

1.1 ORDERING INSTRUCTIONS

All items forming part of the Refrigeration or Air Conditioning Systems installed are selected to match and perform specifically.

When reordering materials or parts always refer to our Contract Number. Our elaborate record system will enable us to supply you with the original part or it's proper substitute.

"Identify part by name and size and state part and type of system it is used on and refer to Contract Number."

CONTRACT NUMBER

C-3288

GALT EQUIPMENT LIMITED
47 MARIE VICTORIN BLVD.,
CANDIAC, QUE.

TEL: NO. 659-9644

Typical Example:

When ordering a replacement thermostatic expansion valve.

1. Give the type no. of valve.
2. Charge symbol or room temperature.
3. Size and style of line connection.
4. Internal or external equalizer.
5. Remote bulb tubing length.

BEFORE INITIAL START-UP

1. Check system's different components to familiarize with its proper function.
2. Check any apparent defect due to shipment.
3. Check motor compressor alignment
4. Remove coupling central part allowing motor to run freely.
5. Start motor and check direction of rotation - must match compressor rotation.
6. Re-install coupling.
7. Check oil level in compressor crankcase.

Above procedure has to be carried out by a qualified mechanic. At the same time, all necessary adjustments and control settings should be made.

Use with Drawing No:

1.3 The Refrigeration Cycle is as Follows:

Electric energy is supplied to the motor driving a positive displacement compressor which removes cold and low pressure refrigerant vapour from the evaporator and compresses it. The resulting high pressure, high temperature discharge gas passes through the condenser where it is condensed to a liquid and the heat rejected to sea-water.

The liquid refrigerant passes through the thermostatic expansion valve to the evaporator at a reduced pressure. The low pressure and low temperature liquid in the evaporator absorbs heat from its surroundings, evaporating to a gas which is again withdrawn by the compressor.

DESIGN CONDITIONS

COMMON

Power: 440 volt 3 phase 60 cycle

Controls: 110 volt 1 phase 60 cycle

Seawater: 85°F

Ambient: 100°F

Refrigerant: R-12

Rooms below 32°F electric defrost - insulation overall U factor
 $.04 \frac{\text{BTU}}{\text{HR } ^\circ\text{F sq. ft.}}$

Except cold and cargo space which requires over U factor of
 $.032 \frac{\text{BTU}}{\text{HR } ^\circ\text{F sq. ft.}}$

DOMESTIC SYSTEM

	CU FT	°F
1 - cold-cool room	2371	-5 ÷ 0° or 33 ÷ 38
1 - cool-cold room	796	33 ÷ 38 or -5 ÷ 0
1 - fruit-vegetable room	1675	38 ÷ 45
1 - dairy room	576	33 ÷ 38
1 - potato room	198	45 ÷ 55

SYSTEM

1 - Condensing unit consisting of 2 compressors and 2 condensers to serve all refrigerated chambers. Compressors arranged for parallel operation during pulldown. One compressor can handle load after pulldown, running approximately 16 hours out of 24 hours. Capacity of each compressor 3.1 RT at -20°F, suction 105°F, condenser running at 1750 RPM.

CARGO SYSTEM

1 - cold room	2000	-5° ÷ 0°
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SYSTEM

1 - Condensing unit consisting of 2 compressors and 2 condensers to refrigerated cargo room. Compressors arranged for parallel operation during pulldown. One compressor can handle load after pulldown running approximately 12 hours out of 24 hours. Capacity of each compressor 2 RT at -20°F suction 105°F, condenser running at 1750 RPM.

5 NORMAL VALVE POSITIONS

Domestic Dwg: 3288-11C1 Rev. 2

A) Normally Open (on working unit)

- Compressor suction and discharge service valves
- Hand valve (79) on condenser (7)
- Condenser outlet valve (14) receiver outlet valve (14)
- Dual valve (72) open to one relief valve only
- Drier service valves (15)
- Hand valves at liquid solenoid valves (55) inlet.
- Hand valves at RXV's in and outlets, and in equalizer line.
- Hand valves at evaporator (50, 51, 52, 53, 54) outlet
- EPR (69, 70, 71, 72) service valves in and outlet except on cold-cool rooms, when operating at freezing temperature, close EPR service valves and open EPR bypass valves.

B) Normally closed (on standby unit)

- Compressor suction and discharge service valves
- Hand valve (79) on condenser (7)
- Condenser outlet valve (14)
- Gauge valves (23) closed except for gauge reading.
- Purge fitting (10) capped
- Vent (9) on condenser capped
- Oil equalizer valve (34) except when compressors working together.
- Drier by pass (15)
- TXV (61, 62) bypass valves
- EPR (69, 70, 71, 72) bypass valves, except cold-cool rooms when operating at freezing temperatures.

1.6 NORMAL CONTROL SETTINGS

Domestic Dwg: 3288-11C1 Rev 2

Dwg: 3288-12C1 Rev 2

- Set compressor unloading point 1 psi above LP (28) setting - observe gauge
- Low pressure switch (28) LP to open at 2" vac, to close at 9 psi
- High pressure switch (27) HP to open at 200 psi, to close at 150 psi
- Oil filter switch (26) factory set - requires manual reset after tripping
- Switch L-M opens 60 seconds delayed after differential switch 2-1 closes.
- Set time relays TR1 for 5 second "ON" delay
TR2 for 7 second "ON" delay
- Set defrost timer (59) for one defrost cycle at night or as needed.
- Set defrost time longer than required because defrost termination is automatic.
- Room thermostats (60)
 - a) cold-cool room: -5°F - cut out, 0°F cut in
or 35°F - cut out, 40°F cut in
 - b) cool-cold room: 35°F - cut out, 40°F cut in
or -5°F - cut out, 0°F cut in
 - c) fruit-vegetable room: 38°F cut out, 45°F cut in
 - d) dairy room: 35°F cut out, 40°F cut in

e) potato room: 45°F cut out, 55°F cut in.

PRIOR TO START UP

- With compressor HOA switch on "OFF", close compressor disconnect switch 24 hours before start up to allow CCH (2) to warm up crankcase.
- Run condenser pumps (75) manually to prime system.
- Start evaporator fans by closing evaporator disconnect switches.
- Make sure condenser water flows through condenser (7)

1.8 TO START

- Put HOA to "Auto"

1.9 TO STOP

- Except in emergencies, wait until system stops on low pressure switch (28). This allows for pump down. Then put HOA to "OFF"

1.10 NORMAL VALVE POSITIONS

Cargo Dwg: 3288-11C2 Rev 2

A) Normally Open (on working unit)

- Compressor suction and discharge service valves
- Hand valve (255) on condenser (206)
- Condenser outlet valve (214)
- Receiver outlet valve (217)
- Dual valve (215) open to one relief valve only
- Drier service valves (218)
- Hand valves (238) at liquid solenoid valves (240) inlet
- Hand valves at TXV's in (241) and outlet (249 & 243) in equalizer line.
- Hand valves (245) at evaporator (246) outlet.

B) Normally Closed (on standby unit)

- Compressor suction and discharge service valves.
- Hand valve (255)
- Condenser outlet valve (214)
- Gauge valves (231) closed, except for gauge reading
- Purge fitting (213) capped
- Condenser vent (208) capped
- Oil equalizer valve (225) except when compressors are working together.
- Drier bypass valve (218)
- TXV bypass valve (244)

1.11 NORMAL CONTROL SETTINGS

Cargo Dwg: 3288-11C2 rev 2
Dwg: 3288-12C2 Rev. 0

- Set compressor unloading point 1 psi above LP (229) setting observe gauge (233) LP
- Low pressure switch (229) to open at 2" vac to close at 9 psi observe gauge (233) LP