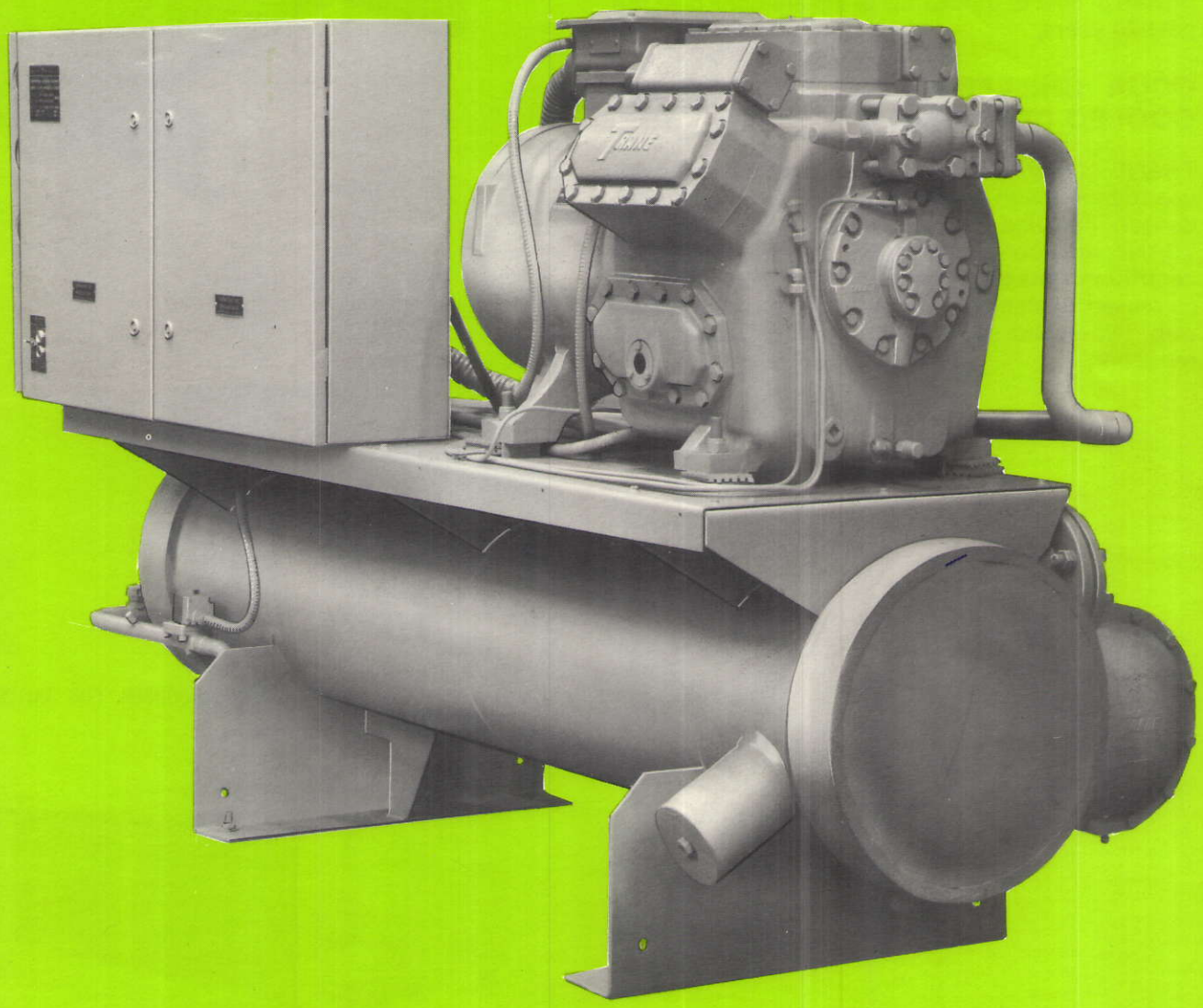
TRANE®

WATER CHILLERS

WITH SEMI-HERMETIC RECIPROCATING COMPRESSOR WITH WATER-COOLED OR REMOTE AIR-COOLED CONDENSER

NOMINAL CAPACITIES FROM 49 TO 298 kW (14 TO 85 TONS)



ER7W/CA7-E

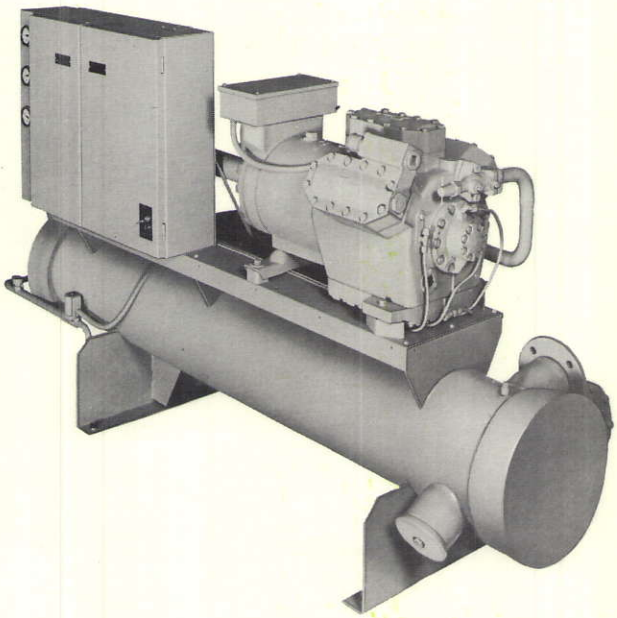
TRANE reciprocating liquid chillers with one TRANE semi-hermetic compressor are available in 9 basic sizes, with a built-in, water cooled shell-and-tube condenser, or with a remote air cooled condenser, installed either inside or outside the building.

All units are exceptionally compact and require a minimum of floor space.

All major components, particularly the compressor and the heat exchangers, are designed and manufactured by Trane. These components are the result of long experience and have proven their superior efficiency and reliability in tens of thousands of installations all over the world.

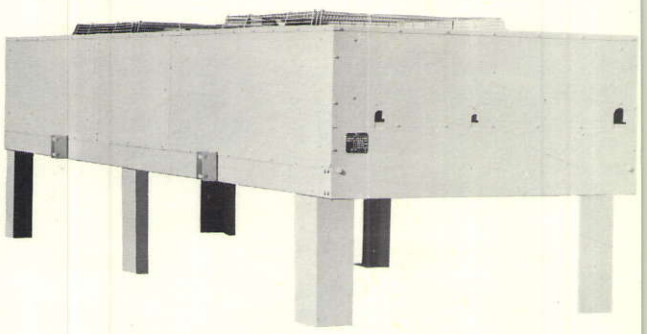
CGWA CHILLERS WITH BUILT-IN, WATER COOLED CONDENSER

All unit sizes are exceptionally compact and yet fully accessible for service and maintenance.
Unit sizes 101 through 104 are fitted with the TRANE model M compressor a modern and proven design.
Unit sizes 105 through 107 have the latest generation TRANE model R compressor, built for reliability and a wide range of operating conditions.
Unit sizes 108 and 109 use the industrial-type TRANE model E compressor which has been proven in tens of thousands of installations over the past 20 years.

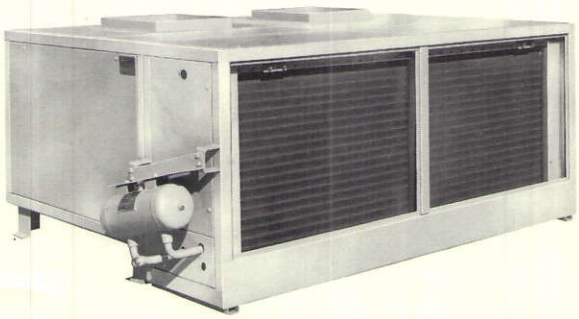


CCUA CHILLERS WITH REMOTE AIR COOLED CONDENSER

TRANE compressor-chiller units are designed for use together with a remote TRANE air cooled condenser, installed outside or inside the building. TRANE air cooled condensers with axial-type or centrifugal fans have integral subcooler circuits for increased system efficiency and can be supplied with two-speed motors for positive noise level reduction.



TRANE AXIAL-FAN AIR COOLED CONDENSER FOR OUTDOOR INSTALLATION.



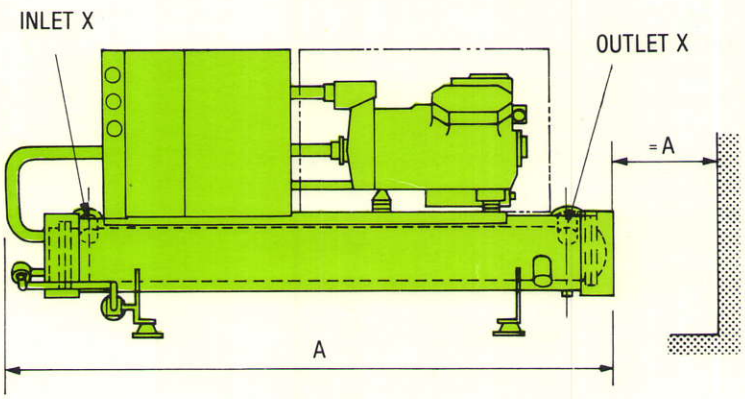
TRANE CENTRIFUGAL FAN AIR COOLED CONDENSER FOR INDOOR OR OUTDOOR INSTALLATION.

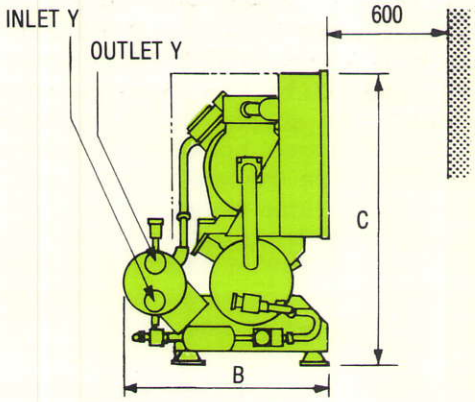
CAPACITIES AND GENERAL DATA

MODEL	CGWA	101 M	102 M	103 M	104 M	105 R	106 R	107 R	108 E	109 E
Cooling capacity (1)	kW	50.1	64.8	80.2	96.8	125.1	158.5	189.6	228.8	310.6
	tons	14.2	18.4	22.8	27.5	35.6	45.1	53.9	65.1	88.3
Compressor power consumption (1)	kW	12.7	16.4	18.8	23.8	30.3	36.2	44.1	53.0	67.8
Capacity steps (5)	%	67	50	67	67	50	67-(33)	67-(33)	67-50-33	75-50-37
Full load amps (2)	A	37	39	46	57	81	85	106	113	154
Starting amps (3)	A	96	125	146	208	252	304	358	426	581
Evaporator water content	litres	30	30	32	58	51	103	103	88	163
Condenser water content	litres	7	10	10	11	14	18	21	25	45
R22 operating charge	kg	14	14	15	18	23	25	33	36	45
Unit operating weight	kg	550	565	625	750	900	1180	1190	1530	1980

(1) At 13/7°C chilled water, 27/32°C condenser water, fouling factor 0.035 m²K/kW. Standard heat exchangers. Over- and undersized heat exchangers are available for increased selection flexibility.
(2) At 415/3/50. At 5 bar suction pressure, 25 bar discharge pressure.
(3) At part winding start.
(4) All capacity, and weight data apply to the series CGWA units (with built-in water cooled condenser). For series CCUA units (without condenser, for use with remote air cooled condenser) refer to your TRANE Sales Office for information.
(5) Capacity steps in brackets are optional.

DIMENSIONS





MODEL	CGWA	101 M	102 M	103 M	104 M	105 R	106 R	107 R	108 E	109 E
Length A		1870	1870	2090	2160	2140	2210	2380	2420	2850
Width B		710	710	710	790	830	1010	1010	1010	1160
Height C		1170	1170	1170	1220	1210	1260	1260	1380	1480
Chiller water connection size	X (1)	1.5"	1.5"	2"	2.5"	2.5"	3"	3"	3"	4"
Condenser water connection size	Y (2)	1.5"	1.5"	1.5"	2"	2"	3"	3"	3"	4"

(1) Threaded connections ISO R7 on sizes 101 to 103, flanged connections on sizes 104 to 109.
(2) Connections female pipe thread ISO R7 on all sizes except 109 which has flanged connections.
(3) Minimum clearance on all four sides = 600 mm, recommended clearance for tube removal on the right or left hand side of the unit = Dimension A.
(4) Drawing and dimensions approximate. Certified drawings on request.

MECHANICAL SPECIFICATIONS

Liquid chiller unit, factory assembled and wired, consisting of :

SEMI-HERMETIC TRANE COMPRESSOR

With built-in suction gas cooled motor with part winding start and inherent overload protection. Compressor fully accessible and completely rebuildable. Non-flexing ring plate type suction and discharge valves.
Electrically actuated capacity control. Lubrication system with self-reversing positive-displacement oil pump, oil filters, crankcase heater and oil level sight glass.

WATER COOLED CONDENSER (except series CCUA)

Shell-and-tube design, consisting of steel shell welded to thick steel tube sheets. Seamless integrally finned copper tubes mechanically expanded into the grooved tube sheets. Built-in liquid subcooler. Removable heads of closed grain cast iron. Water connections female pipe thread ISO R7. Size 109 with flanged connections.
Safety relief valve. Maximum operating pressure refrigerant side 2.5 MPa, water side 1.4 MPa.

EVAPORATOR

Shell-and-tube design with refrigerant inside the tubes and water circulating in the shell. Consists of steel shell welded to thick steel tube sheets. Seamless copper tubes mechanically expanded into grooved tube sheets. Refrigerant heads of high strength cast steel bolted to the tube sheets. Self-energizing type gaskets requiring low bolt torque. Water connections threaded ISO R7 on sizes 101 to 103 and flanged on sizes 104 to 109. Thermal insulation of evaporator of flexible closed cell polivynilchloride. Maximum operating pressure refrigerant side 1.4 MPa, water side 1.4 MPa.

STARTER AND CONTROL PANEL

Separate compartments for electric and refrigerant controls. Includes compressor motor part winding starter with time relay and overloads. High and low refrigerant pressure and oil pressure controls, chilled water temperature controller, freeze protection thermostat, control relays, control circuit fuse, terminal strips. Mounted externally are high and low refrigerant pressure and oil pressure gauges.

REFRIGERANT CIRCUIT

Including filter-dryer, sight glass, solenoid valve and thermostatic expansion valve. Compressor discharge service valve and liquid line shut-off valve. Refrigerant circuit factory pressure and leak tested, dehydrated and charged with a refrigerant holding charge.

ACCESSORIES AND OPTIONS

- Hot gas muffler, factory installed (models CGWA 105 R to 109 E only), shipped separately for field installation for CCUA units.
- Compressor sound attenuating enclosure, accoustically lined, factory installed.
- Over- and undersized condenser and/or evaporator.
- Hot gas by pass, factory installed.

SHIPMENT

All units ship fully assembled and wired with a refrigerant holding charge and the oil operating charge.

Subject to modifications.

TRANE®

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