Compressors

Refrigeration Compressors :

CHINTAMANI CH 5 SERIES

Salient Features of Construction :

1. Welded Steel Crankcase :

Less in weight, gas tight and impact proof smooth internal surfaces guarantees good oil condition.

2. Water Cooled Cylinder Block :

The crankcase has in built water cooling jacket to avoid over heating of piston and liner element leading to trouble free long life of the compressor.

3. Lubrication System and Filter :

Crankshaft driven gear pump provides forced fed lubrication. The Pump incorporates a differential pressure regulator to provide separate pressures for two oil systems: lubrication system and control oil system. Automatically operating hydraulic delay valve ensures complete unloaded start of the compressor results in lesser starting current. A metal gauze suction filter element and magnetic filter are provided for excellent filtering capacity of the lubricating oil.

4. Crankshaft and main Bearings :

Bearing surfaces of the high quality nodular cast iron crankshaft are ground to fine tolerances. Main bearings are white metal lined with steel backed bushes, pressed into the cast iron bearing covers. An intermediate bearing block is provided with split type bearing shell of the same type. Each crankshaft is dynamically balanced together with the counter weights

5. Piston and Connecting Rod Assembly :

Compression and scrapper rings on the aluminum piston provided perfect sealing and low oil consumption. The nodular iron connecting rod is drilled through for pressure lubrication of the piston pin. Steel backed white metal shells on big end and bronze bearing on small end of connecting rod. The complete assembly can be removed from the top for servicing without withdrawing the cylinder liner.

6. Cylinder Liner and Suction Valve :

Interchangeable cylinder liners are made of fine grained, centrifugally cast, alloy iron. Fine boring and honing results in a mirror smooth running surface. A hydraulic mechanical suction valve lifting mechanism on each individual cylinder achieves efficient and quick loading and unloading. For unloading, the suction valve ring is lifted from its seat in the cylinder collar by spring tension. Admitting controlled oil pressure to the control piston, allowing the suction valve ring to descend on its seat effects loading or cylinder.

7. Discharge Valve Assembly :

Three concentric discharge valve rings ensure ample gas passage at low lifting height. The use of sinusoidal springs together with precision machined and lapped surface results in a trouble-free operation for a remarkably long time. Minimum inventory for spares since most parts are identical throughout the CH series compressors.

Operational Characteristics :

1. Quick Maintenance : Parts subjected to wear are easily accessible through large service doors with minimum special tools.

2. Easy Cleaning : Suction gas strainer inside gauze strainer element can be easily removed and cleaned within no time.
3. Easy Maintenance : Piston/connecting rod assembly can be removed without removing the cylinder liner.
4. Minimum Oil Consumption : Is ensured by providing compression rings & oil scraper rings per piston - thus minimizing oil through discharge gas line.
5. Safety : Is ensured by built-in arrangement of buffer spring which protects compressor from incidental liquid hammer.
6. Extra Safety : Is ensured by built-in sight glass, making oil return flow visible hence avoids dry run of compressor and protect bearing wear and tear.
7. Trouble-free Long Running Life : This is possible due to highly effective oil purification by two filters.

CH-Series Compressors are :

1. Designed to operate with Ammonia, R22 & other HFC refrigerants.
2. Ideally suitable for continuous duty, process refrigeration liquefaction plants, ice plants, cold storages, etc.
3. Most suitable for industrial refrigeration and low temperature applications

Accessories :

1. V-belt Drive
2. Base Frame for Compressor
3. Oil Separator
4. Shut-off Valves
5. Gauge/Cutout Board Assembly
6. Crankcase Heater

Compressor Model	Cylinder arrangement	No. of Cylinders	Cylinder bore	Piston Stroke	Swept volume 1400 rpm	Direction of rotation	Discharge Pressure	Oil Charge	Cooling Water flow	Weight of Compressor
			mm	mm	m3/hr		bar	Ltrs	LPM	Kg
CH 5	Vertical	2	110	85	140.7	Anti Clockwise from Flywheel	18.5	8	8 LPM for Water Temp 30°C & 15 LPM for Water temp 40°C	255

Model CH 5 Regrigerant R22 :

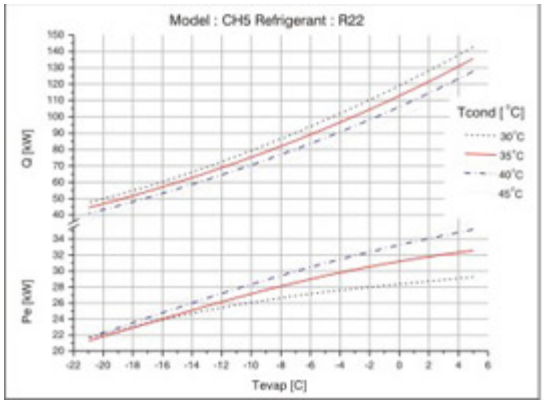
	Q [kW]				Pe [kW]			
Tevap [°C]	**30 [°C]**	**35 [°C]**	**40 [°C]**	**45 [°C]**	**30 [°C]**	**35 [°C]**	**40 [°C]**	**45[°C]**
10	169.03	161.80	153.46	145.05	30.41	33.60	37.00	39.97
7	152.77	145.56	137.57	129.72	29.68	33.01	35.93	37.66
5	142.56	135.51	127.83	120.35	29.27	32.57	35.20	36.35
3	132.82	126.03	118.70	111.58	28.90	32.07	34.45	35.19
1	123.50	117.05	110.11	103.36	28.55	31.51	33.66	34.13

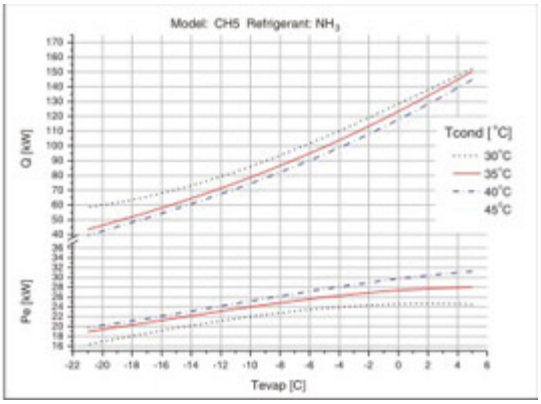
-1	114.60	108.54	102.01	95.62	28.19	30.88	32.82	33.15
-3	106.09	100.47	94.36	88.31	27.80	30.18	31.93	32.22
-5	97.97	92.79	87.10	81.40	27.38	29.41	30.98	31.30
-7	90.22	85.49	80.22	74.85	26.91	28.56	29.97	30.37
-9	82.85	78.56	73.68	68.63	26.37	27.64	28.91	29.42
-11	75.87	71.98	67.46	62.72	25.77	26.66	27.78	28.41
-13	69.29	65.75	61.55	57.10	25.09	25.63	26.61	27.34
-15	63.14	59.87	55.94	51.76	24.34	24.56	25.40	26.19
-17	57.45	54.36	50.62	46.70	23.51	23.47	24.17	24.94
-19	52.24	49.22	45.61	41.92	22.61	22.36	22.92	23.59
-21	47.57	44.49	40.91	37.43	21.65	21.27	21.67	22.13
-23	43.47	40.19	36.55	33.25	20.63	20.22	20.45	20.55
-25	40.01	36.35	32.54	29.40	19.56	19.23	19.28	18.86
-27	37.24	33.02	28.92	25.91	18.47	18.32	18.17	17.06
-29	35.23	30.25	25.73	22.82	17.36	17.54	17.17	15.15
-31	34.05	28.09	23.01	20.17	16.25	16.91	16.29	13.14

Model CH 5 Regrigerant NH3 :

	Q [kW]				Pe [kW]			
Tevap [°C]	**30 [°C]**	**35 [°C]**	**40 [°C]**	**45 [°C]**	**30 [°C]**	**35 [°C]**	**40 [°C]**	**45 [°C]**
10	174.37	179.76	175.04	167.63	23.35	27.81	32.01	36.24
7	161.28	161.88	156.52	150.20	24.17	28.05	31.66	35.50
5	152.05	150.34	144.77	138.87	24.49	28.02	31.26	34.83
3	142.61	139.17	133.55	127.88	24.65	27.85	30.73	34.04
1	133.12	128.44	122.89	117.31	24.64	27.55	30.09	33.15
-1	123.73	118.19	112.81	107.22	24.48	27.13	29.36	32.16
-3	114.57	108.46	103.32	97.66	24.16	26.59	28.53	31.09
-5	105.76	99.26	94.40	88.67	23.71	25.95	27.64	29.97
-7	97.41	90.60	86.05	80.29	23.12	25.23	26.68	28.80
-9	89.62	82.48	78.24	72.52	22.41	24.42	25.69	27.60
-11	82.46	74.88	70.92	65.37	21.60	23.56	24.67	26.41
-13	76.03	67.79	64.05	58.84	20.68	22.66	23.63	25.23
-15	70.37	61.15	57.56	52.91	19.69	21.73	22.61	24.08
-17	65.54	54.92	51.36	47.55	18.62	20.78	21.62	23.00
-19	61.58	49.03	45.39	42.70	17.50	19.84	20.68	22.00
-21	58.51	43.42	39.53	38.33	16.34	18.93	19.80	21.10

-23	56.35	38.00	33.68	34.36	15.16	18.06	19.02	20.33
-25	55.10	32.66	27.71	30.72	13.98	17.26	18.35	19.73



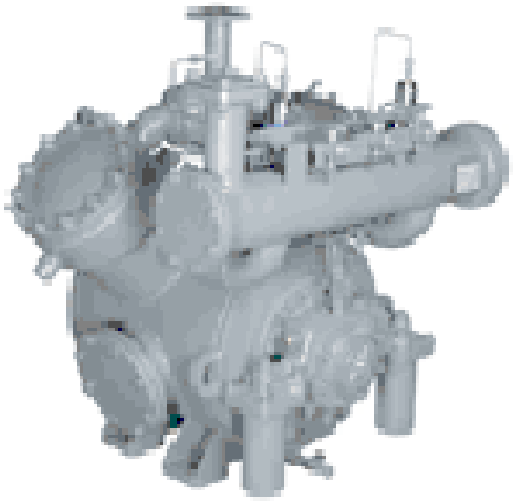


Note : We reserve the right to modify the specifications in accordance with improved designs. Although every effort has been made to maintain accuracy in the data given, the figures are in no way binding.

Q : cooling capacity [kW]; Pe: compressor brake power [kW]
The chart rating is for maximum speed: 1000 rpm; Minimum speed allowed: 400 rpm
The capacity and power consumption ratings are possible by interpolation for other speed conditions.
The motor power is 10% over the compressor brake power
DTSC :0°C; DTSC:50C

Warranty : Every compressor carries a standard warranty against manufacturing defects of 12 months from date of startup / commissioning by CTTPL authorised engineer or 18 months from date of dispatch whichever occurs early. The warranty card must be produced for warranty claims. Standard warranty does not contain consumables like oil, oil filter, gaskets, o-ring etc and warranty is not applicable if failure occurs due to fault in system design.

Heavy Duty Refrigeration Compressors :



CHINTAMANI CH SERIES : CH1, CH2, CH3, CH4, CH6, CH21, CH31, CH42, CH51

Salient Features of Construction :

1. Welded steel crankcase : Low in weight Gas tight and impact proof Smooth internal surfaces guarantee good oil condition.
2. Water cooled cylinder block : This crankcase has in built water cooling jacket for cylinder head to avoid over heating of piston and liner element leading to trouble free long life of compressor
3. Silent oil pump : Internal gear pump is provided with special self aligning driving plate to reduce vibrations to compressor and ensure trouble free long life of oil pump.
4. Pulsation dampener : Built in pulsation dampener to reduce pulsation to entire system of refrigeration
5. Crankshaft and main bearings : Bearing surfaces of the high quality nodular cast iron crankshaft are ground to fine tolerances.Main bearings are white metal lined steel backed bushes, pressed into the cast iron bearing covers. Intermediate bearing blocks are provided with split type bearing shell of the same type. Each crankshaft is dynamically balanced together with the counter weights
6. Piston / connecting rod assembly : Perfect sealing and low oil consumption due to 3 compression and 2-oil scrapper rings on each aluminium piston. The nodular iron connecting rod is drilled through for pressure lubrication of the piston pin Steel backed white metal shells on big end and bronze bearing on small end of connecting rod.The complete assembly can be removed from the top for servicing without withdrawing the cylinder liner
7. Cylinder liner and suction valve : Interchangeable cylinder liners are made of finegrained, centrifugally cast, alloy iron. Fine boring and honing results in a mirror smooth running surface. A hydraulic mechanical suction valve lifting mechanism on each individual cylinder achieves loading and unloading. For unloading, the suction valve ring is lifted from its seat in the cylinder collar by spring tension. Admitting controlled oil pressure to the control piston, allowing the suction valve ring to descend on its seat effects loading or cylinder.
8. Discharge valve assembly : Three concentric discharge valve rings ensure ample gas passage at low lifting height. The use of sinusoidal springs together with precision machined and lapped surface results in a trouble-free operation for a remarkably long time. Minimum inventory for spares since most parts are identical throughout the CH series compressors.
9. Lubrication system & oil filter : Forced Lubrication by an Internal Gear pump directly driven by the Crankshaft. The Pump incorporates two differential pressure regulators to provide separate pressures for two oil systems : Lubrication system and control oil system for operating cylinder loading unloading mechanism. Automatically operating solenoid valve ensures complete unloaded start of compressor. A Metal gauze suction filter element and a throwaway discharge paper filter cartridges are provided for excellent filtering capacity of the lubricating oil.

Operational Characteristics :

1. Quick maintenance : Parts subjected to wear are easily accessible through large service doors with minimum special tools
2. Easy cleaning : suction gas strainer Inside gauze strainer element can be easily removed and cleaned within no time .
3. Easy maintenance : as piston/connecting rod assembly can be removed without removing the cylinder liner.
4. Minimum oil consumption : is ensured by providing three compression rings & two oil scraper rings per piston - thus minimising oil through discharge gas line
5. Safety : is ensured by bult-in arrangement of buffer spring which protects compressor from incidental liquid hammer
6. Extra safety : is ensured by built-in sight glass, making oil return flow visible hence avoids dry run of commpressor and protect bearing wear and tear
7. Trouble-free long running life : this is possible due to highly effective oil purification by two filters.

▸ **CH-Series Compressors are :**

1. Designed to operate with Ammonia, R22 & other HFC refrigerants.
2. Ideally suitable for continuous duty, process refrigeration liquefaction plants, ice plants, cold storages, etc.
3. Most suitable for industrial refrigeration and low temperature applications
4. Available in single stage as well as two stage versions

▸ **Accessories :**

1. V-belt Drive
2. Base Frame for Compressor
3. Oil Separator
4. Shut-off Valves
5. Gauge/Cutout Board Assembly
6. Crankcase Heater

▸ **Single Stage Compressor** Click Here for Table and Graphs

▸ **Two Stage Compressor** Click Here for Table and Graphs

Note : We reserve the right to modify the specifications in accordance with improved designs. Although every effort has been made to maintain accuracy in the data given, the figures are in no way binding.
Q : cooling capacity [kW]; Pe : compressor brake power [kW]
The chart rating is for maximum speed : 1000 rpm; Minimum speed allowed : 400 rpm
The capacity and power consumption ratings are possible by interpolation for other speed conditions.
The motor power is 10% over the compressor brake power
DTSC : 0°C; DTSC : 50C

Warranty : Every compressor carries a standard warranty against manufacturing defects of 12 months from date of startup / commissioning by CTTPL authorised engineer or 18 months from date of dispatch whichever occurs early. The warranty card must be produced for warranty claims. Standard warranty does not contain consumables like oil, oil filter, gaskets, o-ring etc and warranty is not applicable if failure occurs due to fault in system design