



## ComMECH Series

CSH AIR CONDITIONING SCREW PACKAGES



Superior Quality  
Heat Exchange  
packaged with  
BITZER Compressor Sets



# BITZER ComMECH Series

## Benefits for System Owners & Installers

The **BITZER ComMECH** Series Compact Screw Compressor Pack offers contractors and system owners a complete factory assembled system; designed and built by Bitzer Australia's trained staff to ensure optimal compatibility of all components which provides durability, reliability and energy efficient performance in a compact system design.

The series offers the highest possible operational efficiency over a wide application range which is increasingly important with the introduction of MEPS (Minimum Energy Performance Standards) and a continually growing awareness of system operating costs.

Safety has been high on our designers' priority, with the inclusion of all necessary pressure controls and relief valve protection fitted as standard, as well as provision for correct mechanical handling of the assembly during installation, ensuring a safety first approach.

Reduced installation times and minimal maintenance down time is achieved through excellent access to all major components, with additional system isolation points installed as standard thus allowing direct access to major serviceable components. With a complete offering of all required components pre assembled on the package, minimal labour is required to complete the system connection.

The **Bitzer ComMECH** Series includes an optional integrated Economizer System.

The Economizer design provides mechanical liquid sub-cooling of the systems liquid refrigerant supply which delivers a significant improvement to the overall air conditioning system efficiency. This application provides the system operator with a more stable operating condition even in high ambient conditions and delivers to the system owner a significant reduction in operating costs over the entire life of the plant.

Accurate load matching is achieved even with single compressor operation, through an innovative capacity slider control within the CSH Screw Compressor.

The compressor has the capability to provide infinite capacity control or 4 step capacity control to deliver the exact refrigeration capacity required to directly match the air conditioned space requirements at any given time.

This flexible load matching design allows for full exploitation of low power consumption when ambient temperatures decrease or the required duty falls below maximum design conditions.

This feature again delivers significant reductions in operating costs to the system owner.

Noise and vibration controls have been critically reviewed and maintained at extremely low levels through modern advancements in BITZER Screw Compressor technology and innovative anti vibration methods adopted within the package.

System refrigerant loss integrity has been enhanced through the use of pre-formed pipe work and highly robust pipe fixings providing a significant reduction in the use of mechanical joints.

An optional fully integrated electrical system, complete with all component wiring and micro processor controller, can be provided for compressor control management and safety monitoring of the compressor under all operating conditions.

The BITZER CSH micro processor control has a number of active functions to bring the compressor back to a safe operating condition prior to reaching the safety shutdown mode.

With extensive Bitzer Australia technical support throughout our National branch network, you can be assured of professional assistance during the installation and operation of your project.

# ComMECH Series features



The large volume liquid receiver is fitted with full port flanged service valves, three sight glasses for liquid indication and a safety pressure relief valve.

A liquid by-pass assembly can also be installed to reduce the required refrigerant charge during normal operation.

The main liquid line is fitted with a generously sized multiple core drier shell, charging valve, moisture indicator and isolation valves, plus the option of a fully prepared Economizer assembly (Liquid sub cooling heat exchanger assembly).

The suction line has a multiple core filter shell with access valve for additional compressor protection.

Discharge, suction and liquid lines are securely fixed to the rigid base frame assisting vibration minimization.

All connections are positioned externally of the package for direct connection to the air handler and Buffalo LDV or VB Series Air Cooled Condensers.



The ComMECH Series can also be equipped with a powder coated weather proof enclosure with six individual access doors, allowing direct access to all major service components resulting in reduced maintenance time.

The durable weather proof enclosure allows for the package to be installed in external locations, such as a roof top condenser deck where it is directly connected to the air cooled condenser.

The external enclosure is lined with sound absorbing high density foam to assist in meeting the most stringent sound and environmental conditions.

The frame structure provides built in fork lift access and crane lifting points for safe handling during transport and installation.



## Water Cooled Packages are also available

The liquid receiver can be replaced by a BITZER Shell & Tube Water Cooled Condenser / Heat Exchanger, individually engineered to suit your project specification. The Shell & Tube Condenser is fully piped within the package ready for commissioning.

The condensers are equipped with removable water side end caps for maintenance cleaning and are also reversible providing flexibility for water connection.

### Type designation

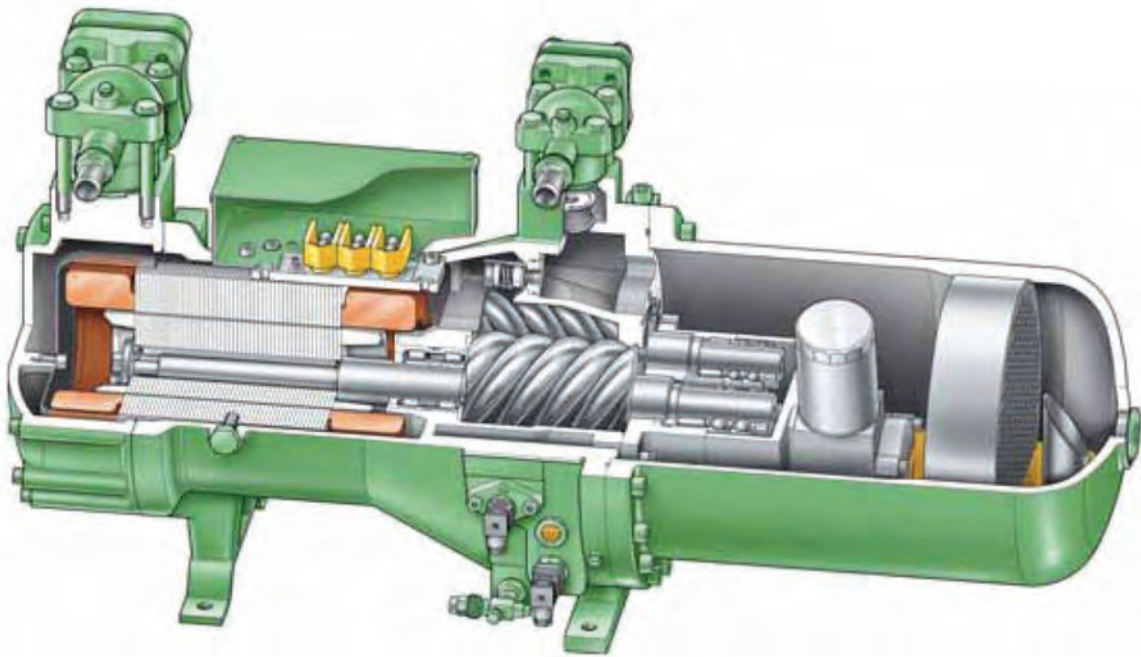
CSH7571-90-Y-45P  
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CSH7571-90-Y-45P  
CSH7571-90-Y-45P

semi hermetic screw compressor  
housing size  
code for displacement  
compressor execution (1 = standard )  
code for motor size  
oil charge (polyol ester for R134a and R407C )  
motor code





# BITZER CSH Screw Compressor design features



BITZER Compact Screws are of two-shaft rotary displacement design with newly developed profile geometry. The main parts are male and female rotors, fitted into an enclosed housing precisely located at both ends in roller contact bearings (radial and axial).

Owing to the specific design this type of compressor does not require any working valves. To protect against reverse running when the compressor is switched off (expansion operation) a check valve is incorporated in the discharge chamber.

An internal pressure relief valve is fitted providing over pressure protection.

The compressor is driven by a three-phase asynchronous motor which is built into the compressor housing. The motor rotor is located directly on the shaft of the male screw rotor.

Motor cooling is achieved by the returning cold refrigerant vapour which mainly flows through the bores in the motor rotor.

## The deciding technical features are

### Balanced product range

- 8 basic models (5 featured in this package option)
- Tight performance graduation

### Universal applications

- R134a, R407C
- R404A, R507A and R22 available on request
- With or without Economizer Operation
- Motor (Version 2) available especially matched for R134a

### Proven long-life bearings with pressure unloading

- Robust axial bearings in tandem configuration
- Bearing chamber pressure isolated by seal rings
- Pressure unloading of axial bearings

### Optimized oil management

- Three stage oil separator
- Long-life fine 10um mesh size oil filter
- Pressure relieved bearing chamber ensuring minimum refrigerant dilution into the oil thus providing higher oil viscosity

### Flexible application with additional cooling

- Direct liquid injection
- External oil cooler for extended application and highest efficiency

### Dual capacity control

- Infinite or 4-step control with Vi compensation
- Simple control by flanged solenoid valves
- Automatic start unloading

### Economizer with sliding suction position

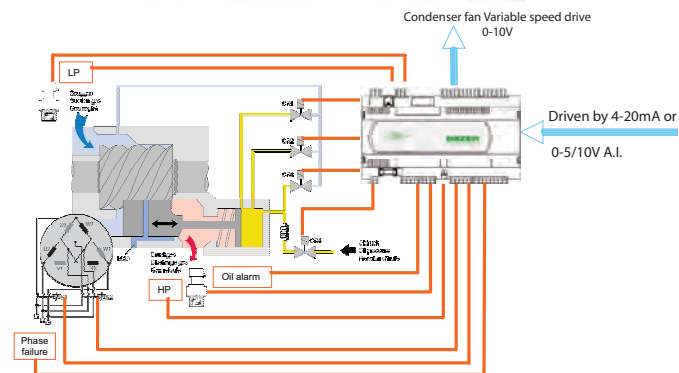
- Unique for compact screws
- Highest cooling capacity and energy efficiency at full and part load conditions

# Electrical Control / Compressor Management Option

An optional fully integrated electrical system, complete with all component wiring and Microprocessor controller can be provided for the direct control, management and safety monitoring of the **BITZER ComMECH** Compressor package.

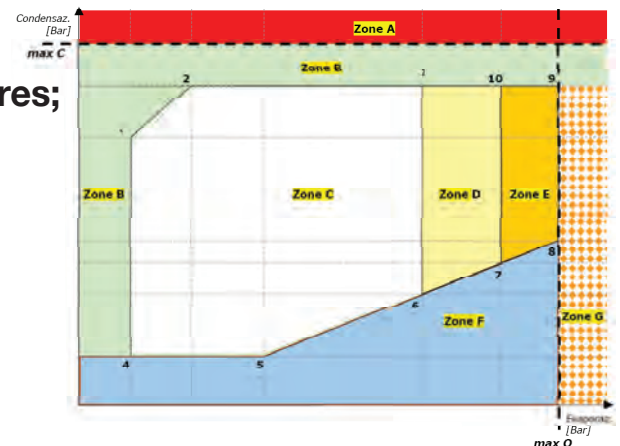
## The unique BITZER micro-processor includes the following features;

- The programming logic included in the BITZER Macro block is specifically designed for the BITZER CSH Semi Hermetic Screw Compressor.
- Utilizes all mechanical safety controls supplied as standard with compressor.
- Management of part winding start.
- 4 step capacity control regulation or Step less capacity control.
- Start unloading.
- Economizer / liquid injection control.
- Application limit protection.
- Start up with high temperature (after long off time).
- Oil level alarm.
- Phase fail digital input.
- Timing protection (even after blackout).
- In the event of a failed start the compressor is allowed 2 additional restarts before it locks out.



## Electrical Panel includes the following features;

- Quality switch gear and componentry
- Full wiring diagrams included
- Prepared and installed by qualified electricians
- Australian standards approved
- Reduction of site installation costs
- Generously sized cabling
- Terminal identification



Zone A – above the maximum condenser temp, stop compressor immediately.

Zone B – limit to 75% allowed for 1 minute then if no in Zone C then immediate compressor shut down.

Zone C – Capacity is unlimited and solely controlled by request.

Zone D – Unlimited time with a limit of 75% capacity.

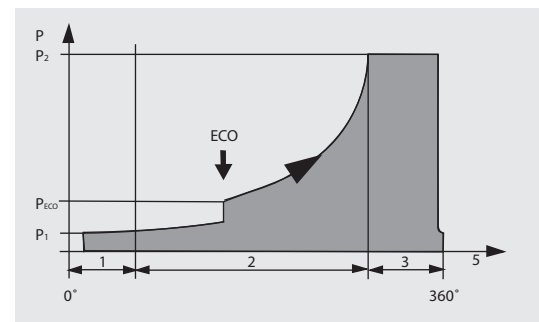
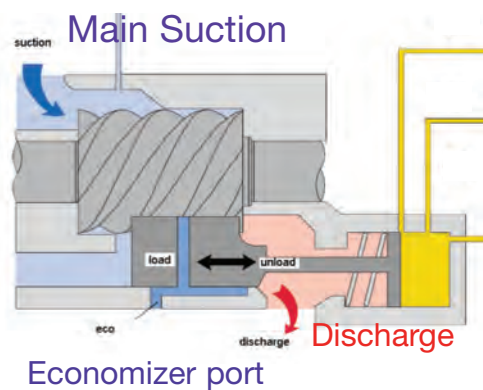
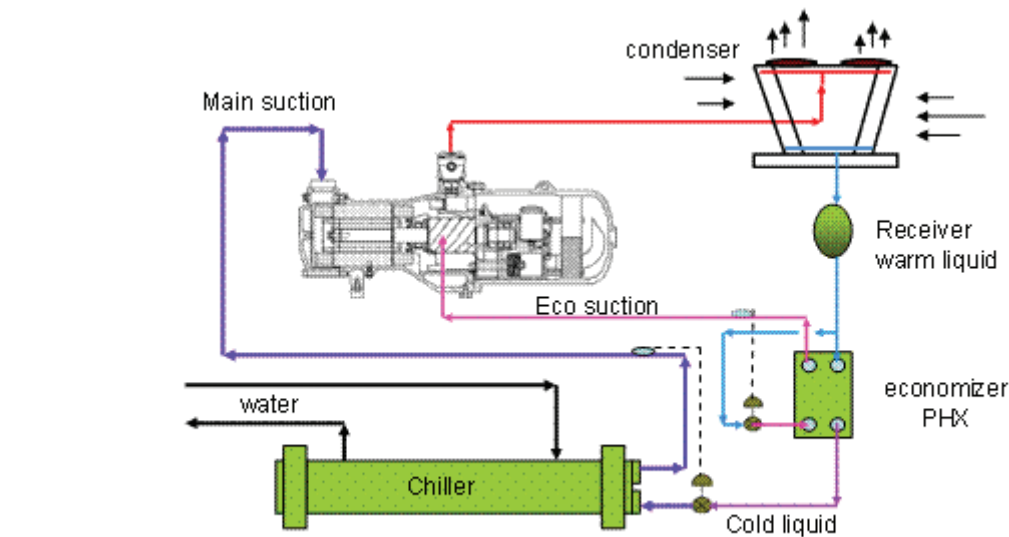
Zone E – Limit of 50% capacity and a time limit of 10 minutes. If not back in zone C then immediate compressor shut down.

Zone F – unlimited capacity for 1 minute max. If not in zone C then immediate compressor shut down.

Zone G – If reached when the unit is operational then immediate compressor shutdown. At start the capacity is 50% limited for a maximum of 5 minutes. If not back in zone C then shutdown comp.



# Economiser Operation with Subcooling Circuit



suction      compression      discharge

The ease and efficiency of liquid sub-cooling is one of the special features of the Bitzer CSH screw compressor which confirms its superiority above similar semi-hermetic screw compressors in the market today.

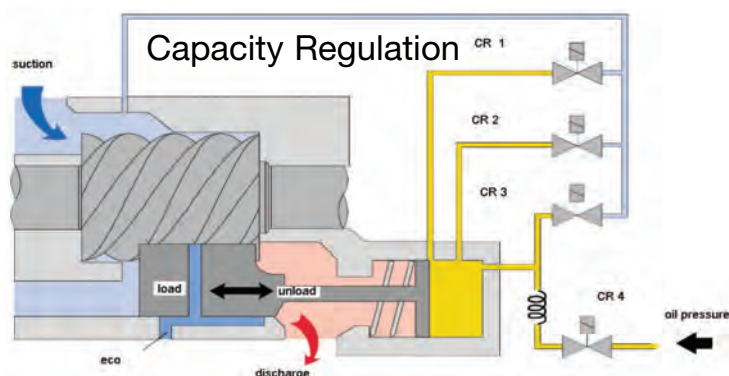
A part of the refrigerant mass flow from the condenser enters the sub-cooler via an expansion device, and evaporates upon absorbing heat from the counter flowing liquid refrigerant (sub-cooling).

The superheated vapour is taken in at the compressor's ECO connection, mixed with the mass flow from the evaporator and compressed to a high pressure.

The ECO connection enters the compression chamber through the loading slide valve. This allows the sub-cooling heat exchanger to operate on a consistent evaporation temperature ensuring minimal sub cooled liquid temperature changes with-out the use of other evaporator control valves.

This design provides an overall balanced and stable system operation even during part load conditions.

## Capacity Control



Solenoid 1,2 & 3 vent oil to suction in stages to allow the piston to move the slide valve towards the discharge end of the compressor which is the unload position.

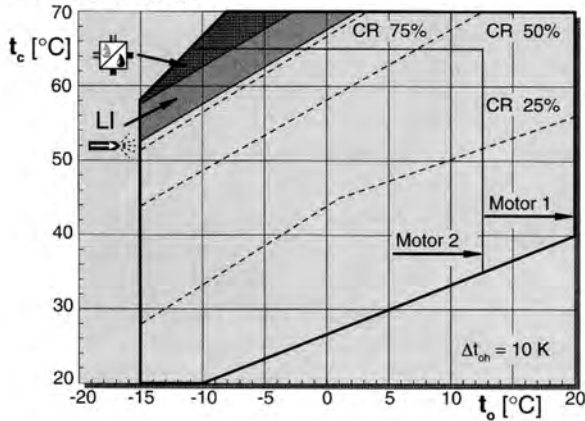
Solenoid 4 adds oil to hydraulic cylinder to move the slide valve towards the suction end of the rotors which loads the compressor



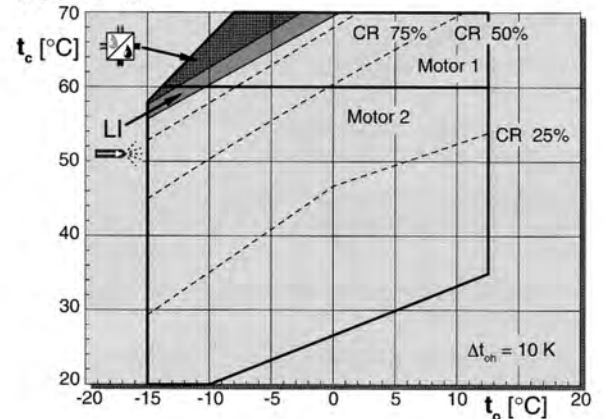
# Application Limits

Application Limits Data Based on 20°C Suction Gas Temperature

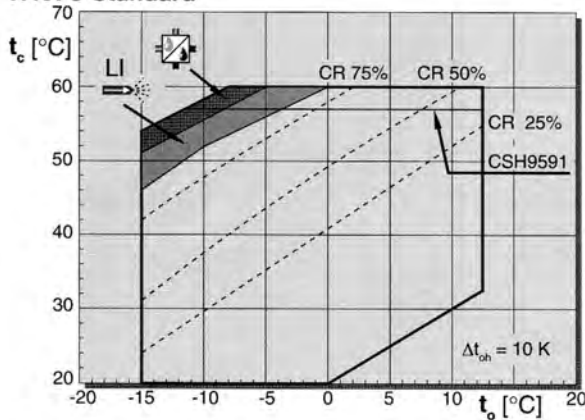
**R134a Standard**



**R134a ECO**

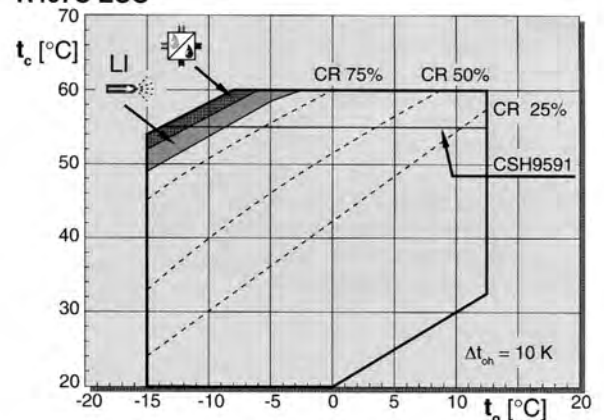


**R407C Standard**



Data are based on dew point

**R407C ECO**



Data are based on dew point

## Capacity Control

Step less capacity control 100% to 25% range

CR	1	2	3	4
Start / stop				
CAP ↑				•
CAP ↓			•	
←→				

- solenoid de-energized
- solenoid energized
- solenoid pulsing
- solenoid intermittent

CAP 25%\*  
 CSH6561-7571: 25%  
 CSH6551-7561: 30%  
 CSH7551:35%

Step less capacity control 100% to 50% range

CR	1	2	3	4
Start / stop				
CAP ↑				•
CAP min 50% ↓		•		
←→				

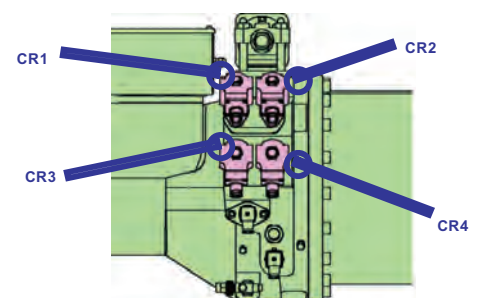
### CAP cooling capacity

CAP ↑ CAP increase  
 CAP ↓ CAP decrease  
 CAP ←→ CAP constant

The application ranges  
 with capacity control  
 are restricted!  
 Refer application manual

4 step capacity control

CR	1	2	3	4
Start / stop				
CAP 25%*			•	•
CAP 50%				•
CAP 75%				•





# Compressor Capacities R134a

## R134a STANDARD

Performance based on 10K suction gas superheat without liquid subcooling

MODEL	Cond. temp	Cooling capacity Qo [watt]								Power consumption Pe [kW]							
		Evaporation tempertaure															
		12.5	10	7.5	5	0	-5	-10	-15	12.5	10	7.5	5	0	-5	-10	-15
CSH6551-35Y	30				96100	78900	64100	51400	40500				16.6	16.0	15.6	15.2	14.9
	40	115100	104700	95100	86200	70200	56400	44600	34500	20.7	20.4	20.0	19.7	19.1	18.5	18.0	17.6
	48	104100	94400	85500	77100	62300	49500	38600	29200	23.7	23.4	23.0	22.7	22.0	21.4	20.9	20.4
	50	101100	91700	82900	74700	60200	47650	36950	27850	24.6	24.2	23.9	23.6	22.9	22.3	21.7	21.2
	55	93500	84500	76200	68500	54700	42950	32900		26.9	26.6	26.2	25.9	25.2	24.6	24.0	
CSH6561-40Y	30				119600	98100	79700	64100	50800				20.8	19.9	19.1	18.5	18.1
	40	142800	130000	118100	107000	87300	70400	5610	43850	26.3	25.7	25.1	24.5	23.5	22.6	21.9	21.4
	48	129000	117200	106200	96000	77900	62300	49100	37800	29.6	29.0	28.5	28.0	27.0	26.2	25.5	24.9
	50	125400	113800	103100	93200	75400	60200	47250	36200	30.6	30.0	29.5	29.0	28.0	27.2	26.5	26.0
	55	116200	105400	95300	85900	69200	54900	42600		33.3	32.8	32.3	31.8	31.0	30.2	29.7	
CSH7551-50Y	30				143400	117300	94900	75700	59500				25.4	24.8	24.0	23.2	22.6
	40	170500	154800	140200	126700	102600	81900	64200	49300	31.4	31.1	30.7	30.2	29.1	28.0	27.1	22.6
	48	151700	137300	123800	111400	89200	70200	54100	40500	36.1	35.5	34.8	34.2	32.9	31.8	31.0	30.7
	50	146800	132600	119500	107400	85700	67200	51500	38300	37.3	36.7	36.0	35.3	34.0	32.9	32.2	32.1
	55	133900	120600	108300	970000	76700	59500	44850		40.6	39.9	39.2	38.5	37.2	36.3	35.5	
CSH7561-60Y	30				167200	137200	111400	89400	70500				27.7	26.8	26.0	25.5	25.0
	40	199000	181100	164500	149100	121400	97600	77200	59700	34.9	34.2	33.6	33.0	32.0	31.0	30.2	29.5
	48	178900	162400	147000	132700	107100	85100	66200	49900	40.0	39.4	38.8	38.2	37.1	36.0	35.1	34.3
	50	173600	157500	142400	128400	103300	81800	63200	47300	41.5	40.9	40.3	39.7	38.5	37.5	36.5	35.7
	55	159900	144600	130400	117200	93500	73100	55500		45.6	45.0	44.4	43.7	42.6	41.5	40.5	
CSH7571-70Y	30				185800	152400	123900	99600	79000				31.7	30.1	28.9	28.0	27.4
	40	221300	20150	183000	165900	135300	109100	86700	67800	40.7	39.6	38.6	37.7	36.0	34.5	33.4	32.6
	48	199500	181200	164200	148400	120200	96100	75500	58100	46.3	45.5	44.4	43.5	41.7	40.2	39.0	38.4
	50	193800	175900	159300	143900	116300	92700	72600	55500	48.0	47.0	46.1	45.1	43.4	41.9	40.8	40.3
	55	179200	162400	146800	132300	106300	84100	65200		52.6	51.7	50.8	49.9	48.2	46.8	46.0	
CSH7581-80Y	30				217000	177900	144400	116000	92100				37.1	35.2	33.5	32.1	31.3
	40	259000	235000	213000	193300	157200	126500	100500	78600	48.0	46.6	45.3	44.2	42.2	40.7	39.5	38.5
	48	234000	212000	191600	172700	139200	110600	86400	66.1	54.7	53.2	52.0	50.9	49.2	47.9	46.6	45.0
	50	227000	206000	185800	167300	134400	106300	82700	62.8	56.5	55.1	53.8	52.8	51.1	49.8	48.4	46.6
	55	210000	189900	170800	153200	121800	95200	72700	53900	61.5	60.1	58.9	57.9	56.3	54.8	53.1	50.6
CSH7591-90Y	30				236000	194300	158400	128000	92100				41.6	39.5	38.0	36.9	31.3
	40	284000	258000	235000	213000	173800	140600	112500	88800	51.7	50.7	49.7	48.9	47.4	46.1	44.9	43.7
	48	258000	234000	212000	191900	155500	124500	98300	76300	59.5	58.6	57.8	57.0	55.5	54.1	52.5	50.7
	50	252000	228000	206000	186400	150600	120200	94500	72900	61.9	61.0	60.1	59.3	57.8	56.3	54.6	52.6
	55	234000	212000	191100	171900	137800	108800	84300	63800	68.6	67.6	66.7	65.8	64.0	62.1	59.9	57.4

Performance data based on 50 Hz

Additional cooling required and/or limited capacity regulation.

Out of application range data on request

## R134a ECONOMISED

Performance based on R134a economized operation with 10 K suction gas superheat and 10K temp diff (Tcu-Tms) across heat exchanger

MODEL	Cond. temp	Cooling capacity Qo [watt]								Power consumption Pe [kW]							
		Evaporation tempertaure															
		12.5	10	7.5	5	0	-5	-10	-15	12.5	10	7.5	5	0	-5	-10	-15
CSH6551-35Y	30				100700	85000	71000	58700	47700				17.0	16.5	16.5	16.5	16.4
	40	121800	112300	103300	94900	79500	66000	54000	43300	21.4	21.2	21.0	20.9	20.6	20.4	20.2	20.0
	48	114400	105200	96600	88500	73700	60700	49200	39000	25.2	25.0	24.9	24.8	24.5	24.3	24.0	23.7
	50	112200	103200	94600	86600	72100	59200	47900	37800	26.3	26.1	26.0	25.9	25.6	25.2	25.1	24.8
	55	106400	97600	89400	81700	67700	55300	44400	34600	29.3	29.2	29.1	28.9	28.7	28.4	28.1	27.7
CSH6561-40Y	30				122000	103000	86100	71200	58300				21.0	20.3	19.8	19.5	15.4
	40	147000	135000	124900	114800	96300	80000	65800	53400	26.6	26.1	25.7	25.3	24.7	24.2	23.8	23.6
	48	137900	127000	116700	107000	89400	74000	60500	48600	30.6	30.2	29.9	29.6	29.0	28.6	28.3	28.0
	50	135300	124500	114400	104900	87600	72400	59000	47200	31.7	31.4	31.1	30.8	30.3	29.9	29.6	29.3
	55	128400	118000	108300	99200	82700	68100	55200	43700	35.0	34.7	34.5	34.3	33.9	33.6	33.4	33.1
CSH7551-50Y	30				152100	127900	106500	87700	71200				26.2	26.0	25.7	25.3	24.9
	40	183200	168700	155100	142300	118700	98000	79600	63500	32.7	32.7	32.6	32.4	31.9	31.3	30.8	30.3
	48	170900	157000	143900	131600	109100	89100	71500	55900	38.9	38.7	38.4	38.2	37.5	36.8	36.3	36.1
	50	167400	153700	140800	128600	106400	86700	69200	53800	40.6	40.4	40.1	39.8	39.1	38.5	38.0	37.8
	55	157900	144700	132300	120600	99100	80100	63200		45.3	45.1	44.7	44.4	43.7	43.2	42.8	
CSH7561-60Y	30				174900	147500	123200	11800	83000				28.4	27.9	27.8	27.7	27.6
	40	210000	194200	178800	164300	137800	114400	93600	752000	36.0	35.8	35.5	35.3	35.0	34.7	34.5	34.1
	48	197300	181700	167000	135100	127700	105200	85100	76200	42.9	42.8	42.7	42.6	42.4	42.0	41.6	43.8
	50	193600	178100	163600	149900	124900	102600	82700	64800	45.0	44.9	44.9	44.8	44.5	44.2	43.6	42.9
	55	183400	168600	154500	141300	117100	95400	75900	58200	50.8	50.9		50.8	50.6	50.1	49.4	48.4
CSH7571-70Y	30				189300	160000	134000	111100	91100				31.9	30.7	30.0	29.6	29.5
	40	228000	211000	194100	178600	150200	125100	103000	83700	41.4	40.3	39.6	39.0	37.9	37.1	36.6	36.3
	48	215000	197900	182100	167200	140100	116100	95000	76200	47.9	47.4	46.8	46.3	45.3	44.5	44.0	43.8
	50	211000	194300	178700	164100	137300	113600	92700	74200	50.0	49.4	48.9	48.4	47.5	46.8	46.3	46.1
	55	201000	184700	169700	155600	129900	107100	86800	68800	55.7	55.3	54.9	54.5	53.7	53.1	52.9	53.0
CSH7581-80Y	30				226000	189700	158100	130500	106700				37.9	36.6	35.4	34.6	34.3
	40	270000	250000	230000	211000	176100	145900	119600	96900	49.3	48.3	47.4	46.7	45.6	44.9	44.4	43.9
	48	255000	234000	214000	195900	162700	133800	108600	86600	57.9	57.0	56.3	55.8	55.2	54.7	54.0	52.8
	50	250000	229000	210000	191800	159000	130400	105400	83600	60.4	59.5	58.9	58.5	57.9	57.4	56.6	55.1
	55	237000	217000	198200	180700	148900	121000	96700	75400	67.4	66.7	66.2	65.9	65.4	64.7	63.4	60.9
CSH7591-90Y	30				240000	203000	170200	141400	116500				41.8	40.2	39.2	38.7	38.5
	40	291000	268000	247000	227000	190800	159000	131400	107500	52.2	51.4	50.8	50.3	49.6	49.0	48.5	47.9
	48	275000	253000	233000	213000	178200	147500	120900	97700	61.2	60.8	60.4	60.1	59.5	58.9	58.0	56.8
	50	271000	249000	228000	209000	174500	144200	117800	94900	64.0	63.6	63.2	62.9	62.3	61.6	60.7	59.2
	55	258000	237000	217000	198300	164600	135100	109300	86800	71.9	71.5	71.1	70.7	70.0	69.0	67.5	65.4





# Compressor Capacities R407C

## R407C STANDARD

Performance based on 10K suction gas superheat without liquid subcooling

MODEL	Cond. temp °C	Cooling capacity Qo [watt]								Power consumption Pe [kW]							
		Evaporation tempertaure															
		12.5	10	7.5	5	0	-5	-10	-15	12.5	10	7.5	5	0	-5	-10	-15
CSH6551-50Y	30		166900	152800	139600	115900	95400	77700	62400		26.7	25.9	25.2	24.0	23.0	22.2	21.5
	40	163600	149600	136500	124300	102400	83300	66900	52700	33.1	32.0	31.1	30.3	29.0	28.0	27.2	26.2
	48	145900	133100	121100	109800	89600	72000	56600	43100	37.6	36.8	36.1	35.4	34.2	33.1	31.9	3.7
	50	141200	128700	116900	106000	86100	68800	72300	40400	38.8	38.2	37.5	36.9	35.6	34.4	33.2	32.0
	55	128900	117200	106100	95800	77000	60500	45750		42.4	41.9	41.3	40.7	39.3	37.9	36.5	
CSH6561-60Y	30		206200	188700	172500	143200	117800	95900	77000		32.4	31.6	30.8	29.4	28.2	27.2	26.4
	40	201600	184500	168500	153600	126800	103600	83600	66300	40.7	39.3	38.2	37.2	35.6	34.5	33.6	32.7
	48	180100	164900	150000	136500	112100	90800	80700	56200	43.6	45.3	44.4	43.5	42.2	41.0	40.0	39.0
	50	174400	159300	145200	132000	108200	87400	69200	53300	47.9	47.0	46.2	45.4	44.1	42.9	41.8	40.8
	55	160000	146000	132800	120400	98000	78300	60800		52.6	51.9	51.3	50.6	49.3	48.1	46.9	
CSH7551-70Y	30		241200	220000	201600	167200	137500	111800	89700		38.0	36.8	35.8	34.1	32.7	31.5	30.4
	40	235500	215200	196100	178800	147100	119700	95900	75400	45.9	44.9	43.9	43.2	41.8	40.7	39.8	38.9
	48	210000	191800	174400	158100	128700	103000	80700	61000	52.6	52.0	51.4	50.8	49.7	48.5	47.4	46.1
	50	204300	186000	168600	152900	123900	98600	76500	56900	54.7	54.2	53.6	53.2	52.0	50.7	49.4	47.9
	55	187300	170000	153400	138400	110700	86200	64500		60.6	60.4	59.9	59.4	58.0	56.3	54.2	
CSH7561-80Y	30		282700	259000	236500	196400	161600	131600	105700		44.3	42.9	41.7	39.7	38.1	36.8	35.7
	40	277200	253500	231000	210700	173500	141300	113500	89400	54.8	53.0	51.5	50.2	48.1	46.5	45.0	43.5
	48	247000	226000	205000	186300	152000	122200	96200	73500	62.3	61.0	59.8	58.7	56.7	54.8	52.9	50.9
	50	239500	218200	198300	179800	146200	117000	91400	68900	64.4	63.2	62.1	61.1	59.0	57.0	55.0	53.0
	55	218800	198900	180200	162700	130900	102900	78100		70.3	69.5	68.5	67.4	65.1	62.7	60.5	
CSH7571-90Y	30		319900	293000	267600	222200	182900	148900	119600		49.2	47.9	46.7	44.6	42.8	41.4	40.1
	40	312900	286400	262000	238500	196900	160900	129900	103000	61.7	59.7	57.9	56.4	54.1	52.3	51.0	49.6
	48	280000	256000	233000	212000	174200	141200	112500	87500	70.3	68.7	67.3	66.1	64.0	62.2	60.7	59.2
	50	271000	247600	226000	205100	168200	135900	107800	83100	72.7	71.3	70.1	68.9	66.9	65.1	63.5	62.0
	55	248700	226900	206000	187300	152500	121900	94800		79.8	78.8	77.8	76.8	73.0	71.2		

Performance data based on 50 Hz

Additional cooling required and/or limited capacity regulation.

Out of application range data on request

## R407C ECONOMISED

Performance based on R407C economized operation with 10 K suction gas superheat and 10K temp diff (Tcu-Tms) across heat exchanger

MODEL	Cond. temp °C	Cooling capacity Qo [watt]								Power consumption Pe [kW]							
		Evaporation tempertaure															
		12.5	10	7.5	5	0	-5	-10	-15	12.5	10	7.5	5	0	-5	-10	-15
CSH6551-50Y	30			153300	142300	212400	102600	85900	71000			74.4	25.4	24.6	24.1	23.8	23.5
	40	169000	156600	144800	133600	113000	94600	78300	63800	33.6	32.9	32.2	31.8	31.1	30.7	30.3	29.8
	48	157100	145100	133800	123100	103400	85800	69900	555000	39.4	39.0	38.7	38.4	37.9	37.3	36.6	35.7
	50	153500	141800	130600	120100	100600	83200	67400		41.1	40.8	40.6	40.3	39.8	39.1	38.4	
	55	144000	132700	122100	111900	93100	75900			45.8	45.8	45.6	45.4	44.7	43.9		
CSH6561-60Y	30					145800	123500	103400	85500					29.6	28.9	28.4	28.0
	40		187300	173700	160600	136200	114500	95100	77900		39.5	38.7	38.0	37.1	36.6	36.2	35.8
	48	188400	174500	161200	148700	125500	104900	86400	69700	47.3	46.7	46.1	45.7	45	44.5	44.1	43.6
	50	184400	170700	157600	145300	122500	102200	83800		49.3	48.7	48.3	47.9	47.7	46.9	46.4	
	55	173500	160400	148000	136200	114400	94600			54.9	54.7	54.5	54.3	53.8	53.2		
CSH7551-70Y	30			224000	208000	117100	149700	125400	103600			37.1	36.4	35.4	34.7	34.2	33.7
	40	246000	229000	212000	195400	165600	138900	115000	93400	47.2	46.6	46.2	45.9	45.6	45.4	45.1	44.7
	48	232000	215000	198100	182400	153300	127000	103100	81100	56.4	56.5	56.5	56.5	56.5	56.2	55.5	54.3
	50	228000	221000	194200	178600	149700	123400	99300		59.3	59.5	59.6	59.7	59.6	59.1	58.2	
	55	216000	199500	183400	168100	139300	112800			67.6	68.1	68.5	68.6	68.1	66.9		
CSH7561-80Y	30			260000	241000	205000	173800	145500	120400			43.0	42.1	40.8	40.1	39.7	39.4
	40	286000	265000	245000	227000	192000	161100	133500	108800	55.7	54.5	53.6	52.9	52.1	51.7	51.3	50.5
	48	267000	247000	228000	210000	176800	147000	120000	95400	66.0	65.6	65.3	65	64.6	64.1	63.1	61.4
	50	261000	242000	223000	205000	172400	142800	115900		69.1	68.9	68.8	68.6	68.2	67.6	66.3	
	55	246000	227000	209000	195200	160200	131000			78.1	78.5	78.7	78.7	78.1	76.9		
CSH7571-90Y	30					226000	191800	160900	133300					44.9	43.9	43.2	42.7
	40		291000	270000	250000	212000	179100	149300	122600		60.0	58.7	57.7	56.4	55.8	55.4	54.9
	48	293000	272000	252000	233000	197400	165500	136800	110700	71.9	71.0	70.3	69.8	69.1	68.6	68.1	67.4
	50	288000	267000	247000	228000	193200	161600	133100		75.0	74.3	73.8	73.4	72.8	72.3	71.8	
	55	272000	252000	233000	215000	181500	150700			83.9	83.9	83.8	83.6	83.2	82.7		

Performance data based on 50 Hz

Additional cooling required and/or limited capacity regulation.

Out of application range data on request

## SOUND DATA

### Sound power and sound pressure levels for CSH screw compressors

Compressor	Sound power level [dB(A)]			Sound pressure level [dB(A)] 1 metre*			Sound pressure level [dB(A)] 3 metres*		
5SST 50SCT	Load status	R407C	R134a	Load status	R407C	R134a	Load status	R407C	R134a
CSH 6551-35Y	100%		82.80	100%		74.80	100%		65.30
CSH 6551-50Y	100%	85.10		100%	77.10		100%	67.00	
CSH 6561-40Y	100%		84.30	100%		76.30	100%		66.80
CSH 6561-60Y	100%	87.30		100%	79.30		100%	69.80	
CSH 7551-50Y	100%		85.80	100%		77.80	100%		68.30
CSH 7551-70Y	100%	78.60		100%	79.60		100%		
CSH 7561-60Y	100%		85.70	100%		77.70	100%		68.20
CSH 7561-80Y	100%	87.00		100%	80.00		100%	70.50	
CSH 7571-70Y	100%		85.90	100%		77.90	100%		68.40
CSH 7571-90Y	100%	87.40		100%	80.40		100%	70.90	
CSH 7581-80Y	100%		86.10	100%		78.10	100%		68.60
CSH 7591-90Y	100%		86.10	100%		78.10	100%		68.60

### One-third octave bands

Compressor model	One-third octave band [dB(A)]								Sound pressure level 2) 3) [dB(A)]
		125	250	500	1000	2000	4000	8000	
CSH 6551-35Y	R134a	29.6	59.1	79.3	77.5	66.4	57.8	50.6	74.8
CSH 6551-50Y	R407C	27.7	60.9	76.0	72.0	67.3	63.0	54.1	77.1
CSH 6561-40Y	R134a	31.2	60.3	80.4	79.3	69.0	58.9	50.3	76.3
CSH 6561-60Y	R407C	34.1	65.7	78.3	79.1	77.6	67.3	52.8	79.3
CSH 7551-50Y	R134a	43.3	70.7	80.3	74.0	72.0	61.8	51.7	77.8
CSH 7551-70Y	R407C	42.8	69.1	78.6	80.6	76.5	67.3	54.3	79.6
CSH 7561-60Y	R134a	45.8	75.1	77.8	80.7	72.2	62.1	50.1	77.7
CSH 7561-80Y	R407C	42.3	70.5	78.6	81.3	75.7	67.3	54.6	80.0
CSH 7571-70Y	R134a	37.0	72.8	76.6	76.3	75.9	64.4	55.9	77.9
CSH 7571-90Y	R407C	39.3	71.9	82.2	79.4	76.1	66.1	55.2	80.4
CSH 7581-80Y	R134a	31.3	70.0	78.2	79.1	72.9	63.8	55.4	78.1
CSH 7591-90Y	R134a	44.8	70.1	77.6	77.8	74.1	61.2	50.0	78.1

1) One-third octave band of the sound power level (Test data based on EN ISO 9614-2)

2) \*Based on freefield area with semi-spherical sound emission in 1m distance

3) \*Corrected to 3.0 metres distance to accordance to Australian standard.

4) Tolerance  $\pm 2$ dB(A)

5) Noise emission will vary on capacity load status of compressor. Data based on 100% loaded.

6) Sound data for panelized unit to be available when testing is completed

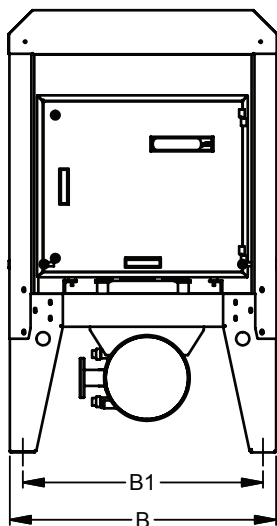
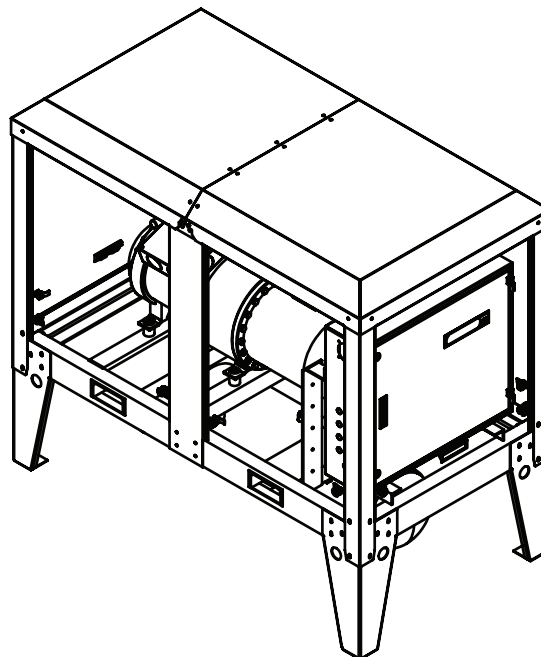
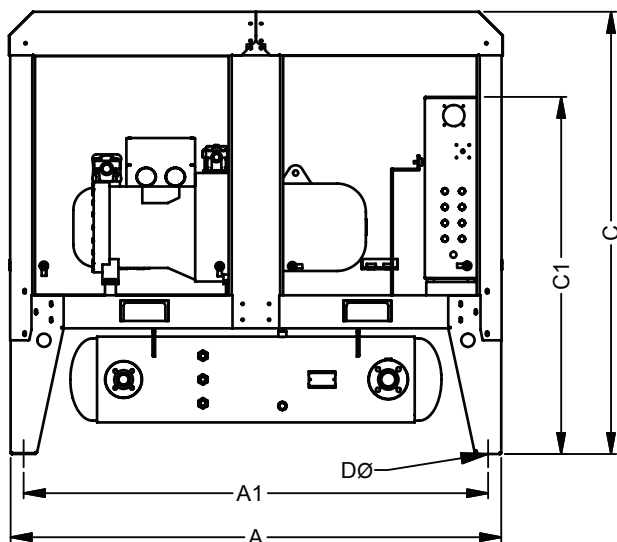
7) Basis: R407C/R134a, 50Hz, to/tc=+5/50°C

## Technical Data

compressor type	motor version	oil charge BSE170	unit weight in kg	Capacity steps	discharge line size	condenser drain line size	suction line size	liquid line size	receiver R134a/R407C capacity kg	motor connection Δ/ΔΔ	Max operation current amps	Max power consum.	starting current Δ/ΔΔ (lock rotor) amps
CSH6551-35Y	2	9.5L	595	4 step 25,50,75, & 100% Stepless 25 to 100% (refer application limits)	1-5/8"	1-5/8"	2-1/8"	1-3/8"	103 / 90	430V (+/-10%) Δ-3-50Hz (50/50 part wind 45P)	52	34 kW	141 / 282
CSH6551-50Y	1	9.5L	603		1-5/8"	1-5/8"	2-1/8"	1-3/8"	103 / 90		73	52 kW	202 / 405
CSH6561-40Y	2	9.5L	595		1-5/8"	1-5/8"	2-1/8"	1-3/8"	103 / 90		60	41 kW	156 / 312
CSH6561-60Y	1	9.5L	603		1-5/8"	1-5/8"	2-1/8"	1-3/8"	103 / 90		97	65 kW	250 / 499
CSH7551-50Y	2	15L	793		2-1/8"	2-1/8"	3-1/8"	1-5/8"	126 / 110		73	52 kW	190 / 328
CSH7551-70Y	1	15L	808		2-1/8"	2-1/8"	3-1/8"	1-5/8"	126 / 110		115	78 kW	269 / 448
CSH7561-60Y	2	15L	801		2-1/8"	2-1/8"	3-1/8"	1-5/8"	126 / 110		91	65 kW	247 / 415
CSH7561-80Y	1	15L	812		2-1/8"	2-1/8"	3-1/8"	1-5/8"	126 / 110		133	88 kW	324 / 541
CSH7571-70Y	2	15L	808		2-1/8"	2-1/8"	3-1/8"	1-5/8"	126 / 110		115	78 kW	268 / 448
CSH7571-90Y	1	15L	820		2-1/8"	2-1/8"	3-1/8"	1-5/8"	126 / 110		150	96 kW	391 / 634
CSH7581-80Y	2	15L	815		2-1/8"	2-1/8"	3-1/8"	1-5/8"	126 / 110		133	88 kW	324 / 541
CSH7591-90Y	2	15L	820		2-1/8"	2-1/8"	3-1/8"	1-5/8"	126 / 110		150	96 kW	391 / 634

Note- motor version 2 suitable for R134a refrigerant only

## Dimensional Data



Dimensions in millimetres (mm)							
Model	A	A(1)	B	B1	C	*C1	DØ
CSH 65 Series	1655	1555	855	755	1575	1420	16
CSH 75 Series	1855	1755	1005	905	1670	1350	16

\*C1 = overall height without enclosure



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## Other Products Available-



### VB Series

- Compact design
- Evaporative pre-cooler assembly
- 4 - 10 fans (630mm & 800mm)

Three options of low noise models



### Delta Series B

- Durable, marine grade housing
- 4-10 fans (500mm, 630mm & 800mm)

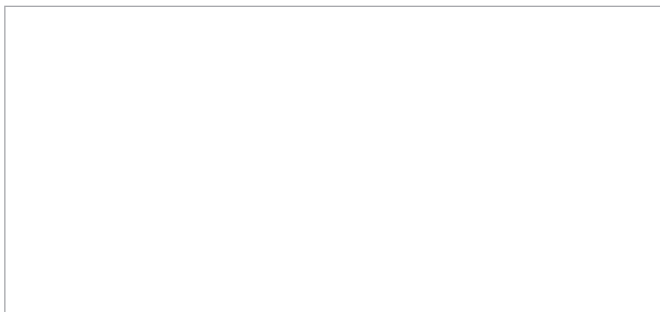
Statically and dynamically balanced fans for economic and quiet operation



### FMC Series

- Condensers
- Modular design
- 630mm & 800mm fans
- Quiet fan options

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