

The FK(X)2 is replaceable by the FK(X)20/120N. A comparison in regard of design and important characteristics is pictured in the following table.

Indication:	FK(X)2	FK(X)20/120N
Number of cylinders	2	2
Design of casing	Grey cast iron	Aluminium
Weight [kg]	19	13,5
Swept volume [cm <sup>3</sup> ]	121	118
Displaced volume <sup>1</sup> [m <sup>3</sup> /h]	10,53	10,3

<sup>1</sup> compressor rev = 1450 rpm

The capacity data of both compressors are comparable because of the almost identical swept volume.

Figures 1 and 2 are showing the outer dimensions and their variations, FK(X)20/120N versus FK(X)2.



Figure 1: Dimensioned drawing FK(X)20



Figure 2: Dimensioned drawing FK(X)2

The FK(X)20/120N is about 60 mm lower in height, compared to the FK(X)2, whereas length and width are nearly the same.



## 1. Assembly of clutch:

Shaft extensions are identical, so that flywheels ( $\emptyset$  165 mm, 2 x SPA) or el. magnetic clutches (model: LA 21) can be used for both compressors.

# 2. Weight:

The FK(X)20 has around 5,5 kg less weight than the FK(X)2.

#### 3. Bearing of crankshaft:

The  $FK(X)^2$  has a combined roller-sleeve bearing. This means that on one side of the crankshaft there is a roller bearing and on the other side a sleeve bearing is used. The  $FK(X)^20$  is equipped with cylinder roller bearings on either side of the crankshaft. This optimisation leads to higher reliability and safety due to better emergency running properties.

#### 4. Revolution speed:

The maximum permissible revolution speed of the FK(X)2 has a value of 3000 rpm. The FK(X)20 in N-Version allows temporary peak revolutions of 3500 rpm for engine overspeed, e.g. when changing gear, downhill in thrust mode etc.

#### 5. Height of crankshaft:

Using a distance piece of 8 mm height beneath the FK(X)20/120N compressor, leads to the same height of crankshaft like the FK(X)2.

#### 6. Fixing points:

As shown in figure 1 and 2 the fixing points at the compressor base plate are different. For this reason a modification of the mounting plate is necessary. Figure 3 is showing the drilling template for the FK(X)2 with a distance from shaft extension of 77 mm (marked in blue). The resulting drilling template of the FK(X)20 with a distance from shaft extension of 99 mm is pictured in black.



Figure 3: Drilling template of FK(X)2 and FK(X)20



### 7. Pipeline connection:

Figures 1 and 2 are showing that the arrangement of the shut-off valves has changed. From this it follows that an adjustment of the pipeline configuration is necessary.

#### 8. Compatibility with the remaining models:

The complete FK(X)20-type series is given in the following table.

Туре	Swept volume [cm³]	Displ. volume (at 1450 rpm) [m³/h]	Number of Cyl.	Weight [kg]
FK(X)20/120	118	10,3		
FK(X)20/145	143	12,4	2	13,5
FK(X)20/170	170	14,8		

Concerning the swept volume and capacity data the table is indicating that the FK(X)20/120 can be expanded by the use of FK(X)20/145 (21 % more capacity) and FK(X)20/170 (44 % more capacity). The outer dimensions of the entire FK(X)20-type series are identical.

Moreover the FK(X)20 is available in a special version for deep freezing (TK-version). This version has an optimised valve plate. Compared to the N-version this leads to a better cooling capacity at lower evaporating temperatures. Another benefit of our TK-series is the maximum permissible operating pressure of 28 bar (N-version = 25 bar). This pressure difference affords the customer an expand range with regard to condensation temperatures. The maximum permissible condensation temperature increases from 53  $^{\circ}$  (25 bar) to 58  $^{\circ}$  using the refrigerant R404A/R507.

Further information you will find in our FK-vehicle compressor catalogue, or do not hesitate to contact us, the FK-application engineering department (Phone:+497022/9454-0 or mail@bock.de).