

Specifications

DESCRIPTION / MODELS		452XL	454XL	456XL	458XL	456-42XL	458-62XL
Number of Cylinders		2	4	6	8	4 LS/2HS	6 LS/2HS
Maximum RPM		1200	1200	1200	1200	1200	1200
Bore & Stroke	Inch mm	4 1/2 x 4 1/2 114 x 114	4 1/2 x 4 1/2 114 x 114	4 1/2 x 4 1/2 114 x 114	4 1/2 x 4 1/2 114 x 114	4 1/2 x 4 1/2 114 x 114	4 1/2 x 4 1/2 114 x 114
CFM @ Maximum RPM (m ³ /hr)		99.4 (169)	199 (338)	298 (507)	398 (676)	298 (507)	398 (676)
Tons (kW) Refrigeration @ 35°C Condensing	R-717 (-10°C) R-134a (-6.6°C)	30.4 (106.7) 31 (108.8)	60.8 (213.4) 62 (217.6)	91.2 (320.1) 93 (326.4)	121.6 (426.8) 124 (435.2)	32(112.3) ^a -	47.5(166.7) ^a -
Tons (kW) Refrigeration @ 40°C Condensing	R-717 (-15°C) R-717 (-5°C)	24.3 (85.3) 37 (129.8)	48.6 (170.5) 74 (259.7)	72.9 (255.8) 111 (389.6)	97.2 (341.1) 148 (519.9)	20(65.8) ^{ab} -	24.8(87.04) ^{ab} -
Tons (kW) Refrigeration @ 40°C Condensing	R-134a (4.4°C)	44.5 (156.2)	89 (312.3)	133.5 (468.5)	178 (624.7)	-	-
Suction Connection - in. (mm)		2 1/2 (64)	3 (76)	4 (102)	4 (102)	4(102) 1/2 1/2 (64) ^c	4(102) 1/2 1/2 (64) ^c
Discharge Connection - in. (mm)		2 (51)	2 1/2 (64)	3 (76)	3 (76)	2 1/2 (64) 1/2 (51) ^c	3 (76) 1/2 (51) ^c
Unit weight Less Motor - Lbs. (kg)		1900 (862)	2700 (1225)	3100(1406)	3400(1542)	3264 (1481)	3564 (1617)
Oil Charge - Gallons (Liters)		5(19)	7 (27)	7 (27)	7 (27)	7(27)	7(27)
Standard Steps of Unloading (%)		0	50	33/66	25/50/75	50	33/66

NOTES : ^aAt -25°C Evaporative and 35°C Condensing ^{ab}At -40°C Evaporative and 35°C Condensing
^cLow side ^dHigh Side All specifications are subject to change without notice. For other options on loading/unloading, please contact factory.

FRICK INDIA HIGH SPEED RECIPROCATING COMPRESSORS



Some of our Customers



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FRICK INDIA LTD.

Frick India 450 XL Series High Speed Reciprocating Compressors



HIGH EFFICIENCY
PERFORMANCE



HIGH COP

Advanced FILTERS
removes **95%**
Contamination



Smooth Unloading System

double bellows shaft seal

Low **POWER** Consumption



Spring Loaded Safety Heads

Spring loaded safety heads are provided on all 450 XL models for protection against liquid slugs. In case of slugging, the springs can compress, and the safety heads rise to provide additional volume, thereby avoiding transmission of a heavy shock load and subsequent damage to compressor parts. Extra space provided by this arrangement allows liquid to be forced out of the cylinder more easily. The 450 XL suction and discharge valve porting was designed to improve the compressor's efficiency and its capacity.



Piston, Ring & Ring Assembly

A new, unique shrink-fit wrist pin is used on the 450 XL to increase the piston's load-carrying capabilities. Piston pins are of case hardened steel, ground and polished to size. Piston rings are made of special, close-grained, heat-treated cast iron. Ring set includes 3 compression rings and 1 oil ring. Entire aluminium piston is tin-plated to prevent scuffing during break-in period.



Double Bellow Shaft Seal

The 450XL shaft seal is manufactured from materials strictly used for industrial refrigeration applications. Seal unit assembly consists of two opposed seals - one sealing from the atmosphere and the other from the crankcase. Mating seal surfaces are lubricated and cooled by circulated oil.

Tri-Micro Oil Filter

Removes 95% of contaminants as small as 3 microns in size. Allows full flow of oil at all times, resulting in reduced wear on compressor components. Combines extreme filtering capacity with the convenience of a throw-away recharge element. Filter is enclosed in a seamless drawn carbon steel shell with cast iron cover, and is equipped with a means for determining pressure drop across the filter.



Taper roller ball bearing

Taper roller ball bearings are specially designed to manage heavy radial loads. Bearings are fitted at both the ends of the crankshaft for better efficiency of crankshaft rotation. Less power losses, higher speed, lower maintenance, better overall efficiency, better equipped to deal with liquid slugs are main advantages of taper roller bearings over welded bush type bearings.



Ductile Iron Crankshaft

The 450XL crankpin diameter was designed for greater shaft strength and to provide greater projected bearing area. Bearing surfaces are carefully ground and polished to close tolerance. Shafts are balanced both statically and dynamically to minimize vibration, and are specially drilled to ensure hydrodynamic lubrication of the bearings throughout the compression cycle. For the 6, 8 cylinder models, the shafts are shot-peened for even greater strength.



Capacity Control System

A piston-operated unloading mechanism that is actuated by suction pressure raises the suction valve to unload individual cylinders and/or pairs of cylinders for easy starting and capacity control. High pressure gas or oil is metered into the operating chamber of the unloader piston through a small port, thereby depressing the piston to lower the suction valve plate, and thus loading the compressor. This system's unique design allows for removal of the unloader piston and seal assembly for servicing without dismantling the entire compressor.



Fully Automatic

Easy to Install and Operate Frick India PLC Control Panel have manual as well as automatic function for Compressor Loading & Unloading. Energy saving through auto operation. USB port to connect USB drive for data logging.

Oil Separator

Cyclone type oil separator is having auto oil draining system without any controls

Cast Iron Body

Suitable for refrigeration applications being thermally insensitive to expansions / contraction during operations. better thermal insulation leading to low noise / sound.

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DESCRIPTIONS

Frick India offers Six models of High Speed reciprocating compressors ranging from a nominal 2 cylinder machine all the way to the high end of scale-a nominal 8 cylinder model. In between are the 4 & 6-cylinder mid size units. All High Speed reciprocating compressors run at a maximum of 1200 RPM, and all are provided with built-in capacity reduction steps for economical operation at reduced loads. V-belt and direct connected motor operation are also available throughout the entire range of High Speed reciprocating models.

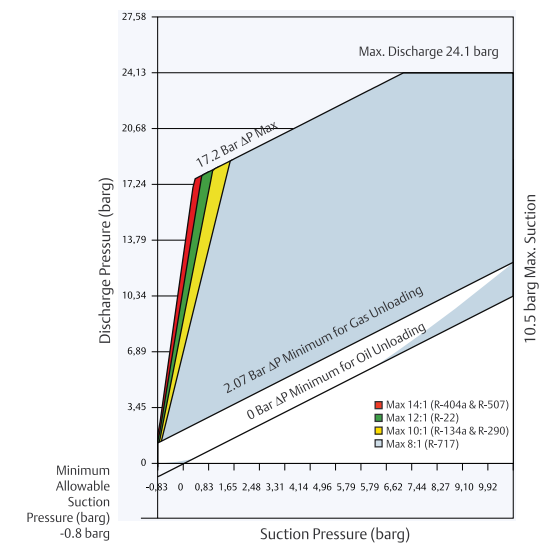
The 450XL can operate with ammonia, halocarbon and even some hydrocarbon refrigerants. It works in extreme applications with up to a 17.2 bar pressure differential. It can be belt-driven up to 224 kW or direct driven all the way up to 285 kW. And it can run at high compression ratios all the way up to 12:1 with certain halocarbon refrigerants. these compressors are extremely cost-efficient.

Frick India High Speed Compressors has a whopping cylinder displacement of 84.5 m³/h while running at 1200 RPM. and the high efficiency of the 450XL means its COP is high as compared to other compression systems.

The 450XL can be installed almost anywhere, even on an upper floor if necessary, since vibration is kept to a minimum. Noise level is low too, due to the use of quick acting, precise ring plate suction and discharge valves.

Applications

The 450XL is so versatile it can handle almost any refrigeration system conditions. Up to 24.1 bar maximum discharge, and upto 10.3 bar maximum suction with a maximum 17.2 bar pressure differential. At different compression ratios, too, from 8:1 for ammonia to 14:1 for R404A. In V-belt configurations all the way up to 224 kW, or, direct drive setups up to 285 kW. And it's usable for both 50Hz and 60Hz applications up to 1200 RPM.



452 XL



454 XL



456 XL



458 XL

Frick India Genuine Spare Parts

When you need parts for your 450XL compressor – whether for repair work or scheduled maintenance – make sure you specify Genuine Spare Parts. Cheap parts can become an expensive mistake. Make sure you insist on using only Genuine Spare Parts, readily available in our Factory and our Branch offices pan India.

You can also buy the Genuine spare parts online. Visit www.efrickindia.com

