

# HITACHI SCREW COMPRESSORS

**NEW** A-series with cyclone oil separators for air conditioning

## MODELS

### *Step Capacity Control*

40ASC-H

50ASC-H

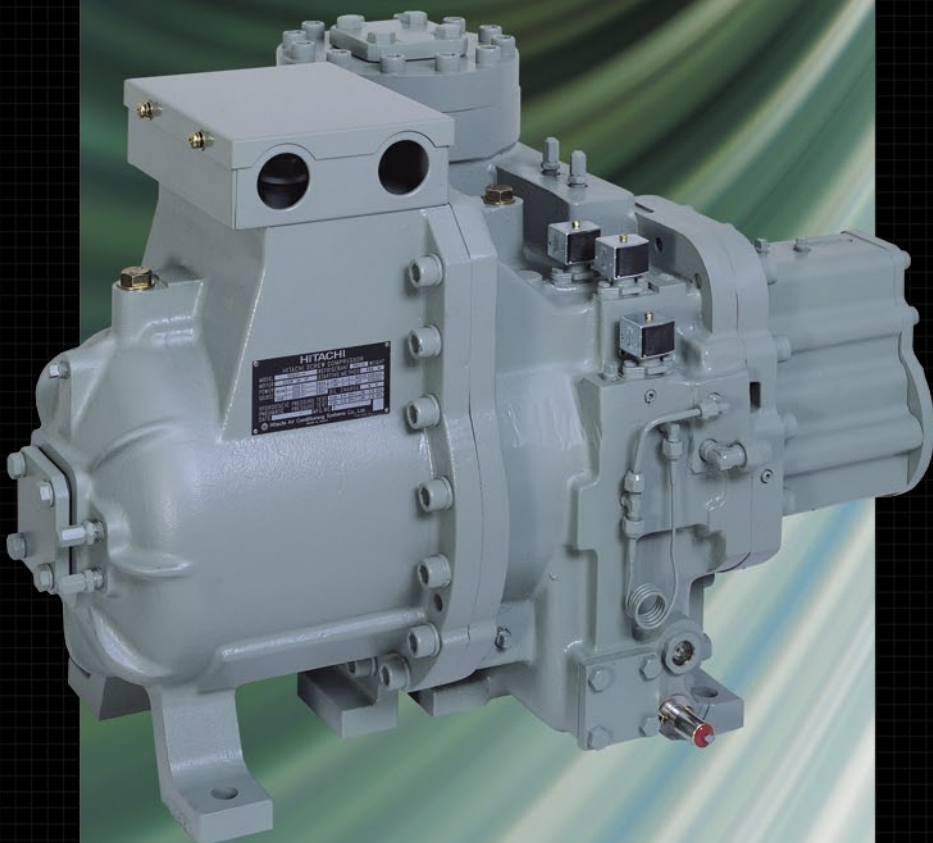
60ASC-H

### *Infinite Capacity Control*

40ASC-Z

50ASC-Z

60ASC-Z



**HITACHI**  
Inspire the Next

# HITACHI's Advanced New Screw Compressor Pursuing Low Noise, High Reliability and High Efficiency

All over the world, there is great demand for high-performance compressors to deliver high efficiency, high reliability, low noise and low vibration. Such compressors are crucial elements in the air conditioning and refrigerating industry. Hitachi's screw compressors are the ideal solution, featuring a simple construction without components such as pistons, connecting rods, valve plates, oil pumps and mechanical linkages for capacity control, which are found in reciprocating compressors. The result is low noise, low vibration and outstanding reliability.

## SPECIAL FEATURES

### Wide-range capacity control

- 15% minimum load operation

### Cyclone oil separator

- Ultra-low oil carry-out rate
- Patented swirl flow oil separation system
- No mesh wires, no demisters, no filters

### High performance

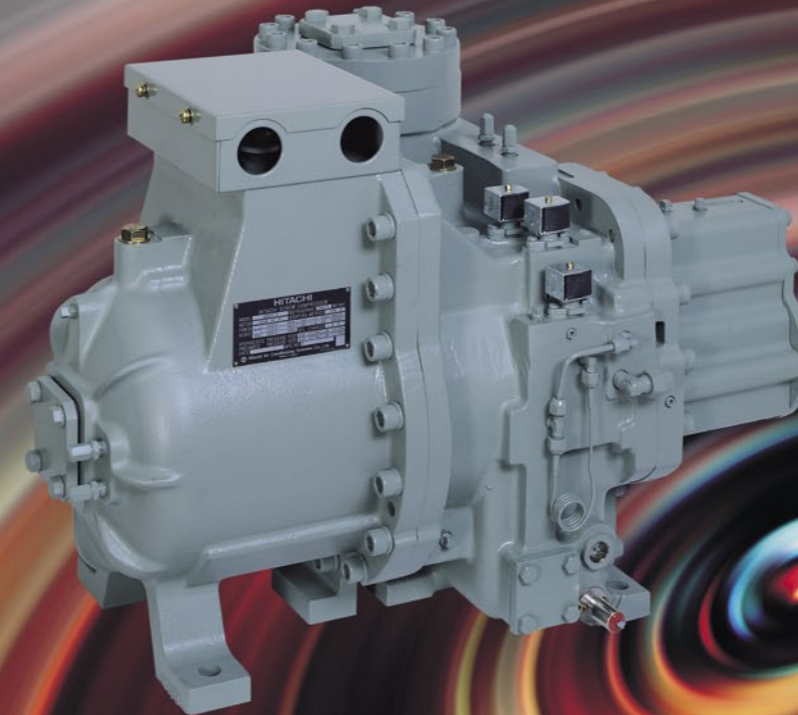
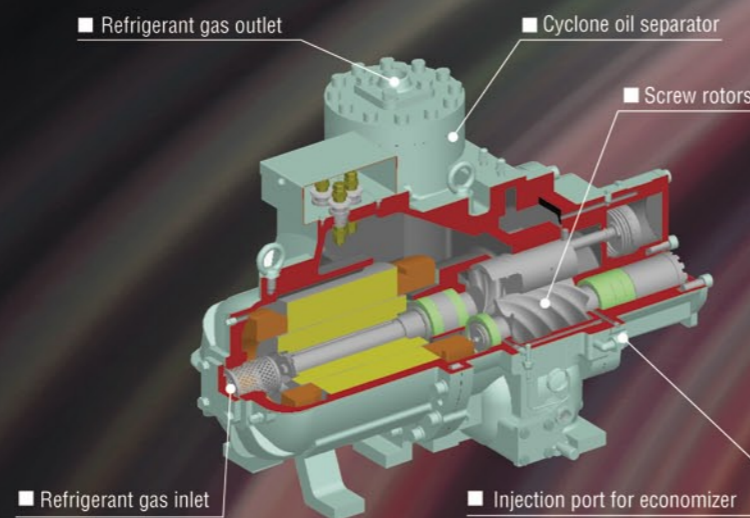
- High precision & high-grade finished screw rotors

### Multiple applications

- Universal applications for R407C, R134a, R22
- Step or infinite capacity control available
- With or without economizer

### High reliability

- Large-capacity triple/double ball bearing
- High-reliability, two-pole, large-capacity motor ensures low noise, low vibration as well as high speed running.



### Screw processing technology

Shimizu Works has secured ISO 9001 certification on quality managements system. All its products are subjected to strict testing under diverse environmental conditions. At Hitachi, quality control plays a vital role in every aspect of production from raw material processing to the final dispatching of products.



### Models :

- Step Capacity Control  
40ASC-H / 50ASC-H / 60ASC-H
- Infinite Capacity Control  
40ASC-Z / 50ASC-Z / 60ASC-Z

## GENERAL DATA

Model	Overall dimensions mm (inch)			Net weight kg (lbs)	Displacement m <sup>3</sup> /h (cfm)		Piping connections mm (inch)	
	Height	Width	Length		50Hz	60Hz	Suction	Discharge
40ASC-H 40ASC-Z	562 (22-1/8)	585.5 (23)	840 (33-1/8)	400 (882)	137.4 (80.9)	165.6 (97.5)	60.5 (2-3/8)	48.6 (1-7/8)
50ASC-H 50ASC-Z	562 (22-1/8)	595 (23-7/16)	874 (34-7/16)	440 (970)	169.5 (99.8)	204.2 (120.2)	60.5 (2-3/8)	48.6 (1-7/8)
60ASC-H 60ASC-Z	562 (22-1/8)	600 (23-5/8)	938 (36-15/16)	460 (1,014)	208.7 (122.8)	251.5 (148.0)	60.5 (2-3/8)	48.6 (1-7/8)

#### NOTES:

- The compressors are driven by a two-pole motor mounted directly on the compressors shaft, and with a rotation speed of 2,880 min<sup>-1</sup> (2,880 rpm) for 50 Hz and 3,470 min<sup>-1</sup> (3,470 rpm) for 60 Hz, at the rated voltage.
- R407C, R134a, and R22 refrigerants can be used in these compressors.
- Oil is charged in the compressors at the time of shipment.
- The capacity of the compressor can be decreased by a capacity control mechanism to 15% of the rated capacity for all models.
- Piping sizes show the external diameter of piping in mm, which is the size of the flange to be equipped on the compressors.
- The standard color is light green (Munsell code 10G 5/2). Other colors are available upon request.
- The overall dimensions and net weight are subject to change according to the order specifications.
- The shipping weight and packing dimensions are different from the values given in the above table.
- The millimeter (mm) dimensions are the original values; the inch dimensions are converted values.
- These compressors should be installed indoors or at a location equivalent to an indoor environment.
- Detailed data are available upon request.

## PERFORMANCE

Model	Cooling capacity kW (×1000 Btu/h)				Motor input kW				
	Evaporating temperature °C (°F)				Evaporating temperature °C (°F)				
	-10 (14)	-5 (23)	0 (32)	+5 (41)	-10 (14)	-5 (23)	0 (32)	+5 (41)	
50Hz	40ASC-H	76.0	94.0	115.0	139.0	28.4	29.1	30.0	31.4
	40ASC-Z	(259.3)	(320.7)	(392.4)	(474.3)				
	50ASC-H	94.0	116.0	142.0	171.0	35.0	35.9	37.0	38.7
	50ASC-Z	(320.7)	(395.8)	(484.5)	(583.5)				
60Hz	60ASC-H	115.6	143.1	174.4	210.7	43.1	44.2	45.5	47.6
	60ASC-Z	(394.4)	(488.3)	(595.1)	(718.9)				
	40ASC-H	92.0	114.0	138.0	167.0	34.2	35.0	36.1	37.8
	40ASC-Z	(313.9)	(389.0)	(470.9)	(569.8)				
60ASC-H	113.0	140.0	171.0	206.0	42.2	43.2	44.6	46.6	
	(385.6)	(477.7)	(583.5)	(702.9)					
60ASC-Z	139.0	172.0	210.0	254.0	52.0	53.2	54.9	57.4	
	(474.3)	(586.9)	(716.5)	(866.7)					

#### NOTES:

- The evaporating temperature shown in the above table indicates the saturated temperature of suction gas pressure to the compressor.
- The cooling capacity and the motor input are based on the following conditions:  
Condensing temperature: 40°C (104°F)  
Leaving liquid temperature from condenser: 35°C (95°F)  
Suction gas condition to compressor: Superheat 10°C  
Refrigerant: R407C
- The cooling capacity and the motor input at the ARI rating conditions are shown on the right.
- The data for other refrigerants (R134a and R22) are available upon request.

Model	Cooling capacity kW (×1000 Btu/h)		Motor input kW	
	50Hz	60Hz	50Hz	60Hz
40ASC-H 40ASC-Z	121.7 (415.3)	146.7 (500.6)	30.1	36.3
50ASC-H 50ASC-Z	150.2 (512.5)	180.9 (617.3)	37.2	44.8
60ASC-H 60ASC-Z	184.9 (630.9)	222.8 (760.2)	45.8	55.2

#### NOTES:

- The standard ratings are based on the following conditions:  
Condensing temperature: 54.4°C (130°F)  
Leaving liquid temperature from condenser: 46°C (115°F)  
Evaporating temperature: 7.2°C (45°F)  
Suction gas temperature to compressor: 18.3°C (65°F)

## WORKING RANGE

The standard working range is as follows:

Evaporating temperature:  $-10^{\circ}\text{C}$  to  $+8^{\circ}\text{C}$  ( $14^{\circ}\text{F}$  to  $47^{\circ}\text{F}$ )  
 Condensing temperature:  $35^{\circ}\text{C}$  to  $55^{\circ}\text{C}$  ( $95^{\circ}\text{F}$  to  $131^{\circ}\text{F}$ )  
 Suction gas superheat:  $5^{\circ}\text{C}$  to  $15^{\circ}\text{C}$  ( $9^{\circ}\text{F}$  to  $27^{\circ}\text{F}$ )

## SCOPE OF SUPPLY

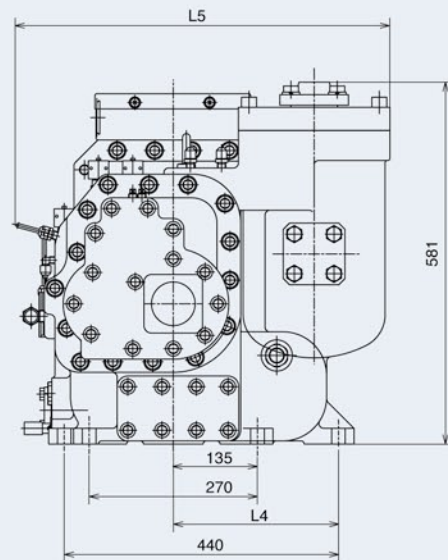
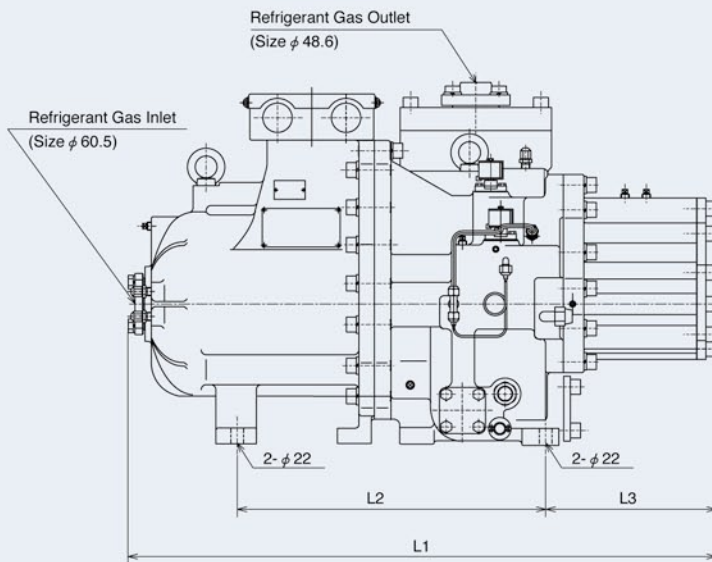
The factory-supplied compressor assembly includes the following components:

- Motor
- Inner construction oil separator
- Motor protector
- Solenoid valves for capacity control
- Refrigeration oil
- Oil strainer and Blank flanges for seal.
- Corrosion-proof gas is charged.

## DIMENSIONAL DATA

40ASC-H, 40ASC-Z, 50ASC-H, 50ASC-Z, 60ASC-H and 60ASC-Z

unit: mm



Model	L1	L2	L3	L4	L5
40ASC-H 40ASC-Z	840	452	265	284	585.5
50ASC-H 50ASC-Z	874	465	275	265	595
60ASC-H 60ASC-Z	938	495	275	265	600

# HITACHI

 Hitachi Appliances, Inc.

URL : <http://www.hitachi-ap.com>

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