406
CL	5CG	3100	1406
CM	5CH	3100	1406
CN	5CI	3100	1406
CP	5CJ	3700	1678
CR	5CK	3700	1678
CS	5CL	3700	1678
CT	5CM	3700	1678
CU	5CN	3700	1678
CV	5CO	4500	2041
CW	5CP	4500	2041
CX	5CQ	4500	2041
CY	5CR	4500	2041
CZ	5CS	4500	2041
CA	5CT	5800	2630
CB	5CU	5800	2630
—	5CV	5800	2630
DA	5CW	6800	3084
DC	5DA	7050	3198
—	5DB	7300	3311
DD	5DC	7300	3311
DE	5DD	7300	3311
DF	5DE	7500	3402
DH	5DF	7500	3402
DJ	5DG	7900	3583
—	5DH	7900	3583
—	5OJ	14000	6350

NOTE:

WEIGHTS (See Pages 12 & 13). Weights for J Compressor Units (Fig. 7) for Shell Codes G-G through T-T are based on J1/J2 Compressors. Add 1000 lb. (454 kg.) to Shipping Weight and Operating Weight, and 250 lb. (113 kg) to Loading Per Isolator if J3/J4 Compressor is furnished. Weight for Shell Codes T-V through W-V are based on J3/J4 Compressors.

INTRODUCTION

GENERAL

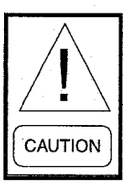
This instruction describes the installation of a MODEL YK Millennium Liquid Chilling Unit. This unit is shipped as a single factory assembled, piped, wired package, requiring a minimum of field labor to make chilled water connections, condenser water connections, refrigerant atmospheric relief connections, and electrical power connections. (Refrigerant and oil charges shipped separately unless optional condensor isolation valves are ordered.)

Chillers can also be shipped dismantled when required by rigging conditions, but generally it is more economical to enlarge access openings to accommodate the factory assembled unit. Chillers shipped dismantled MUST be field assembled under the supervision of a YORK representative, but otherwise installation will be as described in this instruction.

FIELD ASSEMBLED UNITS ONLY

Use Form 160.54-N3 in conjunction with this installation instruction. This instruction will be furnished with all units that are to be field assembled. Extra copies may be ordered from the York Publication Distribution Center.

The services of a YORK representative will be furnished to check the installation, supervise the initial start-up and operation of all chillers installed within Continental United States.



The YORK Warranty may be voided if the following restrictions are not adhered to:

1. ***No valves or connections should be opened under any circumstances because such action will result in loss of the factory nitrogen charge.***
2. ***Do not dismantle or open the chiller for any reason except under the supervision of a YORK representative.***
3. ***When units are shipped dismantled, notify the nearest YORK office in ample time for a YORK representative to supervise rigging the unit to its operating position and the assembly of components.***
4. ***Do not make final power supply connections to the compressor motor or control center.***
5. ***Do not charge the compressor with oil.***
6. ***Do not charge the unit with refrigerant.***
7. ***Do not attempt to start the system.***
8. ***Do not run hot water (110°F max.) or steam through the cooler or condenser at any time.***

SHIPMENT

The chiller may be ordered and shipped in any of the following forms:

Form 1 – Factory Assembled Unit, complete with motor, refrigerant and oil charges.

1. The motor/compressor assembly mounted, with all necessary interconnecting piping assembled. MicroComputer Control Center is mounted on the unit. Complete unit factory leak tested, evacuated and charged with R-134A.

   An optional Solid State Starter or Variable Speed Drive can be factory mounted and wired.

2. Miscellaneous material – Four (4) vibration isolation pads (or optional spring isolators and brackets).

Form 2 – Factory Assembled Unit, complete with motor (refrigerant and oil charges shipped separately).

1. The motor/compressor assembly mounted, with all necessary interconnecting piping assembled. MicroComputer Control Center is mounted on the unit. Complete unit factory leak tested, evacuated and charged with holding charge of nitrogen.

   An optional Solid State Starter or Variable Speed Drive can be factory mounted and wired.

2. Miscellaneous material – Four (4) vibration isolation pads (or optional spring isolators and brackets).

Form 3 – Driveline Separate From Shells – Shipped as three major assemblies. Unit first factory assembled, refrigerant piped, wired and leak tested; then dismantled for shipment. Compressor/motor assembly removed from shells

and skidded. Cooler/condenser is not skidded.

All wiring integral with compressor is left on it, and all conduit is left on shell. All openings on compressor, oil separator, and shell are closed and charged with dry nitrogen (2 to 3 PSIG).

Miscellaneous packaging of control center, tubing, water temperature controls, wiring, oil, isolators, solid state starter (option), etc.; refrigerant charge shipped separately.

NOTE

Units shipped dismantled MUST be re-assembled by, or under the supervision of, a YORK representative. (See Form 160.54-N3)

Form 7 – Split Shells – Shipped as four major assemblies. Unit first factory assembled, refrigerant piped, wired and leak tested; then dismantled for shipment. Compressor/motor assembly removed from shells and skidded.

Cooler and condenser shells are separated at tube sheets and are not skidded. Refrigerant lines between shells are flanged and capped, requiring no welding.

All wiring integral with compressor is left on it. All wiring harnesses on shells are removed. All openings on compressor and shells are closed and charged with dry nitrogen (2 to 3 PSIG).

Miscellaneous packaging of control center, tubing, water temperature controls, wiring, oil isolators, solid state starter (option), etc.; refrigerant charge shipped separately.

NOTE

Units shipped dismantled MUST be re-assembled by, or under the supervision of, a YORK representative. (See Form 160.54-N3)

When more than one chiller is involved, the major parts of each unit will be marked to prevent mixing of assemblies. (Piping and Wiring Drawings to be furnished by YORK.)

INSPECTION – DAMAGE – SHORTAGE

The unit shipment should be checked on arrival to see that all major pieces, boxes and crates are received. Each unit should be checked on the trailer or rail car when received, before unloading, for any visible signs of damage. Any damage or signs of possible damage must be reported to the transportation company immediately for their inspection.

YORK WILL NOT BE RESPONSIBLE FOR ANY DAMAGE IN SHIPMENT OR AT JOB SITE OR LOSS OF PARTS. (Refer to Shipping Damage Claims, Form 50.15-NM)

When received at the job site all containers should be opened and contents checked against the packing list. Any material shortage should be reported to YORK immediately. (Refer to Shipping Damage Claims, Form 50.15-NM)

CHILLER DATA PLATE

A unit data plate is mounted on the control center assembly of each unit, giving unit model number; design working pressure; water passes; refrigerant charge; serial numbers; and motor power characteristics and connection diagrams.

Additional information may be found on the motor data plate. This information should be included when contacting the factory on any problem relating to the motor.

RIGGING (See Fig. 4)

The complete standard chiller is shipped without skids. (When optional skids are used it may be necessary to remove the skids so riggers skates can be used under the unit end sheets to reduce overall height.)

Each unit has four (4) lifting holes (two in each end) in the end sheets which should be used to lift the unit.

Care should be taken at all times during rigging and handling of the chiller to avoid damage to the unit and its external connections. Lift only using holes shown in Fig. 4.

CAUTION

Do not lift the unit with slings around motor/compressor assembly or by means of eyebolts in the tapped holes of the compressor motor assembly. Do not turn a unit on its side for rigging. Do not rig vertically.

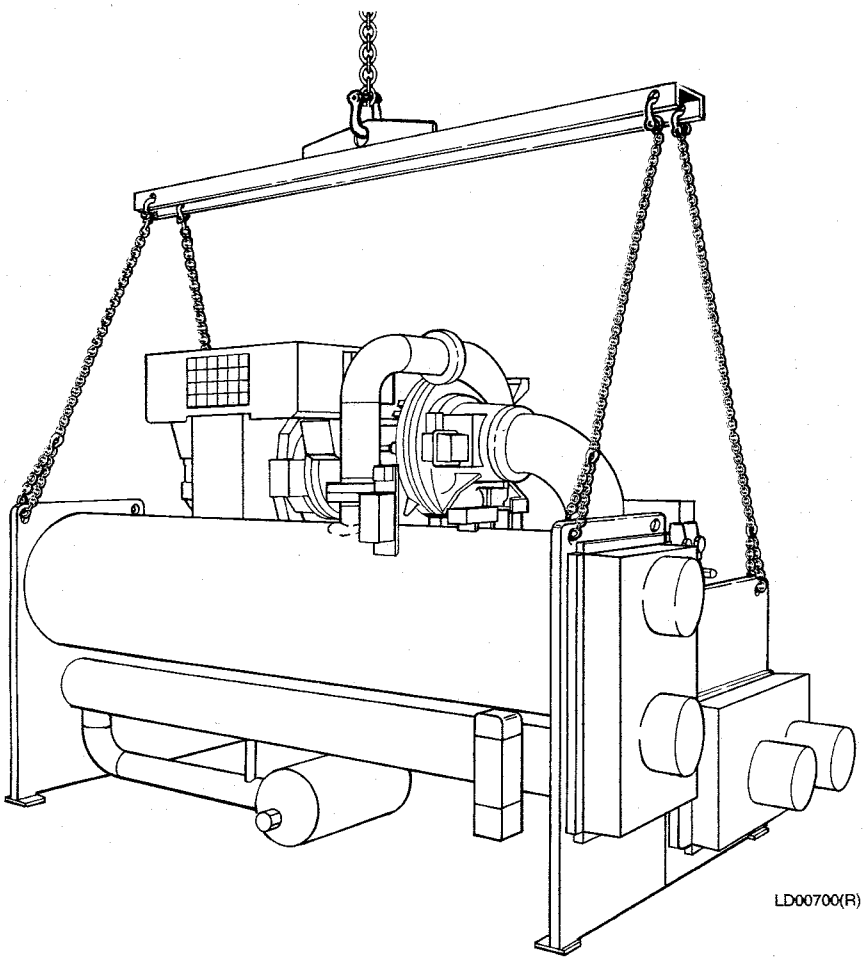


FIG. 9 – RIGGING

The rigging and operating weights and overall dimensions are given on pages 6 thru 13 as a guide in determining the clearances required for rigging. (Add 6" to overall height for optional skidded unit.)

LOCATION

YORK Millennium Chillers are furnished with vibration isolator mounts for basement or ground level installations. Units may be located on upper floor levels providing the floor is capable of supporting the total unit operating weight and optional spring isolators are used.

CAUTION

Sufficient clearance to facilitate normal service and maintenance work must be provided all around and above the unit and particularly space provided at either end to permit cleaning or replacement of cooler and condenser tubes – see CLEARANCE.

A doorway or other sufficiently large opening properly located may be used. The chiller should be located in an indoor location where temperatures range from 40°F to 110°F (4.4°C to 43.3°C).

MOTORS

The YK open motor is air cooled. Check state, local and other codes for ventilation requirements.

FOUNDATION

A level floor, mounting pad or foundation must be provided by others, capable of supporting the operating weight of the unit.

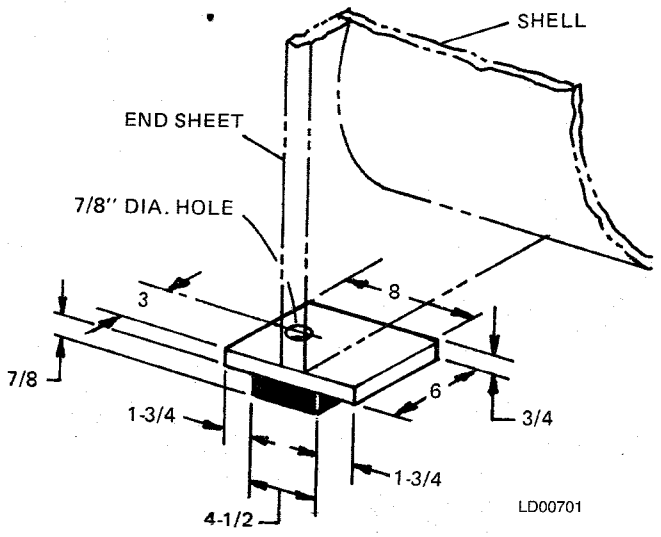
CLEARANCE

Clearances should be adhered to as follows:

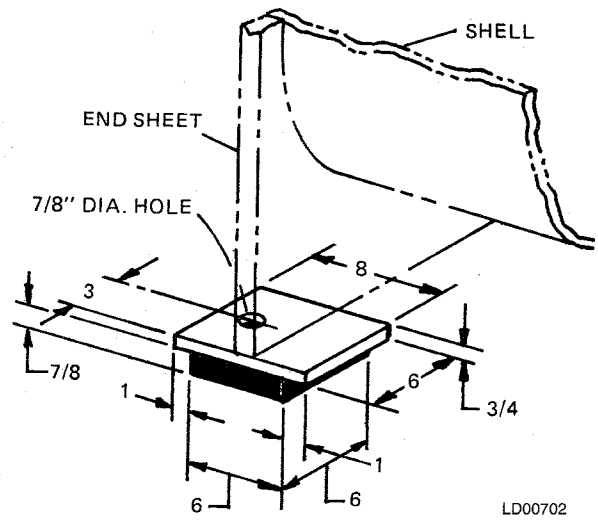
Rear and above unit – 2 ft.
Front of unit – 3 ft.
Tube Removal – 14 ft.* (either end)

* 16 ft. on shell codes T-T, T-V, V-T, V-V & W-V.

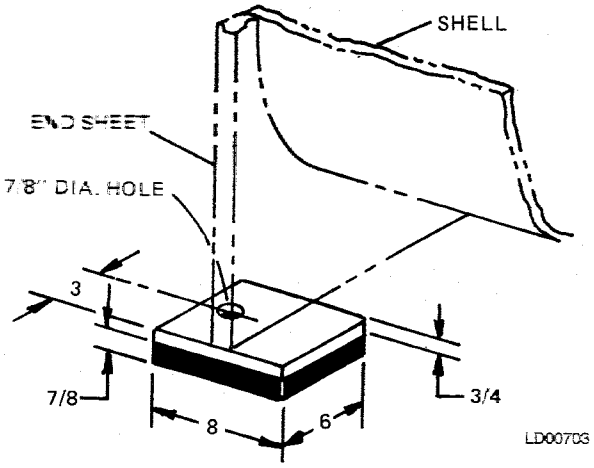
ALL DIMENSIONS ARE IN INCHES



UNIT WEIGHT UP TO 28,835 LBS.



UNIT WEIGHT 28,836 TO 53,530 LBS.



UNIT WEIGHT 53,531 TO 100,464 LBS.

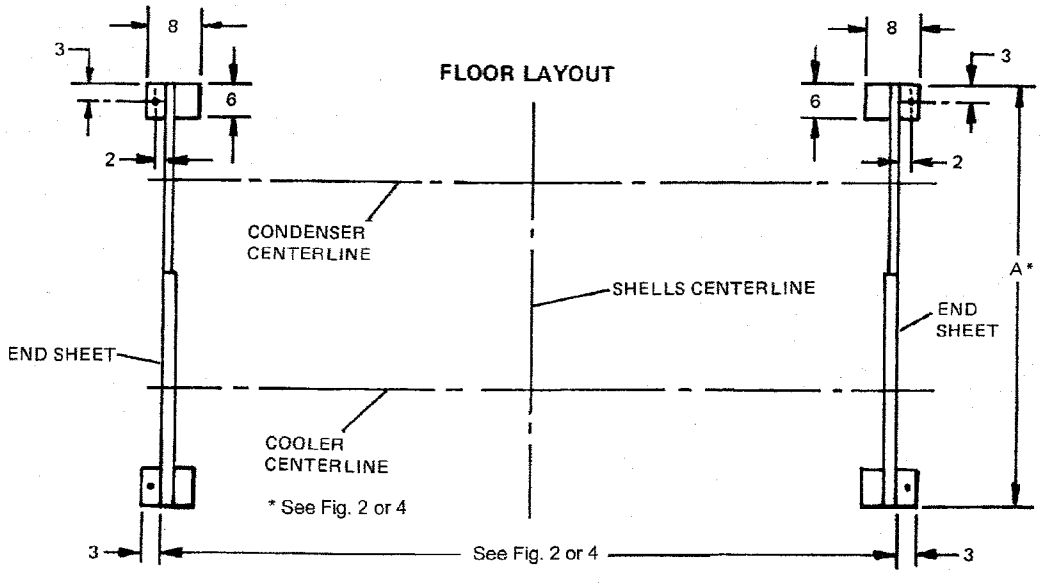
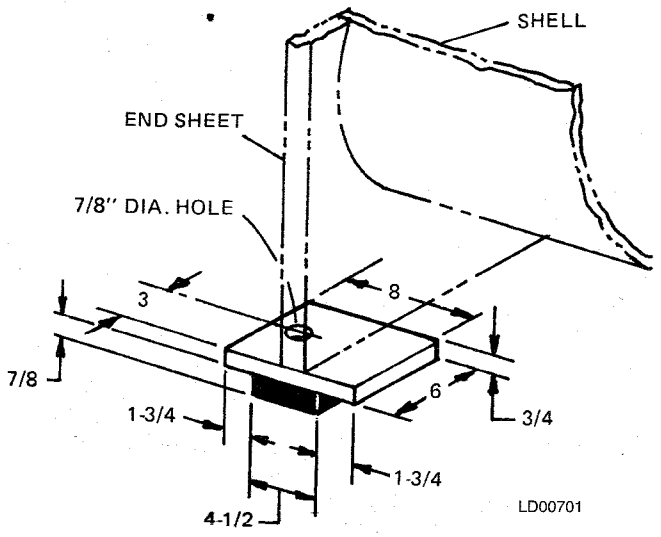
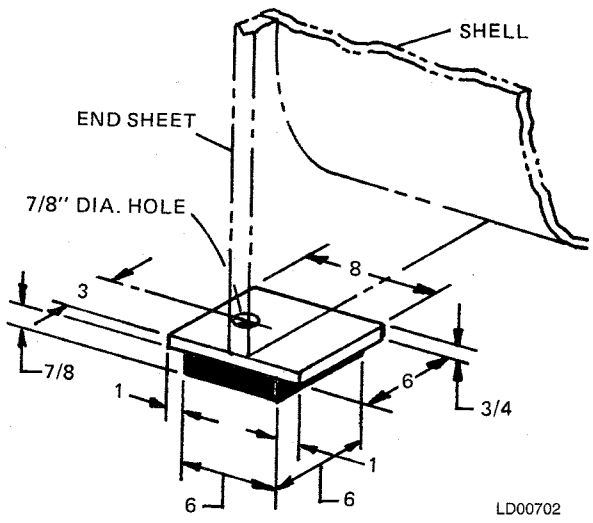


FIG. 10 – NEOPRENE ISOLATORS (STANDARD DIMENSIONS)

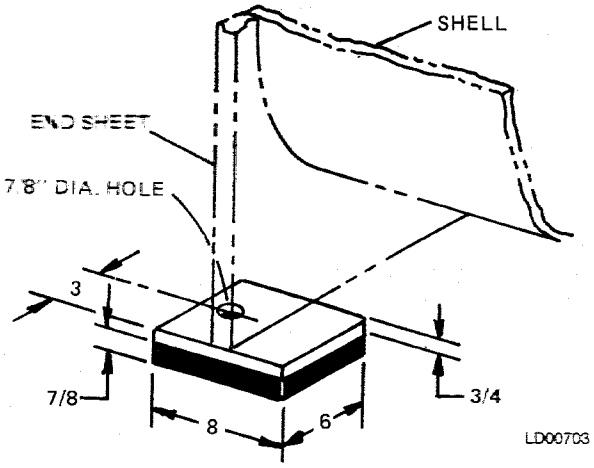
ALL DIMENSIONS ARE IN INCHES



UNIT WEIGHT UP TO 28,835 LBS.



UNIT WEIGHT 28,836 TO 53,530 LBS.



UNIT WEIGHT 53,531 TO 100,464 LBS.

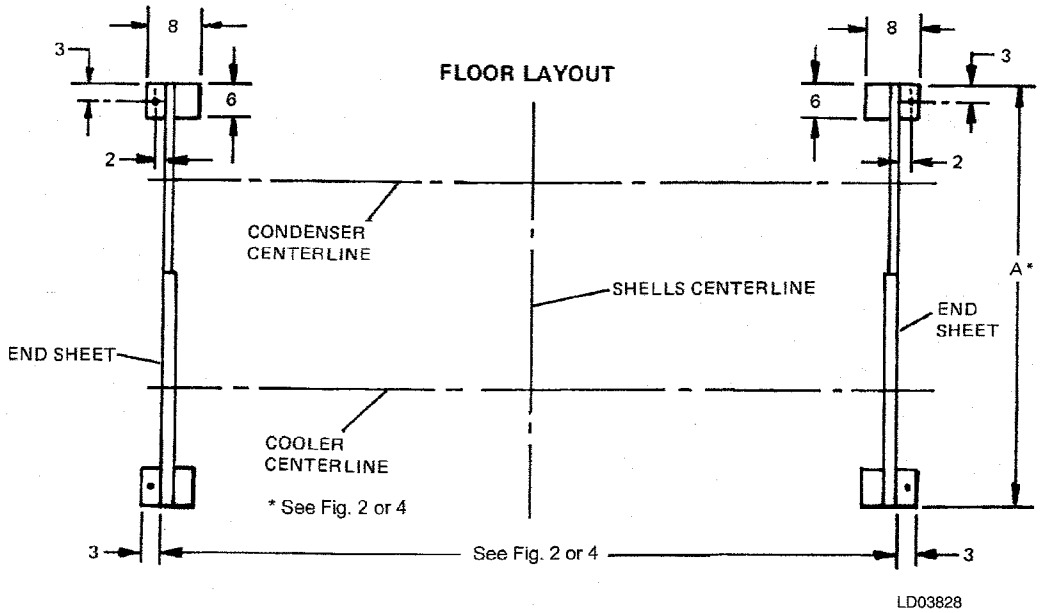
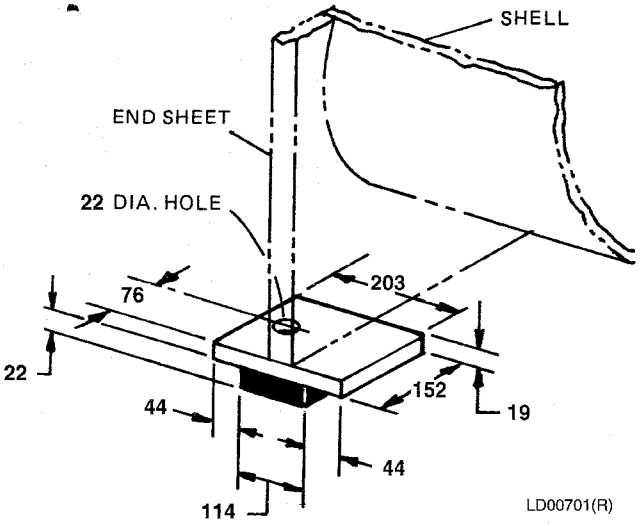
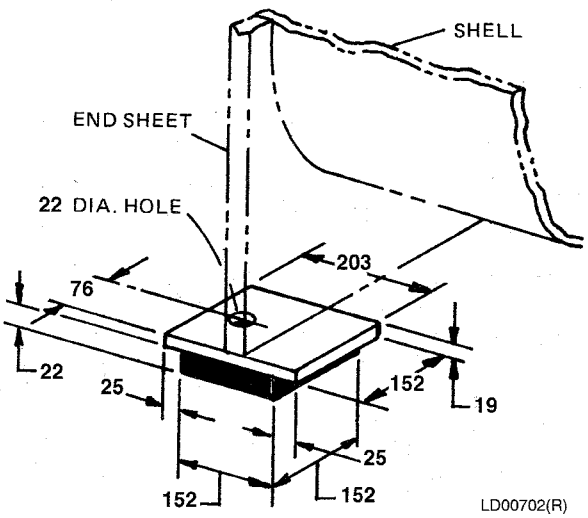


FIG. 10 – NEOPRENE ISOLATORS (STANDARD DIMENSIONS)

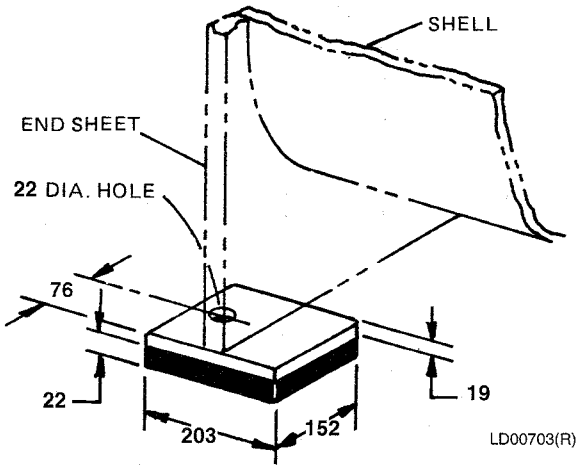
ALL DIMENSIONS ARE IN MILLIMETERS



UNIT WEIGHT UP TO 13,080 Kgs.



UNIT WEIGHT 13,081 TO 24,281 Kgs.



UNIT WEIGHT 24,282 TO 45,570 Kgs.

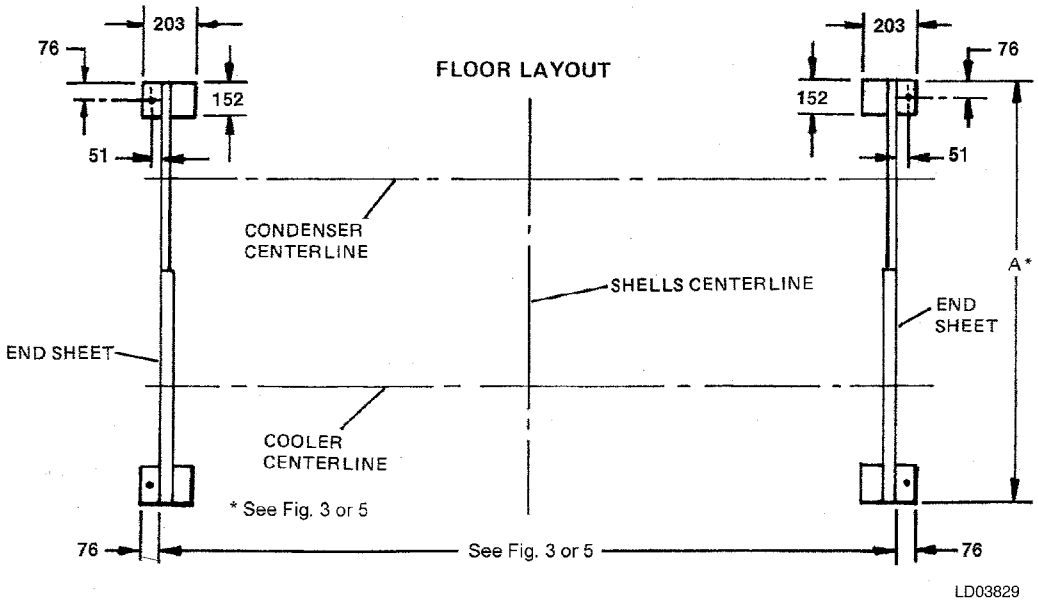
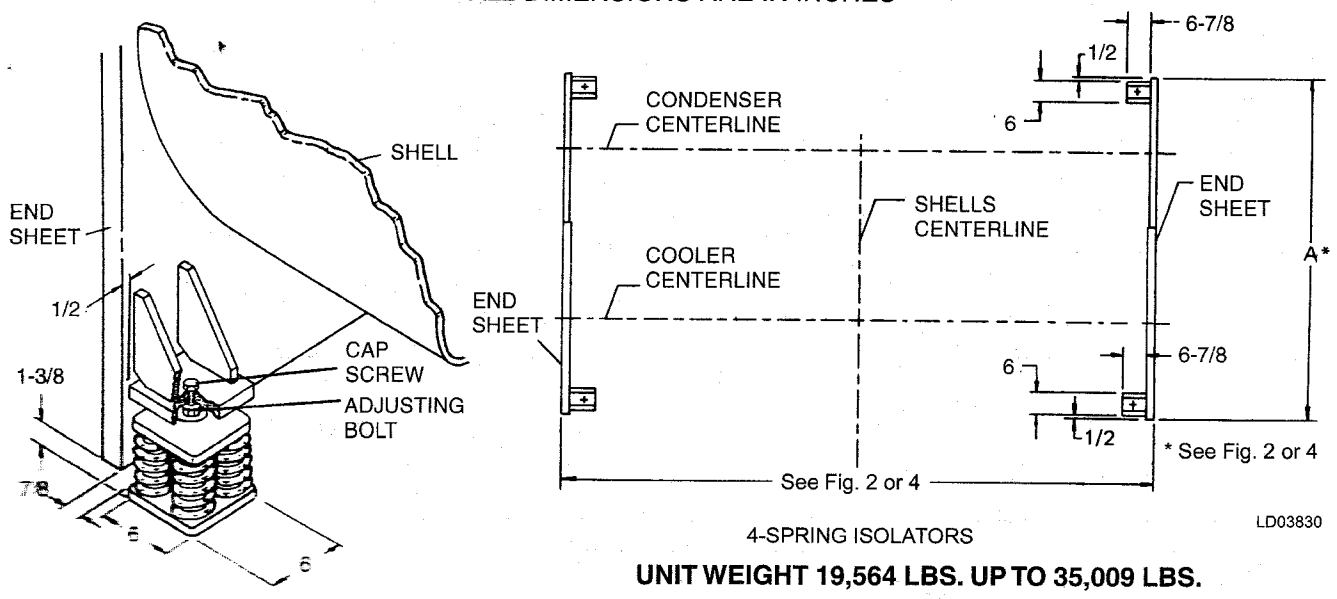


FIG. 11 – NEOPRENE ISOLATORS (METRIC DIMENSIONS)

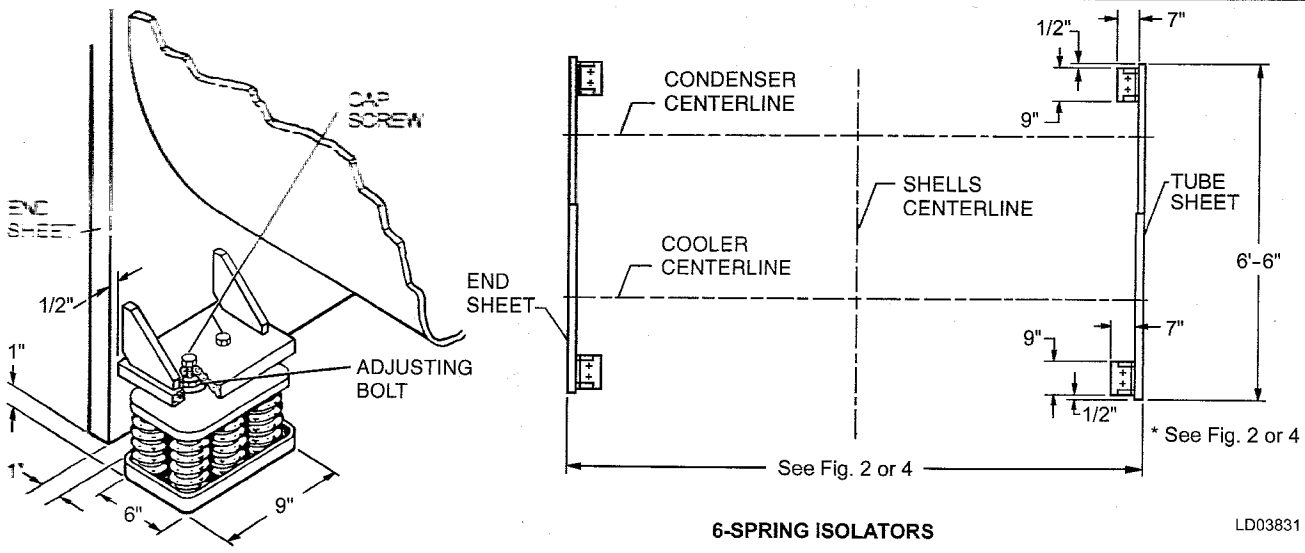
ALL DIMENSIONS ARE IN INCHES



4-SPRING ISOLATORS

LD03830

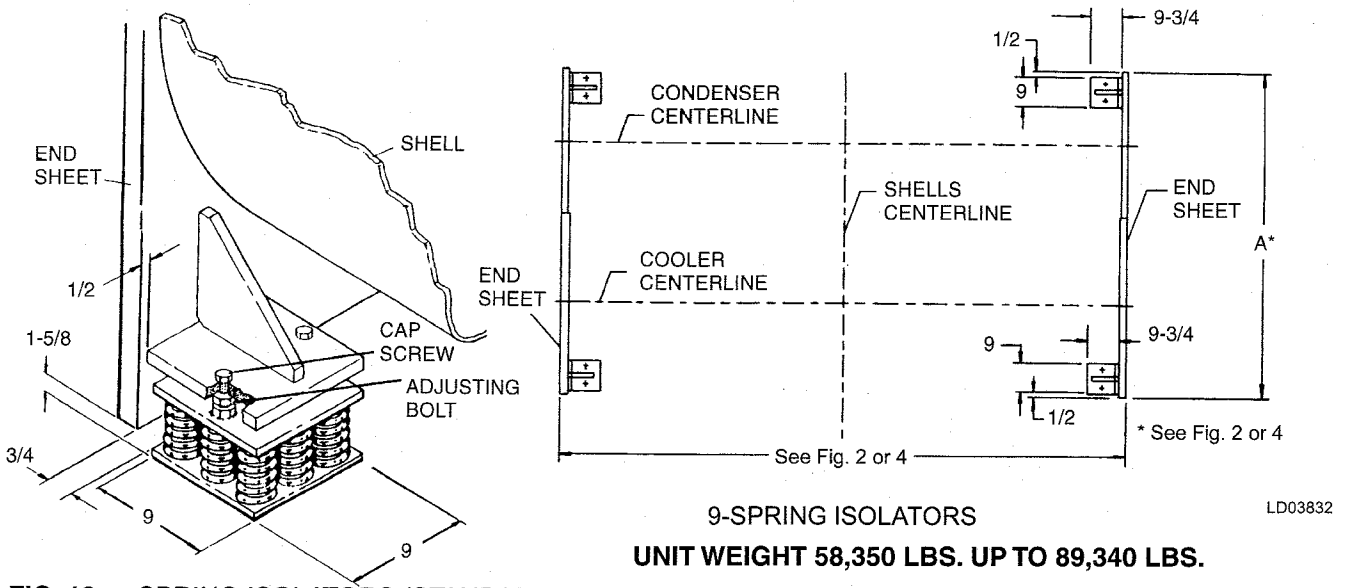
UNIT WEIGHT 19,564 LBS. UP TO 35,009 LBS.



6-SPRING ISOLATORS

LD03831

UNIT WEIGHT 35,010 LBS. UP TO 58,349 LBS.



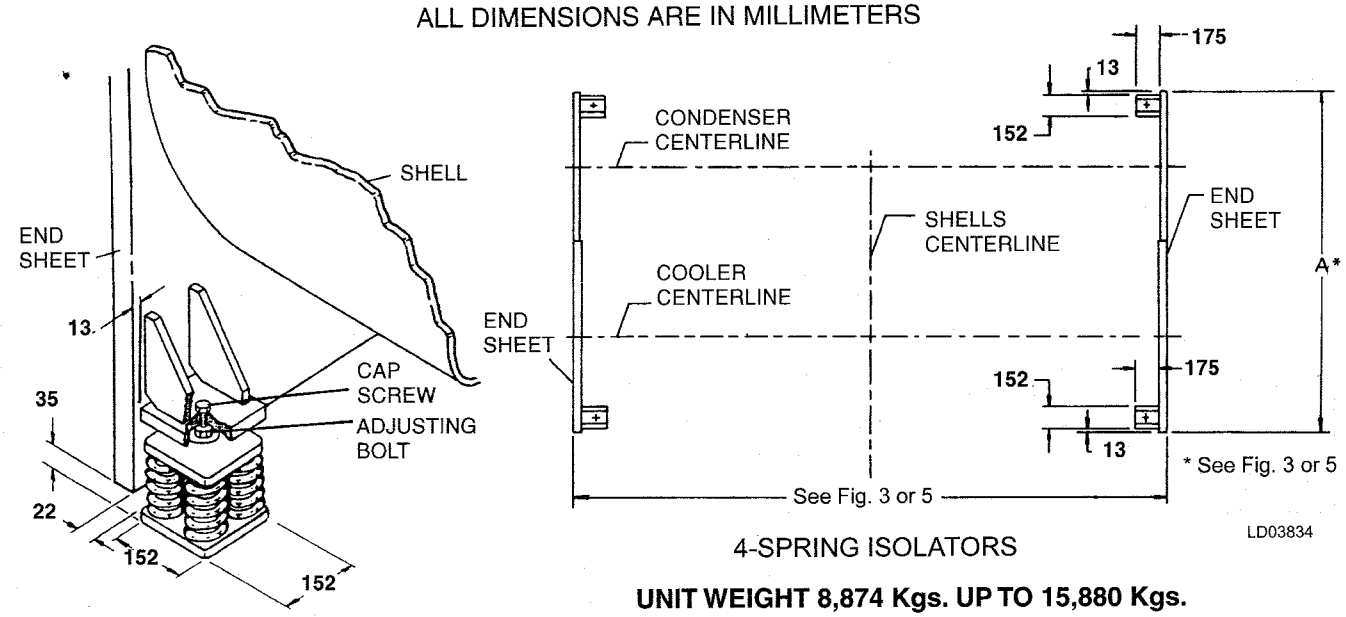
9-SPRING ISOLATORS

LD03832

UNIT WEIGHT 58,350 LBS. UP TO 89,340 LBS.

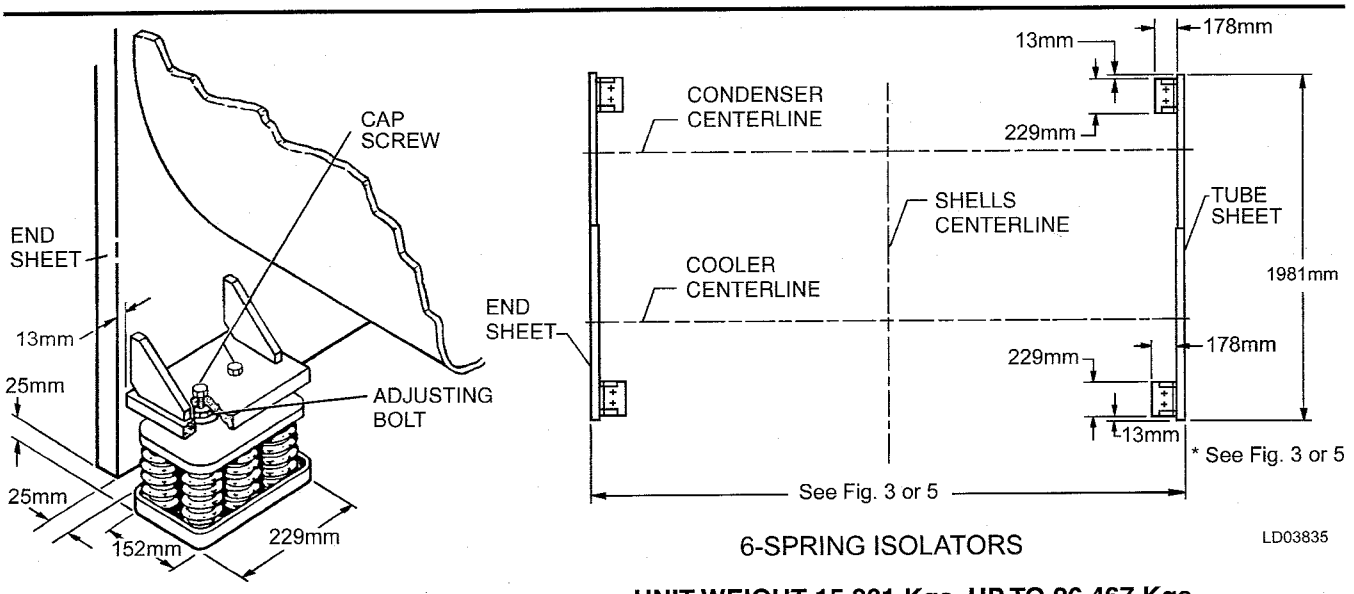
FIG. 12 – SPRING ISOLATORS (STANDARD DIMENSIONS)

ALL DIMENSIONS ARE IN MILLIMETERS



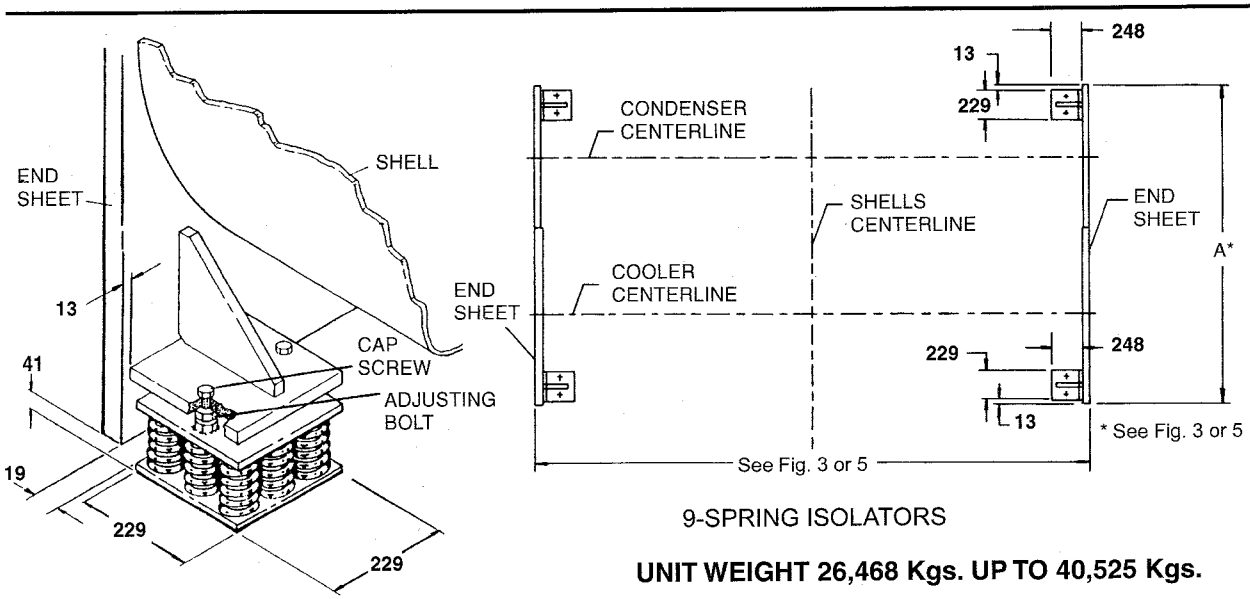
4-SPRING ISOLATORS

UNIT WEIGHT 8,874 Kgs. UP TO 15,880 Kgs.



6-SPRING ISOLATORS

UNIT WEIGHT 15,881 Kgs. UP TO 26,467 Kgs.



9-SPRING ISOLATORS

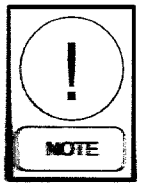
UNIT WEIGHT 26,468 Kgs. UP TO 40,525 Kgs.

FIG. 13 – SPRING ISOLATORS (METRIC DIMENSIONS)

INSTALLATION

RIGGING UNIT TO FINAL LOCATION

Rig the unit to its final location on the floor or mounting pad, lift the unit (or shell assembly) by means of an overhead lift and lower the unit to its mounting position. (If optional shipping skids are used, remove them before lowering the chiller to its mounting position.)



At this point units shipped dismantled should be assembled under the supervision of a YORK representative.

If cooler is to be field insulated, the insulation should be applied to the cooler before the unit is placed in position while the unit is in the lift position. Be sure unit is properly supported. See INSULATION, page 27.)

LOCATING AND INSTALLING ISOLATOR PADS (REFER TO FIG. 10 OR 11)

The isolator pad mounts are to be located as shown in Fig 10.

After the isolator pads have been placed into position on the floor, lower the chiller onto the pads. When the unit is in place, remove the rigging equipment and check that the unit is level both longitudinally and transversely. The unit should be level within 1/4" from one end to the other end and from front to the rear. If the chiller is not level within the amount specified, lift it and place shims between the isolation pad and the chiller tube sheets. (Shims furnished by the installer.) Lower unit again and recheck to see that it is level.

CHECKING THE ISOLATION PAD DEFLECTION

All isolation pads should be checked for the proper deflection while checking to see if the unit is level. Each pad should be deflected approximately 0.15 inch. If an isolation pad is under-deflected, shims should be placed between the unit tube sheet and the top of the pad to equally deflect all pads.

LEVELING THE UNIT

The longitudinal alignment of the unit should be checked by placing a level on the top center of the cooler shell under the compressor/motor assembly. Transverse alignment should be checked by placing a level on top of the shell end sheets at each end of the chiller.

INSTALLING OPTIONAL SPRING ISOLATORS (REFER TO FIG. 12 OR 13)

When ordered, 4 spring type isolator assemblies will be furnished with the unit. The 4 assemblies are identical and can be placed at any of the 4 corners of the unit.

While the unit is still suspended by the rigging, the isolators should be bolted to the unit by inserting the cap screw(s) through the hole(s) in the mounting bracket into the tapped hole in the top of the isolator leveling bolt(s). Then the unit can be lowered onto the floor.

The leveling bolts should now be rotated one (1) turn at a time, in sequence, until the unit end sheets are clear of the floor by the dimension shown in Fig. 12 or 13 and the unit is level. Check that the unit is level, both longitudinally and transversely (see Leveling the Unit). If the leveling bolts are not long enough to level unit due to an uneven or sloping floor or foundation, steel shims (grouted, if necessary) must be added beneath the isolator assemblies as necessary.

After the unit is leveled, wedge and shim under each corner to solidly support the unit in this position while piping connections are being made, pipe hangers adjusted and connections checked for alignment. Then the unit is filled with water and checked for leaks. The leveling bolts should now be finally adjusted until the wedges and shims can be removed. The unit should now be in correct level position, clear of the floor or foundation and without any effect from the weight of the piping.

PIPING CONNECTIONS

After the unit is leveled (and wedged in place for optional spring isolators) the piping connections may be made; chilled water, condenser water and refrigerant relief. The piping should be arranged with offsets for flexibility, and adequately supported and braced independently of the unit to avoid strain on the unit and vibration transmission. Hangers must allow for alignment of pipe. Isolators (by others) in the piping and hangers are highly desirable, and may be required by specifications, in order to effectively utilize the vibration isolation characteristics of the vibration isolation mounts of the unit.

Check for piping alignment – Upon completion of piping, a connection in each line as close to the unit as possible should be opened, by removing the flange bolts or coupling and checked for piping alignment. If any of the bolts are bound in their holes, or if the connection springs are out of alignment, the misalignment must be

corrected by properly supporting the piping or by applying heat to anneal the pipe.

NOTE

If the piping is annealed to relieve stress, the inside of the pipe must be cleaned of scale before it is finally bolted in place.

COOLER AND CONDENSER WATER PIPING

The cooler and condenser liquid heads of chiller have nozzles which are grooved, suitable for welding 150 PSIG DWP flanges or the use of Victaulic couplings. Factory mounted flanges are optional.

The nozzles and water pass arrangements are furnished in accordance with the job requirements (see Product Drawings) furnished with the job. Standard units are designed for 150 PSIG DWP on the water side. If job requirements are for greater than 150 PSIG DWP, check the unit data plate before applying pressure to cooler or condenser to determine if the chiller has provisions for the required DWP.

Inlet and outlet connections are identified by labels placed adjacent to each nozzle.

Chilled Water

Foreign objects which could lodge in, or block flow through, the cooler and condenser tubes must be kept out of the water circuit. All water piping must be cleaned or flushed before being connected to the chiller pumps, or other equipment.

Permanent strainers (supplied by others) are required in both the cooler and condenser water circuits to protect the chiller as well as the pumps, tower spray nozzles, chilled water coils and controls, etc. The strainer should be installed in the entering chilled water line, directly upstream of the chiller.

Water piping circuits should be arranged so that the pumps discharge through the chiller, and should be controlled as necessary to maintain essentially constant chilled and condenser water flows through the unit at all load conditions.

If pumps discharge through the chiller, the strainer may be located upstream from pumps to protect both pump and chiller. (Piping between strainer, pump and chiller must be very carefully cleaned before start-up.) If pumps are remotely installed from chiller, strainers should be located directly upstream of the chiller.

Condenser Water Circuit

For proper operation of the unit, condenser refrigerant pressure must be maintained above cooler pressure. If operating conditions will fulfill this requirement, no attempt should be made to control condenser water temperature by means of automatic valves, cycling of the cooling tower fan or other means, since chillers are designed to function satisfactorily and efficiently when condenser water is allowed to seek its own temperature level at reduced loads and off-peak seasons of the year. However, if entering condenser water temperature can go below the required minimum, (refer to 160.54-O1) condenser water temperature must be maintained equal to or slightly higher than the required minimum. Refer to Fig. 14 for typical water piping schematic.

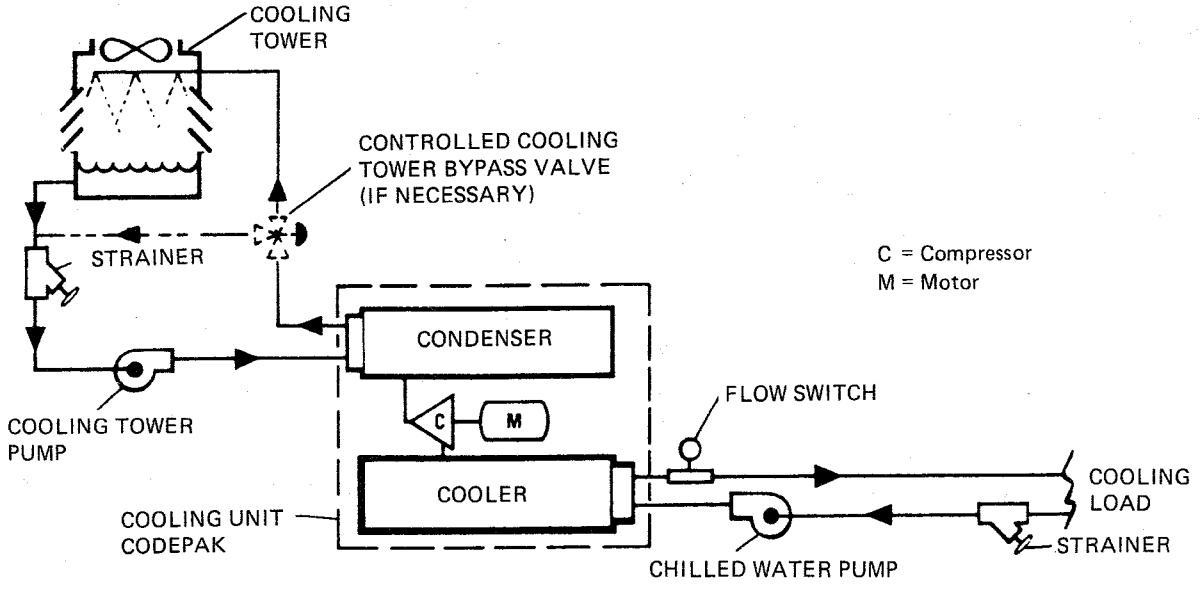


FIG. 14 – SCHEMATIC OF A TYPICAL PIPING ARRANGEMENT

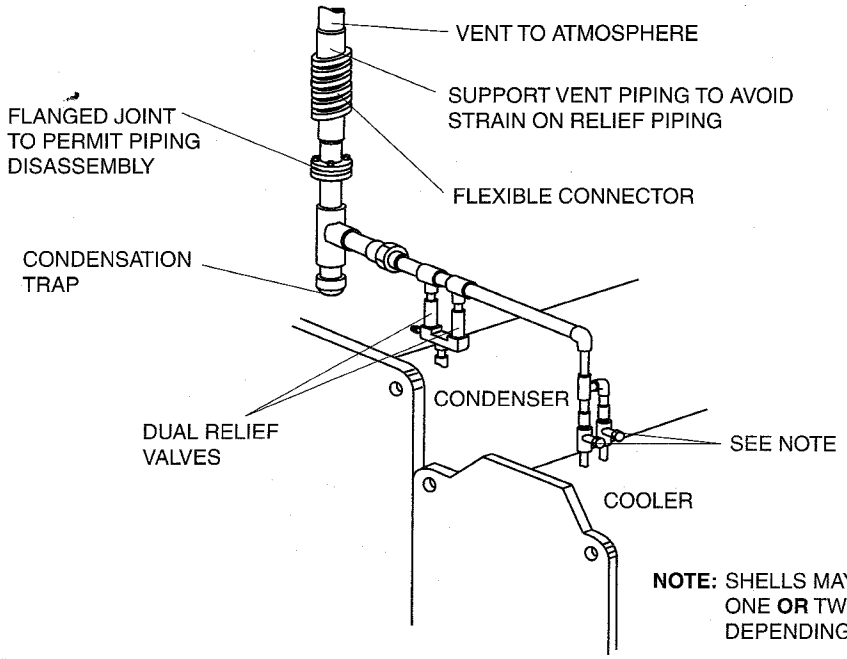


FIG. 15 – TYPICAL REFRIGERANT VENT PIPING

Stop Valves

Stop valves may be provided (by others) in the cooler and condenser water piping adjacent to the unit to facilitate maintenance. Thermometer wells and pressure taps should be provided (by others) in the piping as close to the unit as possible to facilitate operating check.

Flow Switches (Field Installed)

A flow switch or pressure differential control in the chilled water line(s) adjacent to the unit is an accessory furnished for connection to the control center. If a flow switch is used, it must be directly in series with the chiller and sensing only water flow through the chiller. The differential switch must sense pressure drop across the unit.

Drain and Vent Valves

Drain and vent valves (by others) should be installed in the connections provided in the cooler and condenser liquid heads. These connections may be piped to drain if desired.

Checking Piping Circuits and Venting Air

After the water piping is completed, but before any water box insulation is applied. Tighten and torque (to maintain between 30 and 60 ft. lbs.) the nuts on the liquid head flanges. Gasket shrinkage and handling during transit cause nuts to loosen. If water pressure is applied before tightening is done, the gaskets may be damaged and have to be replaced. Fill the chilled and condenser water circuits, operate the pumps manually and carefully check the cooler and condenser water heads and piping for leaks. Repair leaks as necessary.

Before initial operation of the unit both water circuits should be thoroughly vented of all air at the high points.

REFRIGERANT RELIEF PIPING

Each unit is equipped with pressure relief valves located on the condenser and on the evaporator for the purpose of quickly relieving excess pressure of the refrigerant charge to the atmosphere as a safety precaution in case of an emergency, such as fire.

Refrigerant relief vent piping (by others), from the relief valves to the outside of the building, is required by code in most areas and should be installed on all chillers. The vent line should be sized in accordance with the ANSI/ASHRAE-15, or local code. The vent line must include a dirt trap in the vertical leg to intercept and permit clean out and to trap any vent stack condensation. The piping MUST be arranged to avoid strain on the relief valves, using a flexible connection, if necessary.

UNIT PIPING

Compressor lubricant piping and system external piping are factory installed on all units shipped assembled. On units shipped dismantled, the following piping should be completed under the supervision of the YORK representative: (1) the lubricant piping to oil sump and oil cooler and system oil return connections using material furnished. See Form 160.54-N3.

CONTROL PANEL POSITIONING (See Fig. 16)

On units with cooler codes G thru W, the Graphic Control Center is placed in a position above the cooler for shipping. To move the control center into position for operation, proceed as follows:

1. While supporting the control center, remove the hardware between the support arms and the cooler.
2. Swing the control center into a vertical position.
3. Slide the control center down the guide rails to the proper position. Tighten securely.
4. Discard unused hardware.

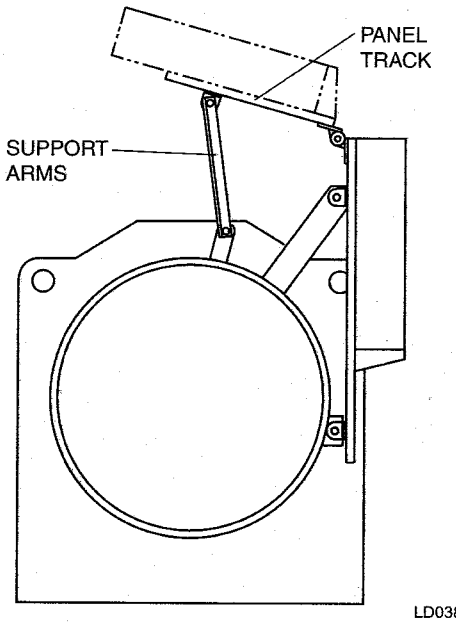


FIG. 16 – CONTROL PANEL POSITIONING

CONTROL WIRING

On units shipped disassembled, after installation of the control center, control wiring must be completed between unit components and control center, solid state starter, or variable speed drive, when used, using wiring harness furnished. Refer to Form 160.54-N3.

Field wiring connections for commonly encountered control modifications (by others) if required, are shown on Form 160.54-PW7.

NOTE

No deviations in unit wiring from that shown on drawings furnished shall be made without prior approval of the YORK representative.

POWER WIRING

Chiller with Electro-Mechanical Starter

A 115 volt – single phase – 60 or 50 Hertz power supply of 15 amperes must be furnished to the control center, from the control transformer (2 KVA required) included with the compressor motor starter. DO NOT make final power connections to control center until approved by YORK representative.

OIL PUMP – 3 PHASE STARTER

Separate wiring or a fused disconnect switch should be supplied by the installer.

NOTE

Remote Electro-Mechanical starters for the chiller must be furnished in accordance with YORK Standard R-1051 (Product Drawing Form 160.45-PA5.1) to provide the features necessary for the starter to function properly with the YORK control system.

Each chiller unit is furnished for a specific electrical power supply as stamped on the Unit Data Plate, which also details the motor connection diagrams.

NOTE

To insure proper motor rotation the starter power input and starter to motor connections must be checked with a phase sequence indicator in the presence of the YORK representative.

CAUTION

DO NOT cut wires to final length or make final connections to motor terminals or starter power input terminals until approved by the YORK representative.

YK Motors (Electro-Mechanical Starter)

Fig. 17 shows the power wiring hook-up for Motor Connections. (Refer to Wiring Labels in Motor Terminal Box for hook-up to suit motor voltage and amperage.)

Motor leads are furnished with a crimp type connection

having a clearance hole for a 3/8" bolt, motor terminal lugs are not furnished.

Chiller with Solid State Starter or Variable Speed Drive

A chiller equipped with a Solid State Starter or Variable Speed Drive does not require wiring to the compressor motor. The motor power wiring is factory connected to the Solid State Starter or Variable Speed Drive (or an optional factory installed disconnect switch). See Field Wiring Diagram. All wiring to the control panel and the oil pump starter is completed by the factory. A control transformer is furnished with the Solid State Starter or Variable Speed Drive.

INSULATION (SEE PRODUCT DRAWINGS FORM 160.52-PA1)

DO NOT field insulate until the unit has been leak tested under the supervision of the YORK representative.

Insulation of the type specified for the job, or minimum thickness to prevent sweating of 30°F surfaces should be furnished (by others) and applied to the cooler shell, end sheets, liquid feed line to flow chamber, compressor suction connection, and cooler liquid heads and connections. The liquid head flange insulation must be removable, to allow head removal for the tube maintenance. Details of areas to be insulated are given on the Product Drawing.

Units are furnished factory anti-sweat insulated on order at additional cost. This includes all low temperature surfaces except the two (2) cooler liquid heads.

INSTALLATION CHECK – REQUEST FOR START-UP SERVICE

The services of a YORK representative will be furnished to check the installation and supervise the initial start-up and operation on all chillers installed within the Continental United States.

After the unit is installed, piped and wired as described in this Instruction, but before any attempt is made to start the unit, the YORK District Office should be advised so that the start-up service, included in the contract price, can be scheduled. Notification to the YORK office should be by means of Installation Check List and Request, Form 160.49-CL1, in triplicate.

3 PHASE MOTOR VOLTAGE	MOTOR RATED LOAD AMPS CT RATIO			
50 / 60 Hz	200:1	350:1	700:1	1400:1
200-600	65-111[A]	112-224[A]	225-829[A]	830-1790[A]
2300-4160	11-18[C] 19-37[B] 38-123[A]	124-264[A]	265-518[A]	

NOTES:

A. Requires passing motor lead thru current transformer (CT) once before connecting to power supply.

B. Requires passing motor lead thru CT twice before connecting to power supply.

C. Requires passing motor lead thru CT three times before connecting to power supply.

COMPRESSOR MOTOR FIELD CONNECTION DIAGRAM

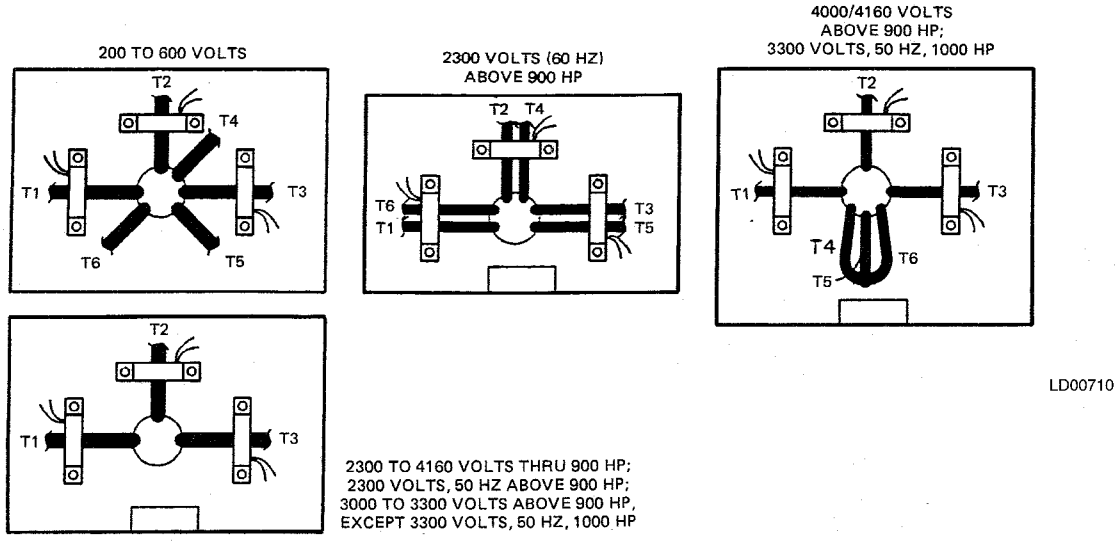


FIG. 17 – MOTOR CONNECTIONS (ELECTRO MECHANICAL STARTER APPLICATION)