

Vehicle Compressors Catalogue

R134a | R404A | R507 | R407C | R22

The full range - FK vehicle compressors

- › *Compressors for bus air conditioning*
- › *Compressors for railway air conditioning*
- › *Compressors for transport cooling*

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Disclaimer

- This catalogue has been produced for you with the greatest of care. Nevertheless it is not possible to rule out mistakes completely. In such cases we cannot assume any liability
- The contents correspond to the status on going to print. Deviations cannot be ruled out because of the ongoing development process for our products.
- The details are provided as unbinding general information and cannot substitute detailed, individual consultation.
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General

About us



The new Bock training centre in Frickenhausen.

Innovation and Tradition

For 75 years, Bock has represented quality, innovation and reliability in the refrigeration and air conditioning industry.

Over a period of decades, we have developed as a company specializing in piston compressors in response to the different requirements for commercial, industrial, railway, bus and transport refrigeration. Our compressors are manufactured on the latest generation of production and assembly installations.

Bock, with subsidiaries and agencies in more than 60 countries, offers a comprehensive service ranging from consultancy through to the rapid supply of compressors and spare parts.

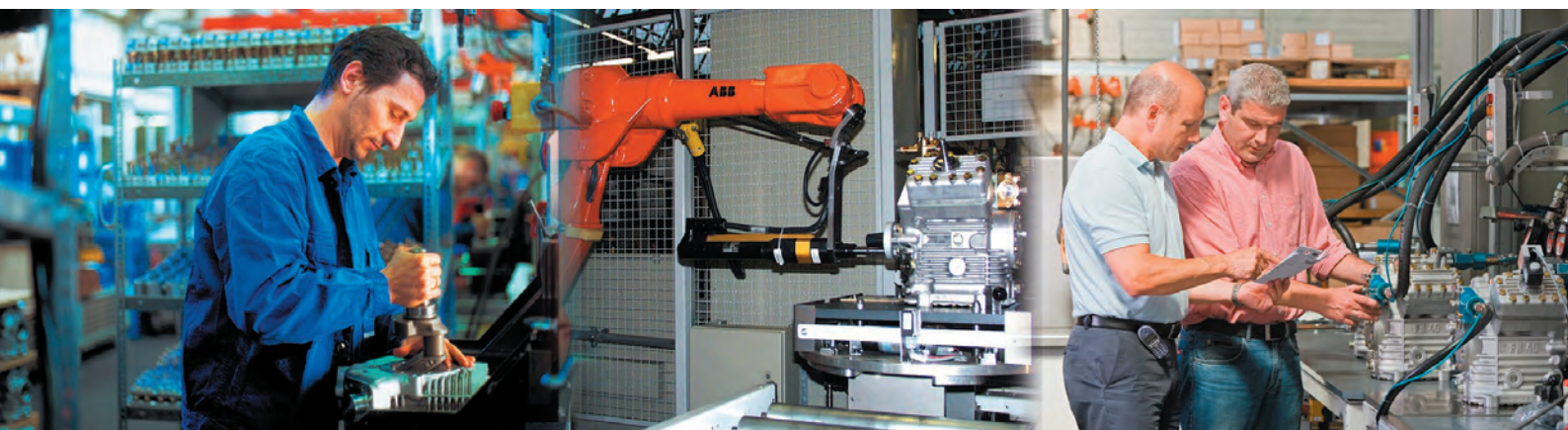
In this catalogue you will find our whole vehicle compressor programme.

Bock vehicle compressors in the FK series are the result of decades of experience in mobile refrigeration. Particularly when it comes to bus air conditioning, they are the standard of all renowned manufacturers. But they have also become firmly established in transport refrigeration and train applications together with other areas of mobile and stationary refrigeration.

For any queries you may have:
Contact us directly or contact one of our agencies! Our team will be happy to take your call.

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The Bock product programme, our worldwide distribution network and much more can be found round the clock on www.bock.de



The production programme

Semi-hermetic compressors HG(HA)

The Bock HG (Hermetic Gas-cooled) range of semi-hermetic compressors offers traditional suction gas-cooled compressor state of the art technology. These compressors of the highest quality standard excel in their running comfort, easy maintenance, high performance and reliability.

Suitable as standard for conventional or chlorine-free HFC refrigerants.

The HA (Hermetic Air-cooled) range, specially engineered by Bock, exists for deep-freezing applications, in particular for use with refrigerants R22 and R404A.

Available versions:

Single-stage HG (HA) compressors, two-stage HGZ compressors, 8/4 pole HG compressors, DHG (DHA) Duplex compressors, compressor units with receiver and SHG (SHA) condenser units, air-cooled.



Open type motor compressor AM

With the AM range, we offer an extremely compact compressor with an open construction. Its special features are its robust design, easy handling and the resulting wide range of applications. In addition, the compressor is separate from the motor, which is a particular advantage in the event of a motor burn-out.

Available versions:

AM single-stage compressors, AM 8/4 pole compressors, compressors for NH₃, DAM Duplex compressors, compressor units with receivers and SAM condenser units, air-cooled.



Open type compressor F

The F model series provides modern open type compressors for separate drive systems (using V belts or direct couplings). Load transfer through a V pair. Virtually all drive capacity requirements can be met.

Very compact compressor design, robust and easy to handle. Oil pump lubrication as standard.

Available versions:

Single-stage F compressors, two-stage FZ compressors, compressors for NH₃, FDK compressor units.



Vehicle compressors FK

Bock vehicle compressors of the FK range are the result of many years of experience in the domain of mobile cooling systems. Especially for bus and coach air-conditioning systems, they are among the standard units used by all the well-known manufacturers, while also being well established in the domain of transport refrigeration systems and in other mobile and stationary refrigeration systems.

The unsurpassed light, compact, robust design and wide r.p.m. range are only some of the outstanding features of this unique product range of two, four and six cylinder compressors.

A wide variety of designs can be tailored to suit individual requirements.

The so-called K version is a special innovation with a unique valve plate system for maximum performance in bus and coach air-conditioning systems.

Available versions:

FK for bus and railway air-conditioning
FK for transport refrigeration and other applications



The Bock FK family

At a glance

The bock vehicle compressor: The reliable core of every bus air conditioning system

Compact, light, powerful and reliable.

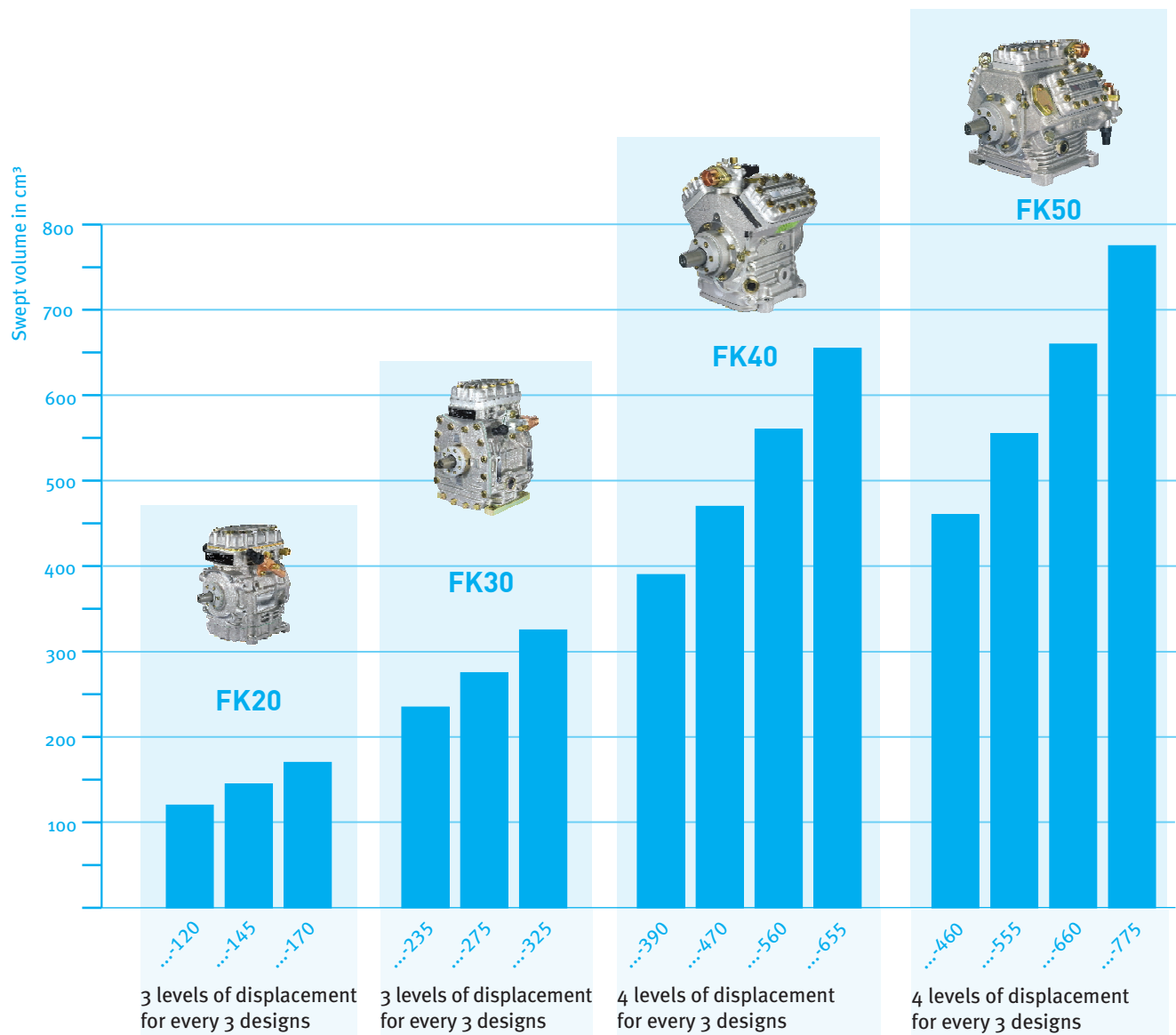
This is how in the 60s, the success story of Bock's FK series vehicle compressors began. It is a story which has not been outdone when it comes to innovation and technology at the highest level of quality available.

Whether in bus or railway air conditioning systems, transportation cooling, or in other mobile cooling applications, Bock FK compressors are the worldwide specialists.

We offer you a unique range of compressors in four basic models in two, four and six cylinder designs with a total of 14 displacement levels and depending on the application range, different design variants. In addition, we have numerous ways of adapting the compressor to your individual requirements.

Come and talk to us, our competent team will be pleased to advise you.

The complete programme. ...4 construction sizes and 14 levels of displacement



The particular features

2-, 4- and 6-cylinder compressor in an light aluminium construction

with excellent characteristics:

- › The lightest and most compact there is
- › Highly robust design
- › Wide speed range
- › Efficient operating performance
- › Universal application

The right solution for every application

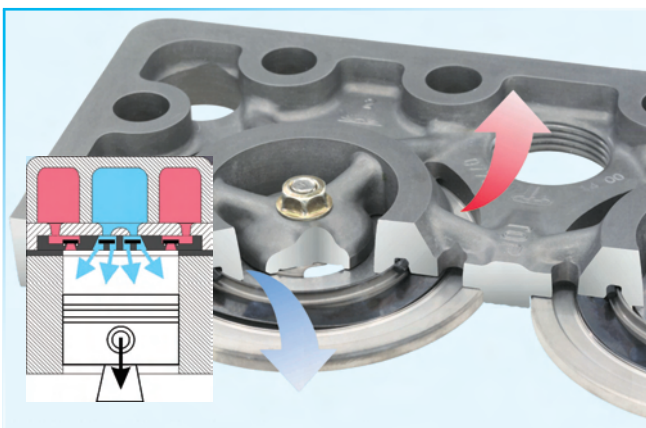
Three design variations are available for different areas of application

- › For air conditioning the K Design
- › For air conditioning or normal cooling the N Design
- › for deep freezing the TK Design

The differences are mostly associated with the valve plate version which is adapted to each application range where operational safety and efficiency are concerned.

- The K Design

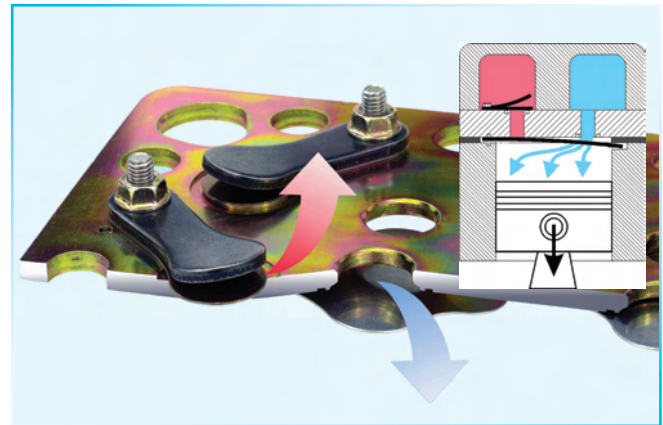
A special Bock innovation. The unique valve plate system for those with high standards - specially developed for bus air-conditioning systems. Extremely robust and reliable, not only where there are constant variations in speed and in pressure, but also where there are liquids. The base plate of this systems is made, as is the compressor of aluminium. The valves are constructed as ringfin packages and are guided loosely. This means that they are neither exposed to lateral nor torsional powers and thanks to their special construction they cannot fall into the cylinder area nor hit the top of the piston. **The no compromise solution for mobile air conditioning.**



- The N Design

The cost-effective alternative to the K Design.

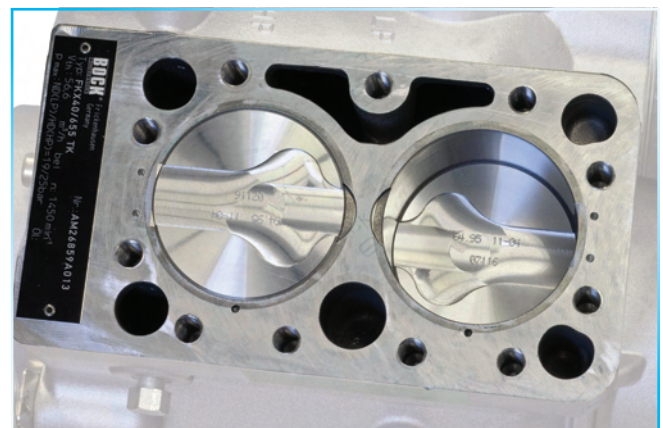
The universal valve plate system. Suitable for both air conditioning in buses and for other applications. The base plate is designed in steel. The valve units are constructed as one-sided fixed tongue fins which makes them form a simple and cost-effective construction. In comparison to the K design, the valves are exposed to lateral and torsional powers, which mean that the load carrying ability reduces, in particular in air conditioning where there are fluctuating speed or liquid influence.



- The TK Design

A special variant for deep freezing.

Building on the N valve plate basic concept with additional measures to optimise the charging efficiency at low evaporation temperatures. The piston top have suction fin contour grooves which further reduce the dead space and lead to increased performance in the deep-freeze area.



The Bock FK family

The particular features

Additional features

Quiet with low vibrations

- › Four cylinder construction from 390 cm³, Six cylinder from 460 cm³
- › Minimum oscillating mass, connecting rods and pistons made out of aluminium
- › Dynamic mass balance of the whole mechanism
- › High volume pressure area to dampen pulsations

Low-wearing long-lived mechanism

- › Solid construction and design
- › Classic crankshaft construction with hardened surfaces
- › Double-sided roller bearing mounting design for maximum radial forces
- › Aluminium pistons with two-ring assembly
- › Aluminium connection rod in divided, screwed design



2 cylinder



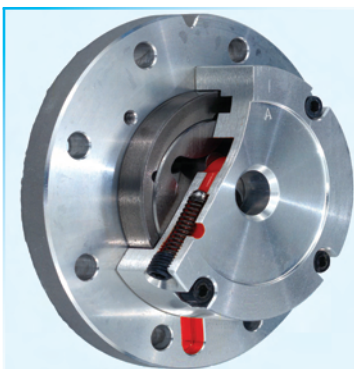
4-cylinder



6-cylinder

Reliable and safe oil supply

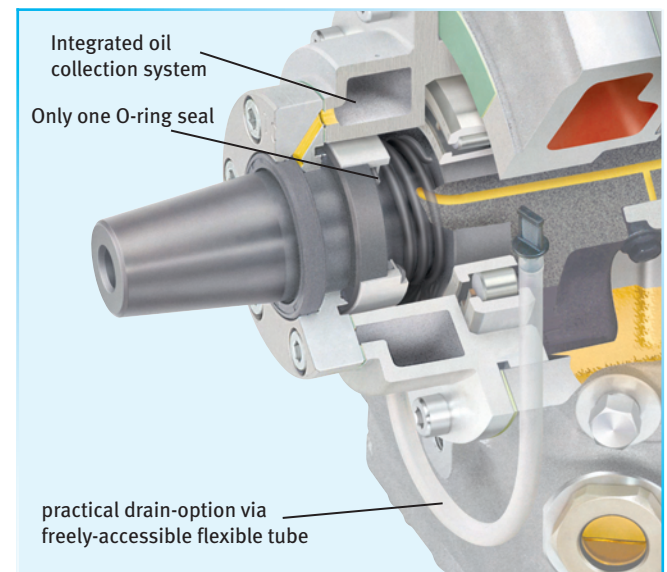
- › Self-contained lubrication through an internal rotor pump
High performance, independent of rotating direction, compact
- › Oil overpressure valve to regulate the oil pressure
- › High volume oil sump
- › Two sight glasses for checking the oil level (FK40/50), (FK30 one sight glass)



Simply constructed shaft seal

- › Tried and tested construction for decades
- › Only one O-ring seal, counter ring designed as the screw-on cover
- › With oil washing for cooling and lubricating the whole unit
- › So easy to change the shaft seal for maintenance purposes

For example: FK40 shaft seal construction



Integrated oil collection system with a large storage volume

- › FK40/FK50:
practical drain options through a freely accessible flexible tube. No dismantling of the coupling necessary
- › FK30:
Oil collection with oil felt insert for changes



FK30



FK40/FK50

The particular features

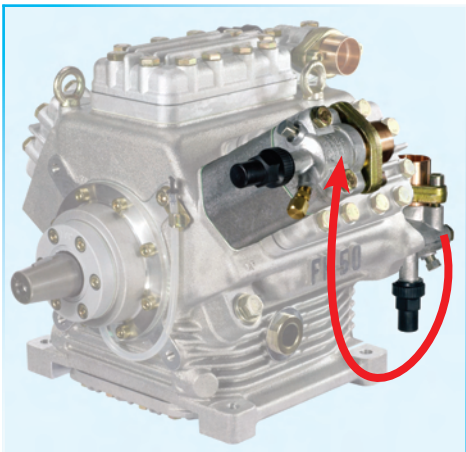
Valve plate construction for safe operation

(see also page 6)

- › Operational valves made out of high quality, impact-resistant spring steel
- › K Design with loosely guided ring valve units
- › N and TK design with one-sided clamped tongue valve units
- › Highest operational safety and efficiency in all application areas

Variable connection and fixing options

- › Variable position of the suction shut-off valve (FK30/40/50)
- › Rotate options for the suction and discharge shut-off valve
- › Fixing options for supplementary attachments.
- › More variants for fixing the compressor.
- › Customer-made designs on request.



Special designs, for example:

Suction shut-off valve mounted on cylinder-bank with intermediate adapter.

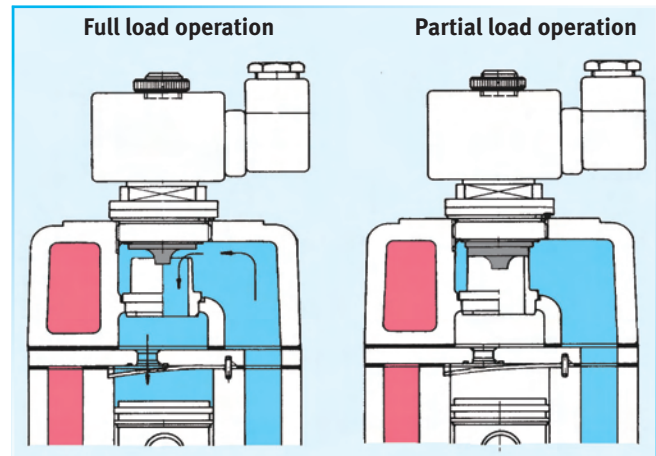


Special designs, for example:

Suction shut-off valve mounted between the cylinder covers.

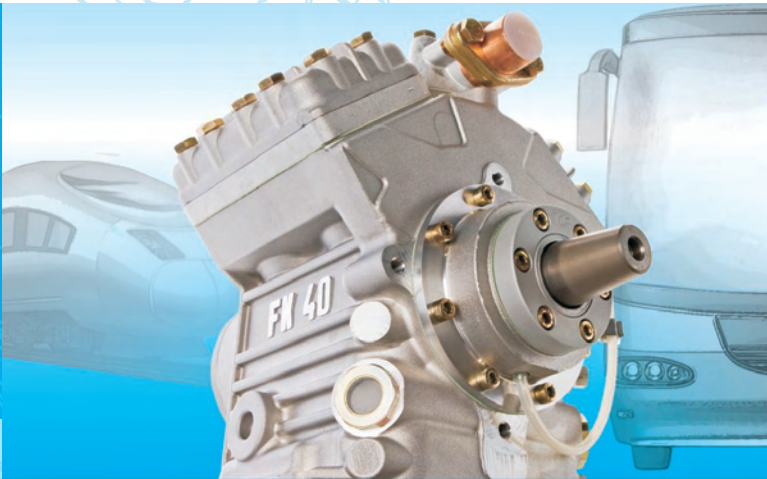
Capacity regulator (Option)

- › Locking of suction port of a cylinder bank with a electromagnetic pilot valve.
- › Possible capacity steps:
Four cylinder compressor: 50 %
Six cylinder compressor: 66 %/ 33 %



Various drive options

- › Conical shaft end for safe power transfer and exact installation of the drive elements.
- › V-belt drive with electromagnet coupling or flywheel.
- › Additional drive types on request.



FK Series

K | N

R134a | R407C

**Compressors for bus and
railway air conditioning**

FK Series K and N

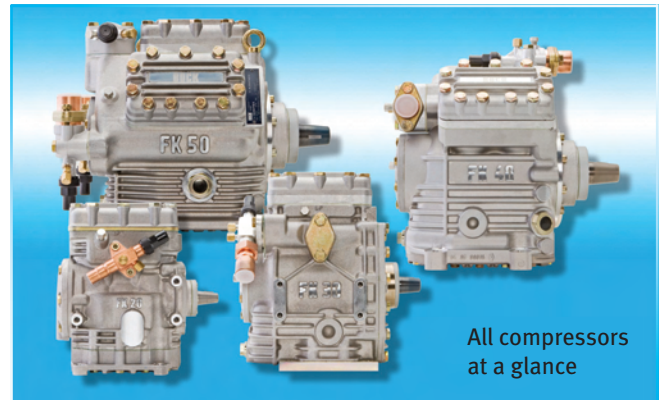
Bus and railway air conditioning

At a glance

Bock vehicle compressors in the FK series are the result of decades of experience in mobile refrigeration. Particularly when it comes to bus air conditioning, they are the standard of all renowned manufacturers.

Unsurpassed lightweight, compact and robust design with a large speed range - these are just a few of the outstanding features of this unique product range with 2, 4 and 6 cylinder compressors. Customer-made to the individual application with many different design versions.

One special innovation constitutes the so-called K version with a unique valve plate system for the toughest demands in mobile air conditioning.



Models available

Type	Levels of displacement [cm ³]	Possible Design variants
FK20	120, 145, 170	K and N
FK30	235, 275, 325	K and N
FK40	390, 470, 560, 655	K and N
FK50	460, 555, 660, 775	K and N

K specially for air conditioning,
N for air conditioning or normal cooling
 For a detailed description see also page 6

In addition for electrical operation, (i.e. railway air conditioning) we have an interesting selection of compressors from our semi-hermetic programme.
 For other requirements, please ask us.

Type key



- ¹⁾ X = Ester oil filling (HFC refrigerant, e.g. R134a, R407C)
- ²⁾ K = specially for air conditioning
 N = for air conditioning or normal cooling

Technical data, dimensions and connections, scope of supply and accessories

can be found from page 27 onwards

FK Series K and N

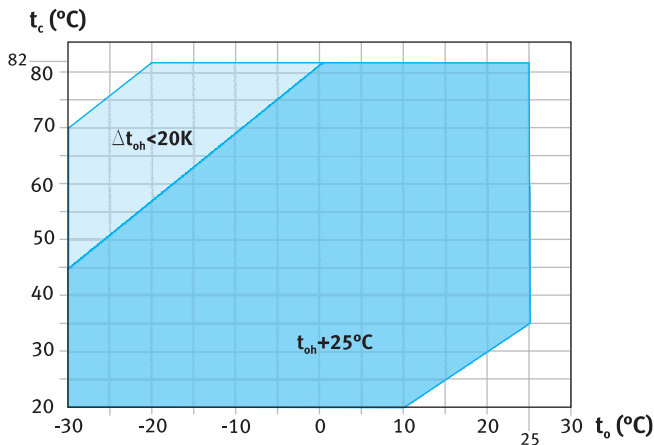
Bus and railway air conditioning

Performance data

R134a

Limits of application

FKX20, FKX30, FKX40, FKX50



Unlimited application area

reduced suction gas temperature

t_o Evaporating temperature [°C]

t_c Condensing temperature [°C]

t_{oh} Suction gas temperature [°C]

Δt_{oh} Suction gas overheating [K]

Note:

Limits of application

Compressor operation is possible within the examples in the diagram showing the limitations of use. The meaning of the surfaces marked in colour are to be observed. Limiting areas should not be selected for layout or continuous operating points.

Performance data

Performance specifications for the R134a are based on **25°C suction gas temperatures without liquid subcooling.**

Compressor speed 1450 rpm.

The values can be stated to judge the overall performance at other speed with the help of the calculation factors below.

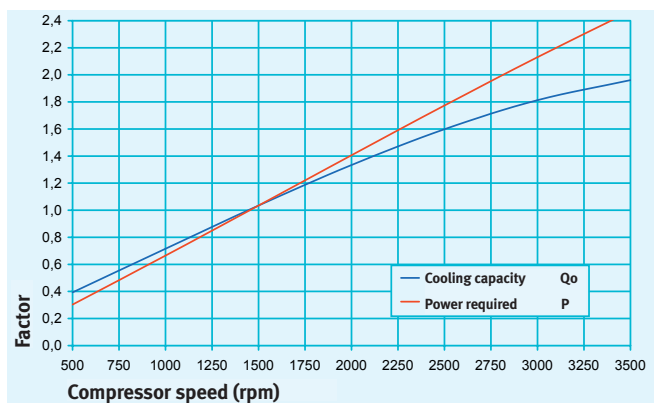
For additional technical data for other operating points see Bock software.

Speed range:

N Design 500 - 3000 rpm
(max speed 3500 rpm)

K Design 500 - 3500 rpm

Maximum permissible operating pressure (HP): 28 bar



R134a

Performance data

1450 rpm

Type	Cond. Temp. °C		Cooling capacity \dot{Q}_0 [W]					Power P [kW]			
			Evaporating temperature °C					-5	-10	-15	
			15	12,5	10	5	0				
FKX20/120 N	30	Q	9827	8983	8194	6771	5540	4484	3584	2823	
		P	0,91	0,95	0,99	1,03	1,02	0,99	0,93	0,85	
	40	Q	8789	8020	7302	6009	4895	3940	3129	2443	
		P	1,30	1,31	1,32	1,29	1,24	1,16	1,06	0,96	
	FKX20/120 K	50	Q	7720	7027	6380	5221	4226	3376	2655	2045
			P	1,65	1,63	1,60	1,52	1,42	1,31	1,18	1,05
	60	Q	6629	6012	5438	4415	3540	2798	2170	1639	
		P	1,95	1,90	1,85	1,72	1,58	1,43	1,27	1,13	
	70	Q	5522	4982	4483	3598	2847	2214	1682	1232	
		P	2,20	2,12	2,05	1,88	1,70	1,52	1,35	1,19	
FKX20/145 N	30	Q	11890	10870	9915	8193	6704	5425	4336	3416	
		P	1,10	1,15	1,20	1,24	1,24	1,20	1,12	1,03	
	40	Q	10635	9704	8835	7271	5923	4768	3786	2956	
		P	1,58	1,59	1,59	1,56	1,50	1,40	1,29	1,16	
	FKX20/145 K	50	Q	9342	8502	7720	6318	5113	4085	3213	2475
			P	2,00	1,97	1,94	1,85	1,72	1,58	1,43	1,27
	60	Q	8021	7274	6580	5342	4284	3386	2626	1984	
		P	2,36	2,30	2,23	2,08	1,91	1,73	1,54	1,37	
	70	Q	6681	6029	5425	4353	3445	2679	2035	1491	
		P	2,66	2,57	2,47	2,27	2,05	1,84	1,63	1,44	
FKX20/170 N	30	Q	14150	12936	11800	9751	7978	6456	5160	4066	
		P	1,31	1,37	1,42	1,48	1,47	1,42	1,34	1,23	
	40	Q	12656	11549	10514	8654	7048	5674	4505	3517	
		P	1,87	1,89	1,90	1,86	1,78	1,67	1,53	1,38	
	FKX20/170 K	50	Q	11117	10118	9188	7519	6085	4861	3823	2945
			P	2,38	2,35	2,31	2,20	2,05	1,88	1,70	1,51
	60	Q	9545	8657	7831	6357	5098	4029	3125	2361	
		P	2,81	2,74	2,66	2,48	2,27	2,05	1,84	1,62	
	70	Q	7951	7175	6456	5181	4100	3189	2422	1775	
		P	3,17	3,06	2,94	2,70	2,44	2,19	1,94	1,72	
FKX30/235 N	30	Q	19421	17754	16195	13383	10949	8861	7083	5580	
		P	1,79	1,89	1,96	2,03	2,02	1,95	1,84	1,68	
	40	Q	17370	15850	14431	11877	9674	7787	6183	4827	
		P	2,57	2,60	2,60	2,56	2,45	2,29	2,10	1,89	
	FKX30/235 K	50	Q	15258	13887	12610	10319	8351	6672	5247	4042
			P	3,26	3,22	3,17	3,01	2,81	2,58	2,33	2,07
	60	Q	13100	11881	10748	8725	6997	5530	4289	3240	
		P	3,86	3,76	3,65	3,40	3,12	2,82	2,52	2,23	
	70	Q	10912	9847	8861	7110	5627	4376	3324	2436	
		P	4,35	4,20	4,04	3,71	3,36	3,00	2,67	2,35	
FKX30/275 N	30	Q	23112	21129	19273	15927	13031	10545	8429	6641	
		P	2,13	2,24	2,33	2,41	2,41	2,32	2,18	2,00	
	40	Q	20672	18863	17173	14134	11513	9268	7359	5745	
		P	3,06	3,09	3,10	3,04	2,91	2,72	2,50	2,25	
	FKX30/275 K	50	Q	18158	16527	15007	12280	9938	7940	6244	4810
			P	3,88	3,84	3,77	3,59	3,35	3,07	2,77	2,47
	60	Q	15590	14139	12791	10383	8327	6581	5104	3856	
		P	4,59	4,47	4,34	4,04	3,71	3,35	3,00	2,65	
	70	Q	12987	11718	10545	8462	6697	5208	3956	2899	
		P	5,17	5,00	4,81	4,41	3,99	3,57	3,17	2,80	
FKX30/325 N	30	Q	27125	24797	22619	18692	15293	12376	9892	7794	
		P	2,50	2,63	2,73	2,83	2,82	2,73	2,56	2,35	
	40	Q	24260	22137	20155	16588	13511	10877	8636	6742	
		P	3,59	3,63	3,63	3,57	3,42	3,20	2,93	2,64	
	FKX30/325 K	50	Q	21311	19396	17612	14412	11664	9319	7329	5646
			P	4,56	4,50	4,43	4,21	3,93	3,60	3,25	2,90
	60	Q	18297	16594	15012	12186	9773	7723	5990	4525	
		P	5,38	5,25	5,10	4,75	4,35	3,94	3,52	3,11	
	70	Q	15241	13753	12376	9931	7859	6112	4643	3402	
		P	6,07	5,87	5,65	5,18	4,69	4,20	3,72	3,29	

Performance data at 1450 rpm

Based on 25°C suction gas temperature without liquid subcooling

reduced suction gas temperature

FK Series K and N

Bus and railway air conditioning

R134a

Performance data

1450 rpm

Type	Cond. Temp. °C		Cooling capacity \dot{Q}_0 [W]					Power P [kW]			
			Evaporating temperature °C								
			15	12,5	10	5	0	-5	-10	-15	
FKX40/390 N	30	Q	32100	29345	26769	22120	18098	14646	11707	9223	
		P	2,96	3,12	3,23	3,35	3,34	3,23	3,03	2,78	
	40	Q	28711	26198	23852	19631	15990	12872	10221	7979	
		P	4,25	4,29	4,30	4,22	4,04	3,78	3,47	3,12	
	50	Q	25220	22954	20842	17056	13803	11028	8673	6681	
		P	5,39	5,33	5,24	4,98	4,65	4,26	3,85	3,43	
FKX40/390 K	60	Q	21653	19638	17765	14421	11565	9140	7089	5355	
		P	6,37	6,21	6,03	5,62	5,15	4,66	4,16	3,69	
70	Q	18037	16276	14646	11752	9301	7234	5494	4026		
	P	7,19	6,94	6,68	6,13	5,55	4,96	4,41	3,89		
FKX40/470 N	30	Q	38841	35508	32390	26765	21899	17722	14165	11160	
		P	3,58	3,77	3,91	4,05	4,04	3,91	3,67	3,37	
	40	Q	34740	31700	28861	23753	19347	15575	12367	9655	
		P	5,15	5,20	5,20	5,11	4,89	4,58	4,20	3,78	
	50	Q	30516	27774	25219	20638	16702	13344	10494	8084	
		P	6,52	6,45	6,34	6,03	5,63	5,16	4,66	4,15	
FKX40/470 K	60	Q	26201	23762	21496	17450	13994	11060	8578	6479	
		P	7,71	7,52	7,30	6,80	6,23	5,64	5,04	4,46	
70	Q	21825	19693	17721	14220	11254	8753	6648	4871		
	P	8,70	8,40	8,08	7,41	6,71	6,01	5,33	4,71		
FKX40/560 N	30	Q	46224	42257	38547	31853	26062	21090	16858	13281	
		P	4,26	4,49	4,65	4,83	4,81	4,65	4,37	4,00	
	40	Q	41343	37725	34347	28268	23025	18535	14718	11490	
		P	6,12	6,18	6,19	6,08	5,82	5,45	5,00	4,50	
	50	Q	36316	33053	30013	24561	19877	15880	12489	9621	
		P	7,77	7,67	7,54	7,17	6,69	6,14	5,54	4,94	
FKX40/560 K	60	Q	31181	28278	25582	20767	16654	13162	10208	7711	
		P	9,18	8,95	8,69	8,09	7,42	6,71	5,99	5,31	
70	Q	25973	23437	21090	16924	13393	10416	7912	5797		
	P	10,35	10,00	9,62	8,82	7,99	7,15	6,34	5,60		
FKX40/655 N	30	Q	54249	49594	45239	37383	30586	24752	19784	15587	
		P	5,01	5,27	5,46	5,66	5,65	5,46	5,13	4,70	
	40	Q	48521	44275	40310	33176	27022	21753	17273	13485	
		P	7,19	7,26	7,27	7,14	6,83	6,39	5,86	5,28	
	50	Q	42621	38792	35224	28825	23328	18637	14657	11291	
		P	9,11	9,01	8,85	8,42	7,86	7,21	6,50	5,79	
FKX40/655 K	60	Q	36594	33188	30023	24372	19545	15447	11980	9050	
		P	10,77	10,50	10,20	9,49	8,71	7,87	7,04	6,23	
70	Q	30483	27506	24751	19862	15718	12225	9285	6804		
	P	12,14	11,73	11,29	10,35	9,37	8,39	7,44	6,58		
FKX50/460 N	30	Q	38324	35035	31958	26409	21607	17486	13976	11011	
		P	3,54	3,72	3,86	4,00	3,99	3,85	3,62	3,32	
	40	Q	34277	31277	28476	23437	19090	15367	12202	9526	
		P	5,08	5,13	5,13	5,04	4,83	4,52	4,14	3,73	
	50	Q	30109	27404	24883	20363	16480	13166	10354	7977	
		P	6,44	6,36	6,25	5,95	5,55	5,09	4,59	4,09	
FKX50/460 K	60	Q	25852	23445	21209	17217	13808	10912	8463	6393	
		P	7,61	7,42	7,20	6,71	6,15	5,56	4,97	4,40	
70	Q	21534	19431	17485	14031	11104	8636	6559	4806		
	P	8,58	8,29	7,98	7,31	6,62	5,93	5,26	4,65		
FKX50/555 N	30	Q	46372	42392	38670	31955	26145	21158	16911	13324	
		P	4,28	4,50	4,67	4,84	4,83	4,66	4,38	4,02	
	40	Q	41475	37846	34457	28358	23098	18595	14765	11527	
		P	6,14	6,20	6,21	6,10	5,84	5,47	5,01	4,51	
	50	Q	36432	33159	30109	24639	19940	15931	12529	9652	
		P	7,79	7,70	7,57	7,20	6,72	6,16	5,56	4,95	
FKX50/555 K	60	Q	31280	28368	25663	20833	16707	13204	10241	7736	
		P	9,21	8,98	8,71	8,12	7,44	6,73	6,01	5,32	
70	Q	26056	23512	21157	16977	13436	10450	7937	5816		
	P	10,38	10,03	9,65	8,85	8,01	7,17	6,36	5,62		

Performance data at 1450 rpm

Based on 25°C suction gas temperature
without liquid subcooling
 reduced suction gas temperature

R134a

Performance data

1450 rpm

Type	Cond. Temp. °C		Cooling capacity \dot{Q}_0 [W]					Power P [kW]		
			Evaporating temperature °C					-5	-10	-15
			15	12,5	10	5	0			
FKX50/660 N FKX50/660 K	30	Q	55186	50450	46020	38029	31114	25179	20126	15856
		P	5,09	5,36	5,56	5,76	5,75	5,55	5,22	4,78
	40	Q	49359	45039	41006	33749	27489	22129	17571	13718
		P	7,31	7,38	7,39	7,26	6,95	6,51	5,96	5,37
	50	Q	43357	39462	35832	29322	23731	18959	14910	11486
		P	9,27	9,16	9,00	8,56	7,99	7,33	6,62	5,89
60	Q	37226	33761	30542	24793	19883	15714	12187	9206	
	P	10,96	10,68	10,37	9,66	8,86	8,01	7,16	6,34	
70	Q	31009	27981	25179	20205	15990	12436	9446	6921	
	P	12,35	11,93	11,48	10,53	9,53	8,54	7,57	6,69	
FKX50/775 N FKX50/775 K	30	Q	64767	59209	54010	44631	36516	29551	23620	18609
		P	5,98	6,29	6,52	6,76	6,74	6,51	6,12	5,61
	40	Q	57928	52859	48125	39608	32261	25971	20622	16099
		P	8,58	8,66	8,68	8,52	8,16	7,63	7,00	6,30
	50	Q	50885	46313	42053	34413	27851	22251	17499	13480
		P	10,88	10,75	10,57	10,05	9,38	8,60	7,76	6,92
60	Q	43689	39622	35844	29097	23335	18442	14303	10804	
	P	12,86	12,54	12,17	11,34	10,40	9,40	8,40	7,44	
70	Q	36393	32838	29550	23712	18766	14595	11085	8123	
	P	14,50	14,00	13,48	12,36	11,19	10,02	8,89	7,85	

Performance data at 1450 rpm

Based on 25°C suction gas temperature without liquid subcooling

reduced suction gas temperature

FK Series K and N

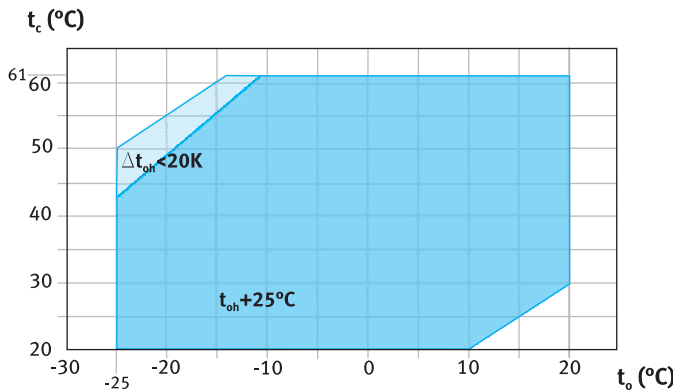
Bus and railway air conditioning

Performance data

R407C

Limits of application

FKX20, FKX30, FKX40, FKX50



- Unlimited application area
- reduced suction gas temperature
- t_o Evaporating temperature [°C]
- t_c Condensing temperature [°C]
- t_{oh} Suction gas temperature [°C]
- Δt_{oh} Suction gas overheating [K]

Note:

Limits of application

Compressor operation is possible within the examples in the diagram showing the limitations of use. The meaning of the surfaces marked in colour are to be observed. Limiting areas should not be selected for layout or continuous operating points.

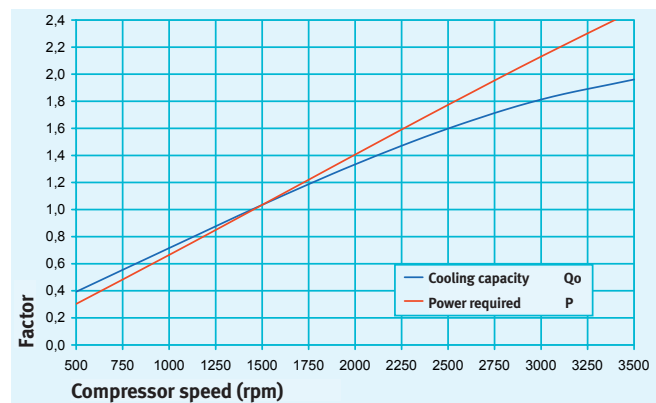
Performance data

Performance specifications for the R407C are based on **25°C suction gas temperature without liquid subcooling. Compressor speed 1450 rpm.**

The values can be stated to judge the overall performance at other speed with the help of the calculation factors below.

For additional technical data for other operating points see Bock software.

Speed range:	
N Design	500 - 2600 rpm
K Design	500 - 3500 rpm
Maximum permissible operating pressure (HP): 28 bar	



R407C

Performance data

1450 rpm

Type	Cond. Temp. °C		Cooling capacity \dot{Q}_0 [W]					Power P [kW]		
			Evaporating temperature °C							
			15	12,5	10	5	0	-5	-10	-15
FKX20/120 N	30	Q	13852	12688	11599	9630	7922	6452	5195	4129
		P	1,37	1,45	1,51	1,57	1,58	1,53	1,44	1,33
FKX20/120 K	40	Q	12393	11334	10344	8558	7013	5686	4552	3588
		P	2,02	2,05	2,05	2,02	1,94	1,82	1,67	1,52
	50	Q	10876	9925	9037	7442	6067	4889	3884	3030
		P	2,60	2,57	2,52	2,40	2,25	2,07	1,88	1,69
FKX20/145 N	30	Q	16679	15278	13966	11596	9540	7769	6256	4972
		P	1,64	1,74	1,81	1,89	1,90	1,84	1,74	1,60
FKX20/145 K	40	Q	14923	13648	12455	10305	8445	6846	5481	4320
		P	2,44	2,46	2,47	2,43	2,33	2,19	2,01	1,83
	50	Q	13097	11951	10882	8961	7305	5887	4677	3648
		P	3,13	3,09	3,04	2,89	2,71	2,49	2,26	2,03
FKX20/170 N	30	Q	19904	18232	16666	13837	11384	9271	7465	5933
		P	1,96	2,08	2,17	2,26	2,27	2,20	2,07	1,91
FKX20/170 K	40	Q	17808	16286	14863	12297	10077	8170	6540	5155
		P	2,91	2,94	2,95	2,90	2,78	2,61	2,40	2,18
	50	Q	15629	14261	12985	10693	8717	7025	5581	4354
		P	3,73	3,68	3,62	3,45	3,23	2,97	2,70	2,42
FKX30/235 N	30	Q	27301	25007	22860	18980	15614	12716	10240	8138
		P	2,69	2,85	2,97	3,10	3,11	3,01	2,85	2,63
FKX30/235 K	40	Q	24426	22338	20386	16867	13823	11206	8971	7071
		P	3,99	4,03	4,05	3,98	3,82	3,58	3,30	2,99
	50	Q	21437	19561	17812	14667	11957	9636	7656	5971
		P	5,12	5,06	4,97	4,74	4,43	4,07	3,70	3,32
FKX30/275 N	30	Q	32410	29687	27138	22532	18536	15096	12156	9661
		P	3,20	3,38	3,52	3,68	3,69	3,58	3,38	3,12
FKX30/275 K	40	Q	28998	26519	24202	20024	16409	13303	10650	8394
		P	4,74	4,79	4,80	4,72	4,53	4,25	3,91	3,55
	50	Q	25449	23222	21145	17412	14195	11439	9088	7089
		P	6,07	6,00	5,90	5,62	5,26	4,84	4,39	3,94
FKX30/325 N	30	Q	38060	34863	31869	26460	21768	17728	14275	11345
		P	3,75	3,97	4,14	4,32	4,33	4,20	3,97	3,66
FKX30/325 K	40	Q	34052	31142	28420	23515	19270	15622	12506	9858
		P	5,56	5,62	5,64	5,55	5,32	4,99	4,60	4,17
	50	Q	29885	27270	24831	20447	16670	13433	10673	8325
		P	7,13	7,05	6,93	6,60	6,17	5,68	5,15	4,63
FKX40/390 N	30	Q	45052	41268	37725	31322	25767	20985	16898	13430
		P	4,44	4,70	4,90	5,11	5,13	4,97	4,70	4,33
FKX40/390 K	40	Q	40309	36863	33642	27835	22811	18492	14804	11669
		P	6,58	6,66	6,67	6,57	6,30	5,91	5,44	4,93
	50	Q	35376	32280	29393	24204	19732	15901	12634	9854
		P	8,44	8,35	8,21	7,82	7,31	6,72	6,10	5,48
FKX40/470 N	30	Q	54466	49891	45607	37866	31151	25369	20429	16236
		P	5,37	5,69	5,92	6,18	6,20	6,01	5,68	5,24
FKX40/470 K	40	Q	48732	44566	40672	33651	27577	22356	17897	14107
		P	7,96	8,05	8,07	7,94	7,61	7,15	6,58	5,96
	50	Q	42767	39025	35535	29262	23855	19224	15274	11913
		P	10,21	10,09	9,92	9,45	8,83	8,13	7,38	6,63
FKX40/560 N	30	Q	64956	59500	54391	45159	37151	30256	24363	19363
		P	6,41	6,78	7,06	7,37	7,39	7,17	6,77	6,25
FKX40/560 K	40	Q	58117	53149	48505	40132	32888	26662	21344	16824
		P	9,49	9,60	9,62	9,47	9,08	8,52	7,85	7,11
	50	Q	51004	46542	42379	34897	28450	22926	18215	14208
		P	12,17	12,03	11,83	11,27	10,54	9,69	8,80	7,90
FKX40/655 N	30	Q	76117	69723	63736	52918	43534	35454	28549	22690
		P	7,50	7,95	8,28	8,64	8,66	8,40	7,93	7,32
FKX40/655 K	40	Q	68103	62282	56839	47028	38539	31243	25011	19715
		P	11,12	11,25	11,28	11,10	10,64	9,99	9,19	8,33
	50	Q	59768	54538	49660	40893	33338	26865	21345	16649
		P	14,26	14,10	13,86	13,20	12,35	11,36	10,31	9,26

Performance data at 1450 rpm

Based on 25°C suction gas temperature without liquid subcooling

FK Series K and N

Bus and railway air conditioning

R407C

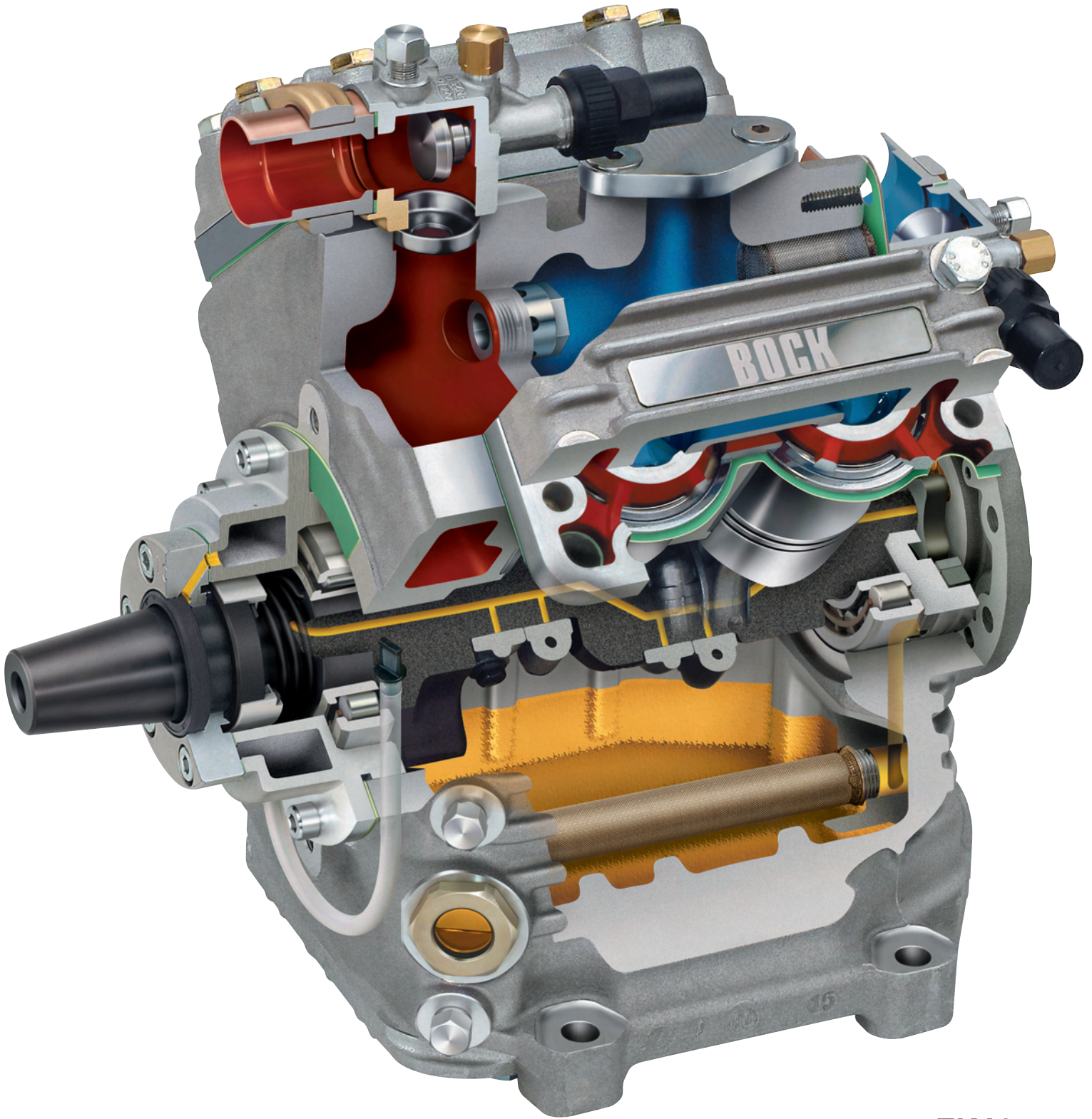
Performance data

1450 rpm

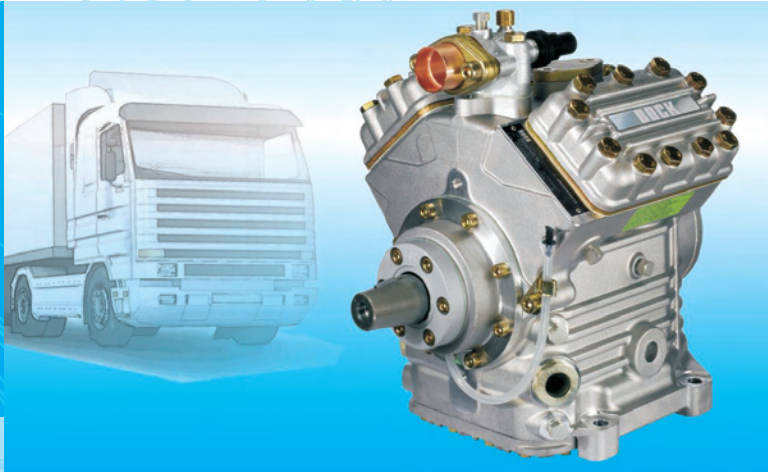
Type	Cond. Temp. °C		Cooling capacity \dot{Q}_0 [W]					Power P [kW]		
			Evaporating temperature °C							
			15	12,5	10	5	0	-5	-10	-15
FKX50/460 N	30	Q	53929	49399	45157	37493	30844	25119	20227	16076
		P	5,32	5,63	5,87	6,13	6,14	5,96	5,62	5,19
FKX50/460 K	40	Q	48251	44127	40271	33320	27305	22136	17721	13968
		P	7,88	7,97	7,99	7,86	7,54	7,07	6,51	5,90
	50	Q	42346	38641	35185	28973	23620	19034	15123	11796
		P	10,11	9,99	9,82	9,35	8,75	8,05	7,30	6,56
FKX50/555 N	30	Q	64949	59494	54385	45155	37147	30253	24361	19361
		P	6,40	6,78	7,06	7,37	7,39	7,17	6,77	6,25
FKX50/555 K	40	Q	58111	53144	48500	40128	32885	26660	21342	16822
		P	9,49	9,60	9,62	9,47	9,08	8,52	7,84	7,11
	50	Q	50999	46537	42374	34894	28447	22924	18213	14206
		P	12,17	12,03	11,83	11,27	10,53	9,69	8,80	7,90
FKX50/660 N	30	Q	77469	70961	64868	53858	44307	36084	29056	23093
		P	7,64	8,09	8,43	8,80	8,81	8,55	8,08	7,45
FKX50/660 K	40	Q	69312	63388	57849	47863	39223	31798	25456	20065
		P	11,32	11,45	11,48	11,29	10,83	10,16	9,36	8,48
	50	Q	60829	55507	50542	41620	33930	27342	21724	16945
		P	14,52	14,35	14,11	13,44	12,57	11,56	10,49	9,43
FKX50/775 N	30	Q	90911	83275	76124	63204	51995	42345	34098	27100
		P	8,97	9,49	9,88	10,31	10,34	10,03	9,47	8,74
FKX50/775 K	40	Q	81339	74386	67887	56168	46029	37316	29873	23547
		P	13,28	13,43	13,46	13,25	12,71	11,93	10,98	9,95
	50	Q	71384	65139	59312	48842	39818	32087	25494	19885
		P	17,03	16,84	16,56	15,77	14,75	13,57	12,31	11,06

Performance data at 1450 rpm

Based on 25°C suction gas temperature
without liquid subcooling



FK40



FK series TK

R404A | R507 | R22

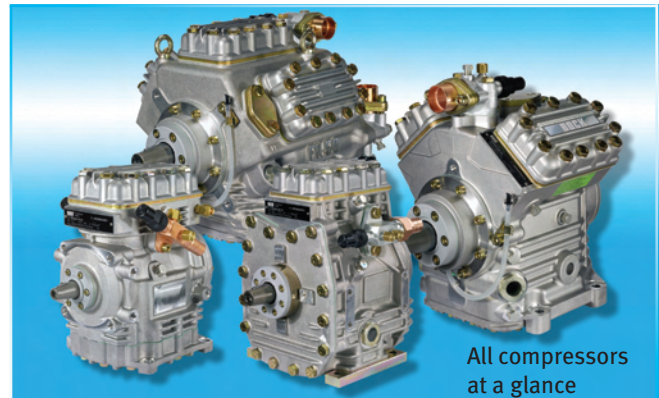
**Compressors for
transport cooling**

At a glance

Bock vehicle compressors of the FK range are the result of many years of experience in the domain of mobile cooling systems.

The unsurpassed light, compact, robust design and wide r.p.m. range are only some of the outstanding features of this unique product range of two, four and six cylinder compressors. A wide variety of designs can be tailored to suit individual requirements.

For low temperature applications, an optimised TK model is available.



All compressors at a glance

Models available

Type	Levels of displacement [cm ³]	Design variants
FK20	120, 145, 170	TK
FK30	235, 275, 325	TK
FK40	390, 470, 560, 655	TK
FK50	460, 555, 660, 775	TK

TK specially for deep freezing
For a detailed description see also page 6

In addition for electrical operation, we have an interesting selection of compressors from our semi-hermetic programme. For other requirements, please ask us.

Type key



¹⁾ X = Ester oil filling (HFC refrigerant, e.g. R404A, R507)

²⁾ TK = specially for deep freezing

Technical data, dimensions and connections, scope of supply and accessories

can be found from page 27 onwards

FK Series TK

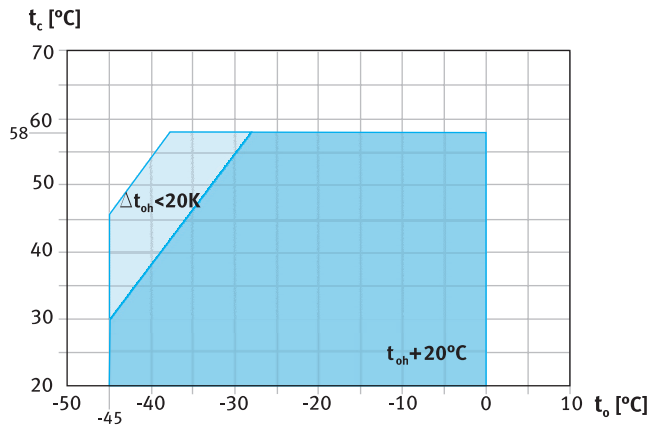
Transport cooling


Performance data


R404A/R507

Limits of application

FKX20, FKX30, FKX40, FKX50



 Unlimited application area

 reduced suction gas temperature

t_o Evaporating temperature [°C]

t_c Condensing temperature [°C]

t_{oh} Suction gas temperature [°C]

Δt_{oh} Suction gas overheating [K]

Note:

Limits of application

Compressor operation is possible within the examples in the diagram showing the limitations of use. The meaning of the surfaces marked in colour are to be observed. Limiting areas should not be selected for layout or continuous operating points.

Performance data

Performance specifications for the R404A/R507 are based on **20°C suction gas temperature without liquid subcooling. Compressor speed 1450 rpm.**

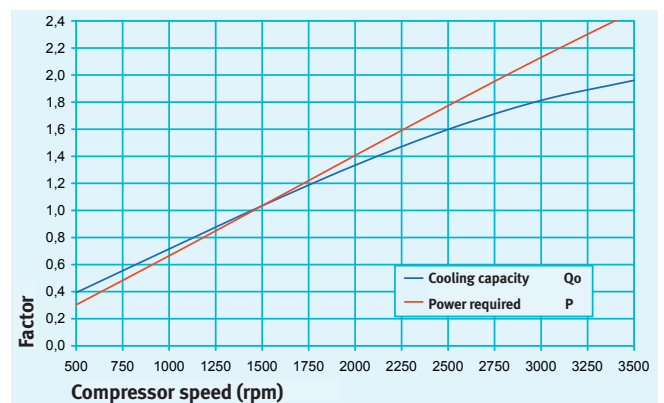
The values can be stated to judge the overall performance at other speed with the help of the calculation factors below.

For additional technical data for other operating points see Bock software.

Speed range:

TK Design 500 - 2600 rpm

Maximum permissible operating pressure (HP): 28 bar



R404A/R507

Performance data

1450 rpm

Type	Cond. Temp. °C		Cooling capacity \dot{Q}_0 [W]					Power P [kW]		
			Evaporating temperature °C							
			0	-5	-10	-15	-20	-25	-30	-35
FKX20/120 TK	30	Q	9438	7867	6479	5263	4208	3302	2535	1896
		P	2,09	2,01	1,90	1,77	1,62	1,45	1,28	1,10
	40	Q	8045	6668	5456	4400	3488	2709	2053	1508
		P	2,39	2,25	2,09	1,92	1,72	1,52	1,31	1,10
	50	Q	6620	5443	4414	3524	2762	2117	1579	1135
		P	2,65	2,46	2,25	2,03	1,80	1,56	1,32	1,08
FKX20/145 TK	30	Q	11362	9471	7800	6336	5065	3975	3052	2283
		P	2,52	2,42	2,29	2,13	1,95	1,75	1,54	1,33
	40	Q	9686	8027	6569	5297	4199	3261	2471	1816
		P	2,88	2,71	2,52	2,31	2,07	1,83	1,58	1,33
	50	Q	7970	6552	5314	4243	3326	2549	1900	1366
		P	3,20	2,96	2,71	2,44	2,16	1,88	1,59	1,30
FKX20/170 TK	30	Q	13561	11304	9310	7563	6046	4744	3643	2725
		P	3,01	2,89	2,73	2,54	2,32	2,09	1,84	1,58
	40	Q	11560	9581	7840	6322	5011	3892	2949	2167
		P	3,44	3,24	3,01	2,75	2,48	2,19	1,89	1,59
	50	Q	9513	7820	6343	5064	3969	3043	2268	1631
		P	3,81	3,54	3,24	2,92	2,58	2,24	1,89	1,55
FKX30/235 TK	30	Q	20377	17011	14041	11442	9187	7251	5608	4231
		P	3,94	3,83	3,66	3,44	3,17	2,88	2,56	2,23
	40	Q	17437	14495	11911	9657	7710	6042	4628	3442
		P	4,66	4,41	4,11	3,77	3,40	3,01	2,61	2,21
	50	Q	14498	11985	9791	7889	6254	4860	3680	2690
		P	5,28	4,89	4,47	4,02	3,56	3,08	2,61	2,15
FKX30/275 TK	30	Q	24191	20195	16670	13584	10907	8609	6658	5024
		P	4,67	4,55	4,34	4,08	3,77	3,42	3,04	2,65
	40	Q	20701	17209	14140	11465	9153	7173	5495	4086
		P	5,53	5,24	4,88	4,48	4,04	3,57	3,10	2,63
	50	Q	17212	14229	11624	9366	7425	5769	4369	3193
		P	6,27	5,81	5,31	4,78	4,22	3,66	3,10	2,56
FKX30/325 TK	30	Q	28407	23715	19575	15951	12808	10109	7818	5899
		P	5,49	5,34	5,10	4,79	4,42	4,01	3,57	3,11
	40	Q	24309	20208	16604	13463	10748	8423	6452	4798
		P	6,50	6,15	5,73	5,26	4,74	4,20	3,64	3,09
	50	Q	20212	16709	13649	10998	8719	6775	5130	3750
		P	7,36	6,82	6,24	5,61	4,96	4,30	3,64	3,00
FKX40/390 TK	30	Q	31916	26566	21831	17679	14078	10994	8397	6252
		P	6,69	6,39	6,00	5,53	5,00	4,43	3,85	3,28
	40	Q	27353	22603	18421	14775	11632	8961	6729	4903
		P	7,67	7,17	6,60	5,97	5,30	4,62	3,95	3,30
	50	Q	22482	18375	14790	11693	9054	6839	5016	3553
		P	8,36	7,68	6,95	6,18	5,40	4,62	3,88	3,18
FKX40/470 TK	30	Q	38585	32117	26393	21373	17019	13292	10151	7559
		P	8,09	7,73	7,25	6,68	6,04	5,36	4,66	3,96
	40	Q	33069	27326	22270	17862	14063	10834	8135	5928
		P	9,27	8,67	7,98	7,21	6,41	5,59	4,78	4,00
	50	Q	27179	22214	17880	14137	10946	8268	6064	4295
		P	10,10	9,28	8,40	7,47	6,53	5,59	4,69	3,85
FKX40/560 TK	30	Q	46016	38303	31476	25490	20297	15851	12106	9015
		P	9,65	9,22	8,65	7,97	7,21	6,39	5,55	4,72
	40	Q	39437	32588	26559	21302	16771	12920	9702	7070
		P	11,06	10,34	9,51	8,60	7,65	6,67	5,70	4,76
	50	Q	32414	26493	21323	16859	13054	9860	7232	5123
		P	12,05	11,07	10,01	8,91	7,78	6,67	5,59	4,59
FKX40/655 TK	30	Q	54393	45269	37218	30176	24081	18869	14477	10842
		P	11,04	10,70	10,14	9,41	8,55	7,62	6,66	5,71
	40	Q	46423	38384	31328	25192	19913	15427	11671	8582
		P	12,90	12,14	11,23	10,19	9,09	7,96	6,86	5,84
	50	Q	38345	31422	25393	20194	15762	12033	8945	6433
		P	14,50	13,38	12,15	10,86	9,57	8,30	7,12	6,07

Performance data at 1450 rpm

Based on 20°C suction gas temperature without liquid subcooling

reduced suction gas temperature

FK Series TK

Transport cooling

R404A/R507

Performance data

1450 rpm

Type	Cond. Temp. °C		Cooling capacity \dot{Q}_0 [W]					Power P [kW]			
			Evaporating temperature °C								
			0	-5	-10	-15	-20	-25	-30	-35	
FKX50/460 TK	30	Q	38009	31546	25824	20804	16445	12706	9547	6928	
		P	7,22	7,05	6,74	6,30	5,75	5,13	4,45	3,75	
	40	Q	32481	26764	21728	17333	13539	10304	7589	5354	
		P	8,53	8,09	7,52	6,85	6,11	5,32	4,51	3,69	
	50	Q	26666	21743	17441	13720	10538	7857	5635	3832	
		P	9,57	8,87	8,08	7,21	6,29	5,36	4,43	3,53	
FKX50/555 TK	30	Q	45781	37997	31105	25059	19808	15304	11499	8344	
		P	8,69	8,50	8,12	7,58	6,93	6,18	5,36	4,52	
	40	Q	39123	32237	26171	20877	16307	12411	9141	6449	
		P	10,27	9,74	9,06	8,26	7,36	6,41	5,43	4,45	
	50	Q	32119	26189	21007	16525	12693	9464	6787	4616	
		P	11,53	10,69	9,73	8,68	7,58	6,45	5,33	4,25	
FKX50/660 TK	30	Q	54596	45313	37094	29883	23622	18251	13713	9951	
		P	10,36	10,13	9,68	9,04	8,26	7,36	6,40	5,39	
	40	Q	46656	38444	31210	24897	19447	14801	10902	7691	
		P	12,25	11,62	10,80	9,85	8,78	7,64	6,47	5,31	
	50	Q	38303	31232	25052	19707	15137	11286	8094	5504	
		P	13,75	12,74	11,60	10,35	9,04	7,70	6,36	5,06	
FKX50/775 TK	30	Q	63521	53066	43678	35333	28005	21669	16298	11867	
		P	12,43	12,15	11,58	10,78	9,81	8,71	7,54	6,37	
	40	Q	54484	45085	36703	29311	22884	17397	12824	9141	
		P	14,72	13,90	12,87	11,66	10,35	8,98	7,60	6,29	
	50	Q	45112	36867	29588	23247	17820	13282	9606	6767	
		P	16,62	15,32	13,86	12,30	10,70	9,11	7,58	6,17	

Performance data at 1450 rpm

Based on 20°C suction gas temperature
without liquid subcooling

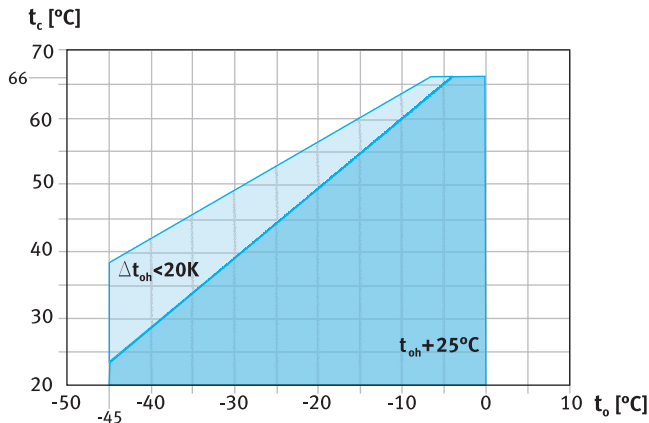
reduced suction gas temperature

Performance data

R22

Limits of application

FK20, FK30, FK40, FK50



- Unlimited application area
- reduced suction gas temperature
- t_o Evaporating temperature [°C]
- t_c Condensing temperature [°C]
- t_{oh} Suction gas temperature [°C]
- Δt_{oh} Suction gas overheating [K]

Note:

Limits of application

Compressor operation is possible within the examples in the diagram showing the limitations of use. The meaning of the surfaces marked in colour are to be observed. Limiting areas should not be selected for layout or continuous operating points.

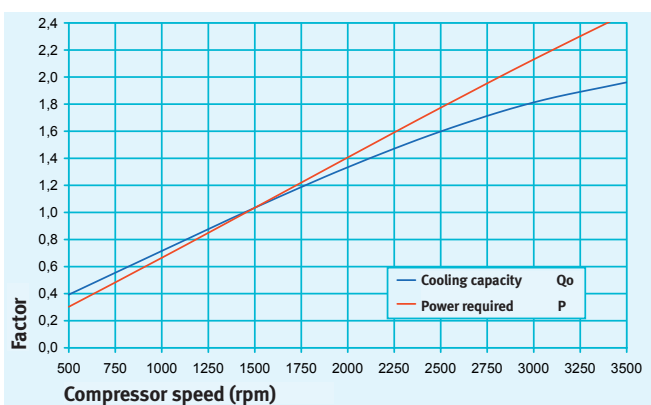
Performance data

Performance specifications for the R22 are based on **25°C suction gas temperatures without liquid subcooling. Compressor speed 1450 rpm.**

The values can be stated to judge the overall performance at other speed with the help of the calculation factors below.

For additional technical data for other operating points see Bock software.

Speed range:
TK Design 500 - 2600 rpm
Maximum permissible operating pressure (HP): 28 bar



FK Series TK

Transport cooling

R22


Performance data

1450 rpm

Type	Cond. Temp. °C		Cooling capacity \dot{Q}_0 [W]					Power P [kW]			
			Evaporating temperature °C								
			0	-5	-10	-15	-20	-25	-30	-35	
FK20/120 TK	30	Q	8625	7164	5893	4796	3857	3058	2384	1818	
		P	1,60	1,60	1,56	1,48	1,39	1,29	1,18	1,07	
	40	Q	7835	6484	5311	4302	3440	2707	2088	1566	
		P	2,00	1,94	1,84	1,73	1,60	1,46	1,33	1,22	
	50	Q	7021	5783	4714	3797	3015	2353			
		P	2,38	2,26	2,11	1,95	1,79	1,63			
FK20/145 TK	30	Q	10436	8668	7130	5803	4666	3700	2885	2200	
		P	1,94	1,93	1,88	1,80	1,68	1,56	1,42	1,30	
	40	Q	9481	7845	6427	5206	4162	3276	2527	1895	
		P	2,42	2,35	2,23	2,09	1,93	1,77	1,61	1,48	
	50	Q	8495	6997	5704	4594	3648	2847			
		P	2,88	2,73	2,56	2,37	2,17	1,98			
FK20/170 TK	30	Q	12420	10316	8486	6906	5553	4404	3433	2618	
		P	2,31	2,30	2,24	2,14	2,00	1,85	1,69	1,54	
	40	Q	11283	9336	7648	6195	4953	3898	3007	2255	
		P	2,88	2,79	2,65	2,49	2,30	2,11	1,92	1,76	
	50	Q	10110	8327	6788	5467	4342	3388			
		P	3,43	3,25	3,04	2,82	2,58	2,35			
FK30/235 TK	30	Q	17046	14158	11646	9479	7622	6044	4712	3593	
		P	3,16	3,16	3,08	2,93	2,75	2,54	2,33	2,12	
	40	Q	15485	12814	10497	8503	6798	5350	4127	3095	
		P	3,96	3,83	3,64	3,41	3,16	2,89	2,64	2,41	
	50	Q	13875	11429	9316	7503	5959	4649			
		P	4,71	4,46	4,18	3,86	3,54	3,23			
FK30/275 TK	30	Q	20286	16849	13860	11280	9071	7193	5608	4276	
		P	3,77	3,76	3,66	3,49	3,27	3,02	2,77	2,52	
	40	Q	18428	15249	12492	10119	8090	6367	4911	3684	
		P	4,71	4,56	4,34	4,06	3,76	3,44	3,14	2,87	
	50	Q	16513	13601	11087	8929	7091	5533			
		P	5,60	5,31	4,97	4,60	4,22	3,84			
FK30/325 TK	30	Q	23808	19774	16266	13239	10645	8441	6581	5019	
		P	4,42	4,41	4,30	4,10	3,84	3,55	3,25	2,96	
	40	Q	21628	17897	14661	11876	9494	7472	5764	4323	
		P	5,53	5,35	5,09	4,77	4,41	4,04	3,68	3,37	
	50	Q	19379	15963	13011	10480	8322	6494			
		P	6,57	6,23	5,83	5,40	4,95	4,51			
FK40/390 TK	30	Q	28175	23401	19250	15667	12598	9990	7788	5940	
		P	5,23	5,22	5,09	4,85	4,55	4,20	3,84	3,50	
	40	Q	25595	21179	17350	14054	11236	8843	6821	5116	
		P	6,54	6,33	6,02	5,64	5,22	4,78	4,36	3,98	
	50	Q	22934	18891	15398	12402	9849	7685			
		P	7,78	7,38	6,90	6,39	5,85	5,34			
FK40/470 TK	30	Q	34091	28316	23293	18957	15244	12088	9424	7187	
		P	6,33	6,32	6,15	5,87	5,50	5,08	4,65	4,24	
	40	Q	30970	25627	20994	17005	13596	10700	8253	6191	
		P	7,92	7,66	7,29	6,82	6,31	5,78	5,28	4,82	
	50	Q	27750	22858	18632	15006	11917	9299			
		P	9,41	8,93	8,35	7,73	7,08	6,46			
FK40/560 TK	30	Q	40572	33698	27720	22561	18141	14385	11215	8553	
		P	7,53	7,52	7,32	6,98	6,55	6,05	5,54	5,05	
	40	Q	36857	30498	24985	20238	16180	12734	9822	7367	
		P	9,42	9,12	8,67	8,12	7,51	6,88	6,28	5,74	
	50	Q	33025	27203	22173	17859	14183	11067			
		P	11,20	10,62	9,94	9,20	8,43	7,69			
FK40/655 TK	30	Q	47615	39548	32533	26477	21291	16883	13162	10038	
		P	8,84	8,82	8,59	8,20	7,68	7,10	6,50	5,92	
	40	Q	43255	35793	29322	23751	18989	14945	11528	8646	
		P	11,06	10,70	10,18	9,53	8,82	8,08	7,37	6,73	
	50	Q	38759	31925	26023	20959	16645	12988			
		P	13,14	12,47	11,67	10,79	9,89	9,02			

Performance data at 1450 rpm

Based on 25°C suction gas temperature without liquid subcooling

 reduced suction gas temperature

R22

Performance data

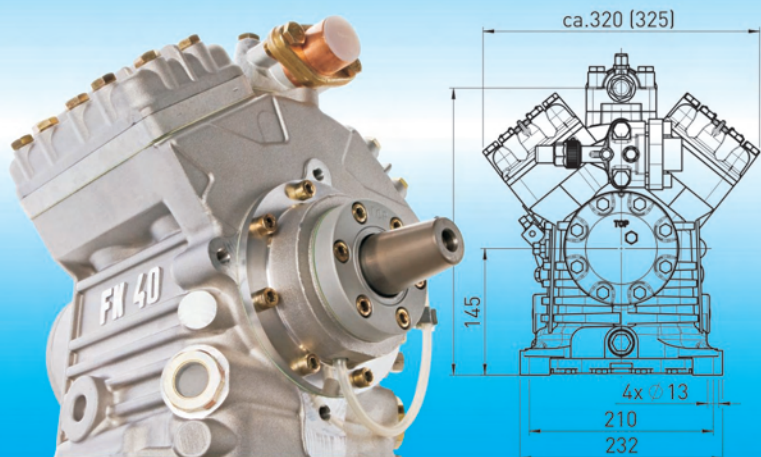
1450 rpm

Type	Cond. Temp. °C		Cooling capacity \dot{Q}_0 [W]					Power P [kW]		
			Evaporating temperature °C							
			0	-5	-10	-15	-20	-25	-30	-35
FK50/460 TK	30	Q	33637	27938	22982	18705	15041	11927	9298	7091
		P	6,25	6,23	6,07	5,79	5,43	5,02	4,59	4,18
	40	Q	30557	25286	20714	16779	13414	10557	8143	6108
P		7,81	7,56	7,19	6,73	6,23	5,71	5,21	4,76	
50	Q	27381	22553	18383	14806	11758	9175			
	P	9,29	8,81	8,24	7,62	6,99	6,37			
FK50/555 TK	30	Q	40701	33806	27809	22632	18199	14431	11251	8580
		P	7,56	7,54	7,35	7,01	6,57	6,07	5,55	5,06
	40	Q	36974	30596	25064	20302	16232	12775	9854	7391
P		9,45	9,15	8,70	8,15	7,54	6,91	6,30	5,76	
50	Q	33131	27289	22244	17916	14228	11102			
	P	11,24	10,66	9,97	9,23	8,46	7,71			
FK50/660 TK	30	Q	48438	40231	33095	26935	21659	17174	13389	10211
		P	8,99	8,98	8,74	8,34	7,82	7,22	6,61	6,02
	40	Q	44002	36411	29829	24161	19317	15203	11727	8796
P		11,25	10,88	10,35	9,70	8,97	8,22	7,50	6,85	
50	Q	39428	32477	26472	21321	16932	13212			
	P	13,37	12,68	11,87	10,98	10,06	9,18			
FK50/775 TK	30	Q	56847	47216	38840	31611	25419	20156	15714	11984
		P	10,55	10,54	10,26	9,79	9,17	8,48	7,76	7,07
	40	Q	51641	42733	35007	28356	22670	17842	13762	10323
P		13,20	12,77	12,15	11,38	10,53	9,65	8,80	8,04	
50	Q	46273	38115	31068	25023	19872	15506			
	P	15,69	14,88	13,93	12,88	11,81	10,77			

Performance data at 1450 rpm

Based on 25°C suction gas temperature without liquid subcooling

reduced suction gas temperature



FK Series

K | N | TK

Data Overview

- › *Technical data*
- › *Dimensions and connections*
- › *Scope of delivery, accessories*

Technical data

The technical data are the same for the various design variants K, N and TK.

In the data concerning the type of compressor, these additions are not taken into account.

Type	Number of Cyl.	Swept volume	Displ. volume (1450 rpm)	Weight	Connections		Oil filling		
					Discharge line DV			Suction line SV	
					mm Inches	mm Inches		Ltr.	
FK20/120	2	118	10,3	15	16 5/8	16 5/8	0,7		
FK20/145	2	143	12,4	14	16 5/8	16 5/8	0,7		
FK20/170	2	170	14,8	14	16 5/8	16 5/8	0,7		
FK30/235	2	235	20,3	25	16 5/8	22 7/8	2,0		
FK30/275	2	275	24,1	25	22 7/8	28 1 1/8	2,0		
FK30/325	2	325	28,3	25	22 7/8	28 1 1/8	2,0		
FK40/390	4	385	33,5	34	22 7/8	28 1 1/8	2,0		
FK40/470	4	465	40,5	33	28 1 1/8	35 1 3/8	2,0		
FK40/560	4	555	48,3	33	28 1 1/8	35 1 3/8	2,0		
FK40/655	4	650	56,6	31	35 1 3/8	35 1 3/8	2,0		
FK50/460	6	460	40,1	44	28 1 1/8	35 1 3/8	2,6		
FK50/555	6	555	48,3	43	28 1 1/8	35 1 3/8	2,6		
FK50/660	6	660	57,6	42	35 1 3/8	2 x 35 1 3/8	2,6		
FK50/775	6	775	67,6	41	35 1 3/8	2 x 35 1 3/8	2,6		

For additional technical data see Bock software

Data Overview

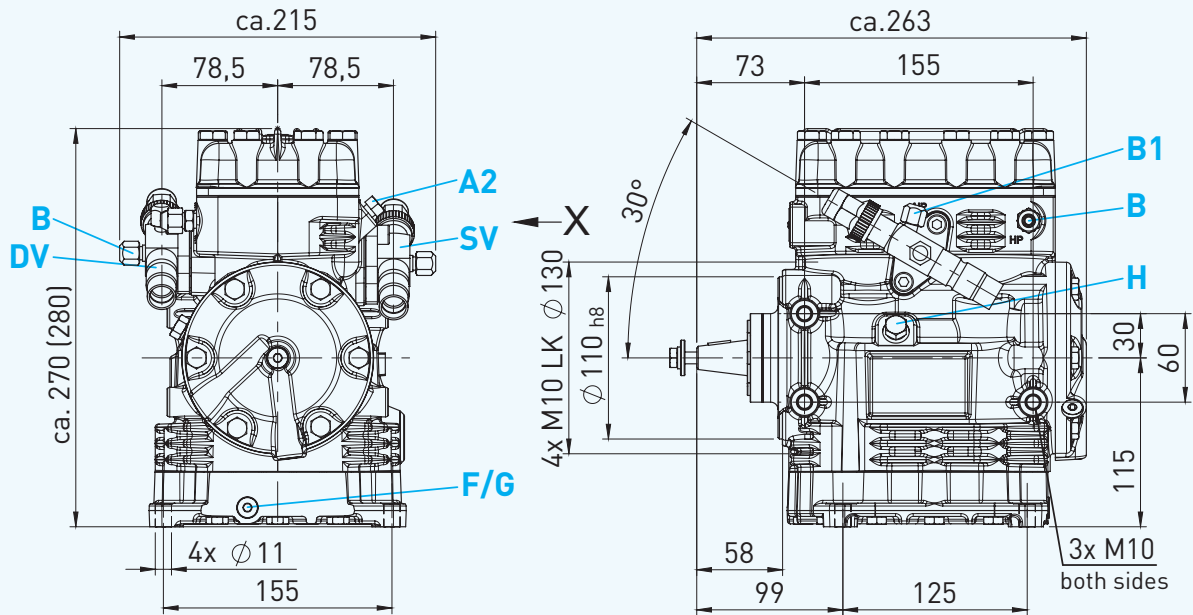
Dimensions and connections

FK20

FK20/120 K
FK20/120 N
FK20/120 TK

FK20/145 K
FK20/145 N
FK20/145 TK

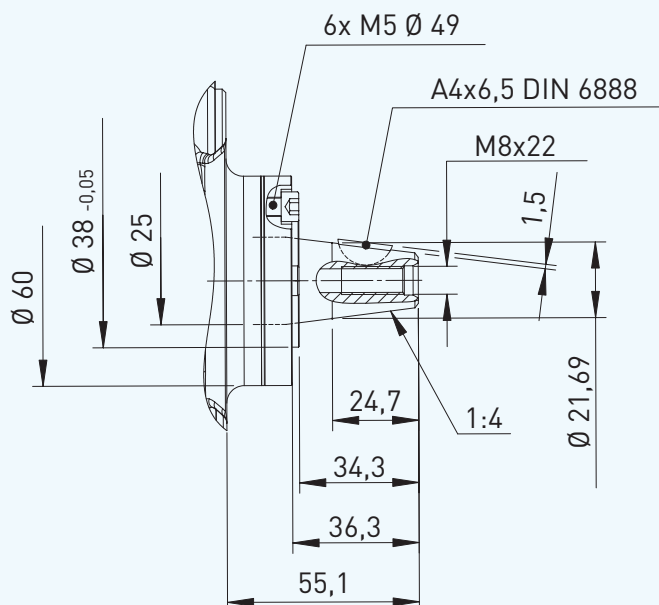
FK20/170 K
FK20/170 N
FK20/170 TK



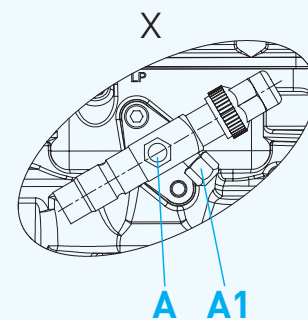
() = K Design

Dimensions in mm

Shaft end



View X

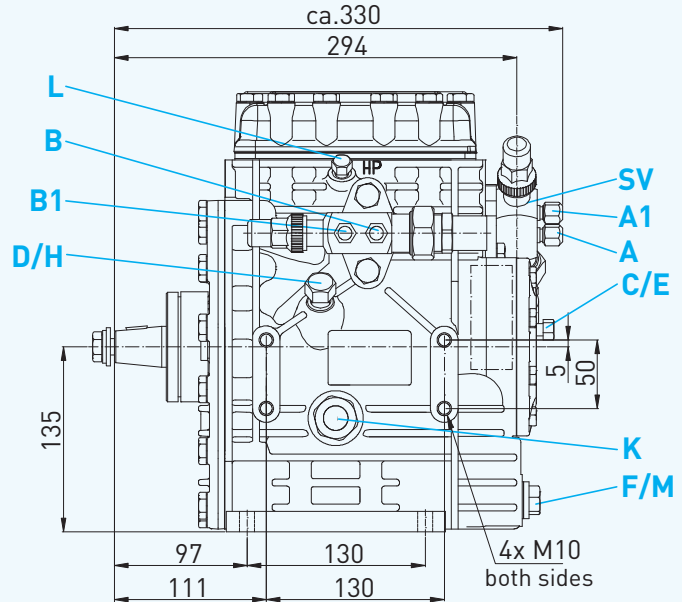
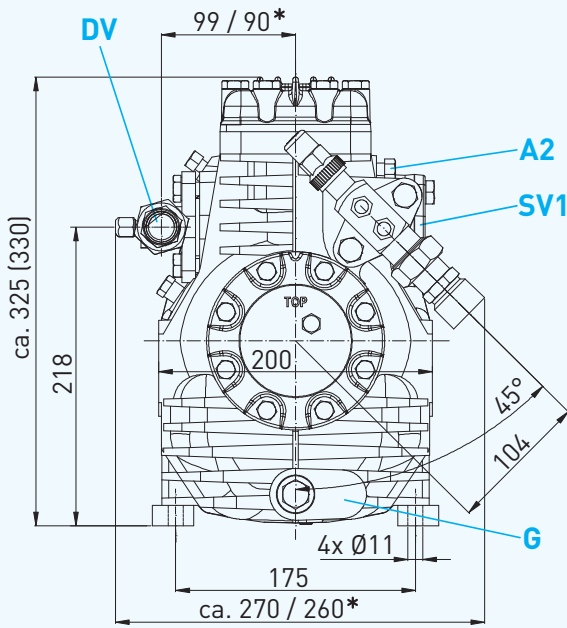


Dimensions in mm

Dimensions and connections

FK30

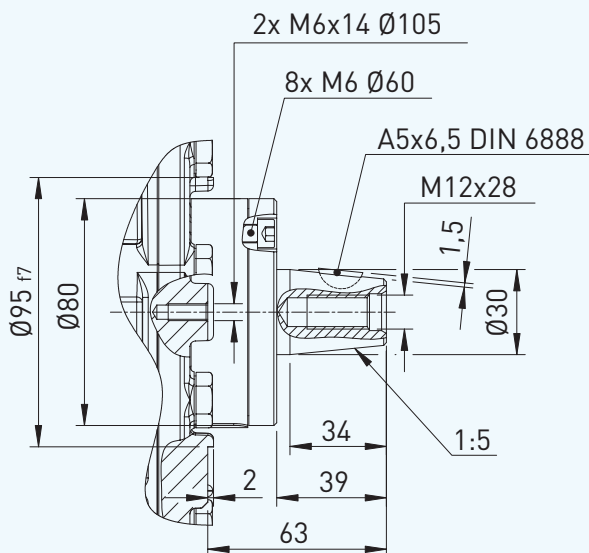
FK30/235 K	FK30/275 K	FK30/325 K
FK30/235 N	FK30/275 N	FK30/325 N
FK30/235 TK	FK30/275 TK	FK30/325 TK



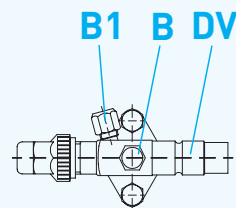
*= FK 30/235
 []= K Design

Dimensions in mm

Shaft end



Discharge shut-off valve FK30/235



Dimensions in mm

Data Overview

Dimensions and connections

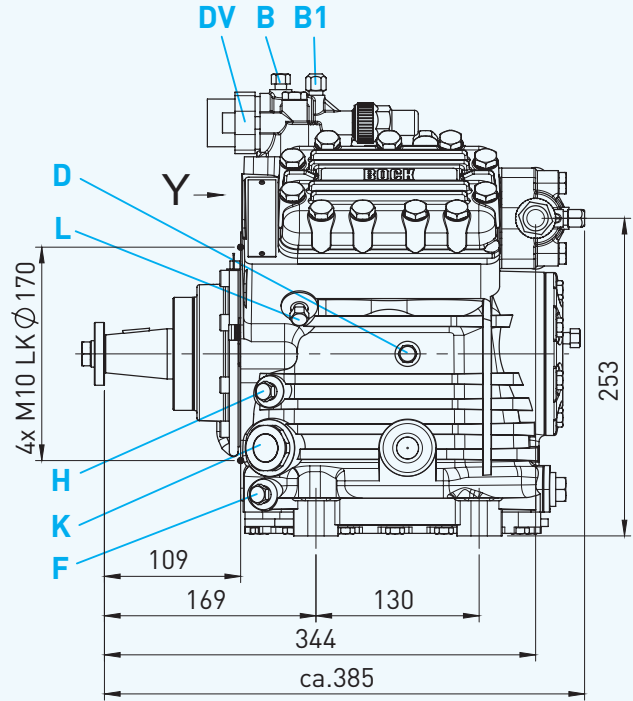
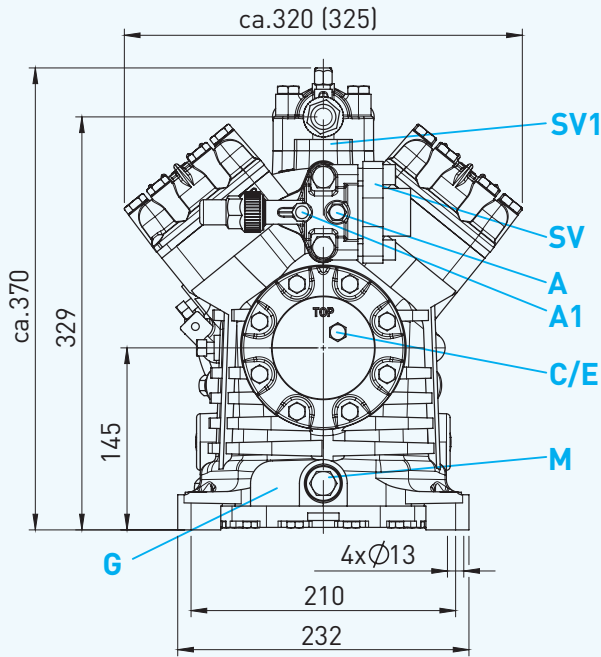
FK40

FK40/390 K
FK40/390 N
FK40/390 TK

FK40/470 K
FK40/470 N
FK40/470 TK

FK40/560 K
FK40/560 N
FK40/560 TK

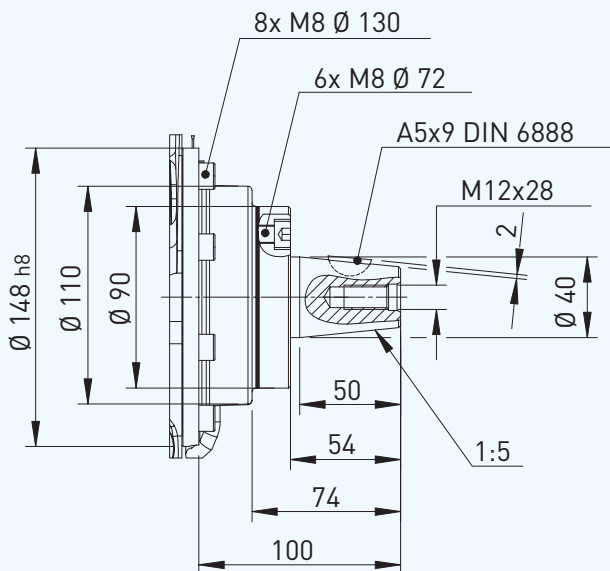
FK40/655 K
FK40/655 N
FK40/655 TK



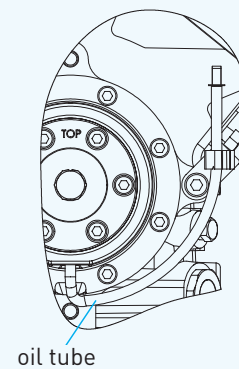
()= K Design

Dimensions in mm

Shaft end



View Y

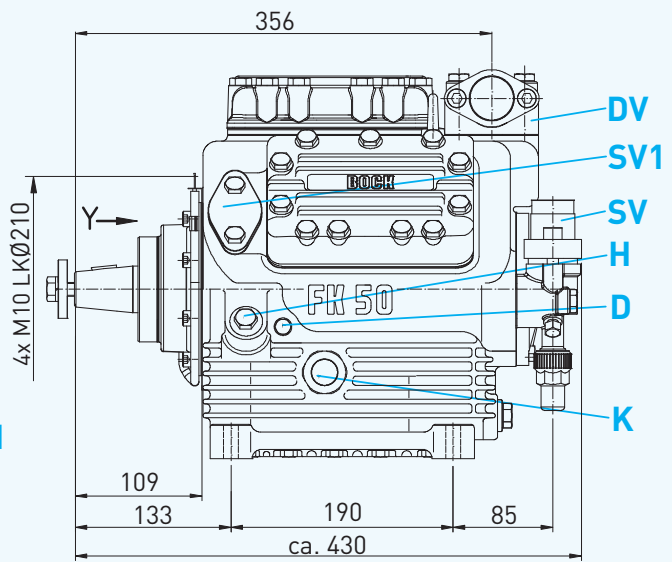
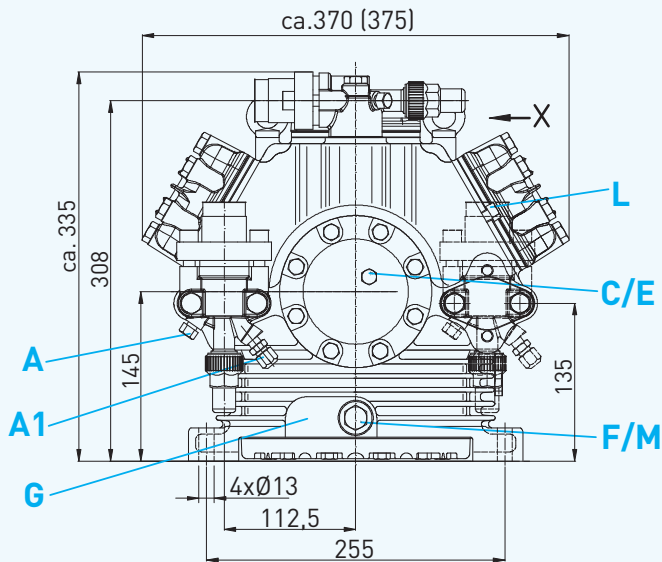


Dimensions in mm

Dimensions and connections

FK50

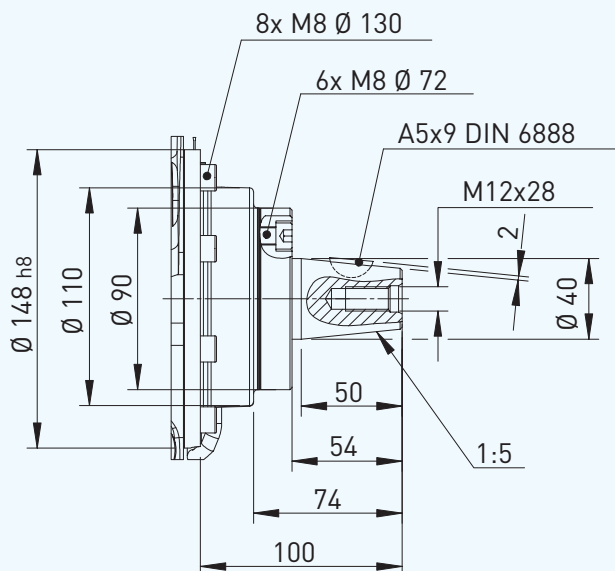
FK50/460 K	FK50/555 K	FK50/660 K	FK50/775 K
FK50/460 N	FK50/555 N	FK50/660 N	FK50/775 N
FK50/460 TK	FK50/555 TK	FK50/660 TK	FK50/775 TK



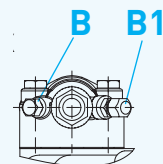
() = K Design

Dimensions in mm

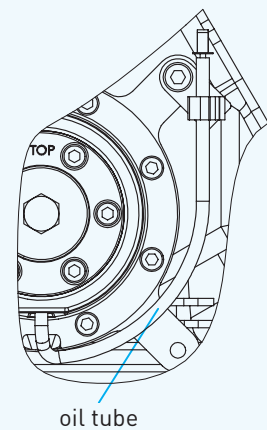
Shaft end



View X



View Y



Dimensions in mm

Data Overview

Dimensions and connections

Connections	FK20	FK30	FK40	FK50
SV Suction line DV Discharge line	see technical data, page 28			
A Suction side connection not lockable	7/16" UNF	7/16" UNF	1/8" NPTF	1/8" NPTF
A1 Suction side connection lockable	7/16" UNF	7/16" UNF	7/16" UNF	7/16" UNF
A2 Suction side connection not lockable	1/8" NPTF	1/8" NPTF	—	—
B Discharge side connection not lockable	7/16" UNF	7/16" UNF	1/8" NPTF	1/8" NPTF
B1 Discharge side connection lockable	7/16" UNF	7/16" UNF	7/16" UNF	7/16" UNF
C Oil pressure safety switch connection OIL	—	1/8" NPTF	1/8" NPTF	1/8" NPTF
D Oil pressure safety switch connection LP	—	1/4" NPTF	1/8" NPTF	1/8" NPTF
E Oil pressure gauge connection	—	1/8" NPTF	1/8" NPTF	1/8" NPTF
F Oil drain	G 1/8"	M22 x 1,5	1/4" NPTF	M22 x 1,5
G Optional connection oil sump heating	●1)	●1)	●1)	●1)
H Oil charge plug	1/4" NPTF	1/4" NPTF	1/4" NPTF	M22 x 1,5
K Sight glass	●2)	1 1/8" -18 UNEF	2 x 1 1/8" -18 UNEF	2 x 1 1/8" -18 UNEF
L Connection thermal protection thermostat	—3)	1/8" NPTF	1/8" NPTF	1/8" NPTF
M Oil filter	—	M22 x 1,5	M22 x 1,5	M22 x 1,5
SV1 Optional connection suction valve	—	●	●	●

● Option available

1) No connection available as standard.
Available on request (Connection M22 x 1,5)

2) Standard is without sight glass
Available on request (Connection M20 x 1)

3) No connection available as standard.
Available on request (1/8" NPTF, Intermediate flange required)

Scope of delivery

The accessories are the same for the various levels of displacement and the design variants K, N and TK. In the data concerning the type of compressor, these additions are not taken into account.

FK scope of delivery	FK20	FK30	FK40	FK50
Open piston compressor in a light aluminium construction, with suction and discharge valves	●	●	●	●
Two cylinder, cylinder arrangement in row	●	●		
Four cylinder, cylinder arrangement in V			●	
Six cylinder, cylinder arrangement in W				●
Integrated oil collecting system for the shaft seal, felt insert design		●		
Integrated oil collecting system for the shaft seal, hose drain design			●	●
Seat front bearing flange		●	●	●
Fastening possibility for electromagnetic clutch	●	●	●	●
Possible design variants ¹⁾				
K Design	●	●	●	●
N Design	●	●	●	●
TK Design	●	●	●	●
Oil filling: FK: FUCHS Reniso SP 46 FKX: FUCHS Reniso Triton SE 55	●	●	●	●
Sight glass		●		
Two sight glasses			●	●
Compressor safety valve		● ²⁾	●	●
Inert gas charge	●	●	●	●

¹⁾ Only the selected design variant is contained in the scope of supply.

²⁾ Only for model FK 30/275 + 325

Data Overview

Accessory

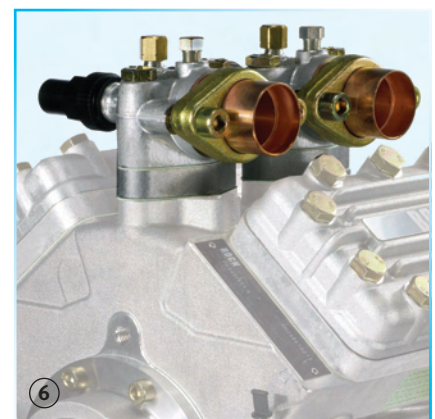
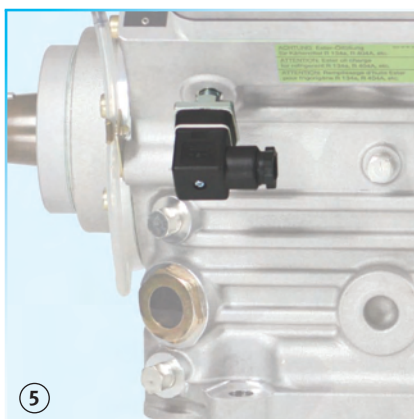
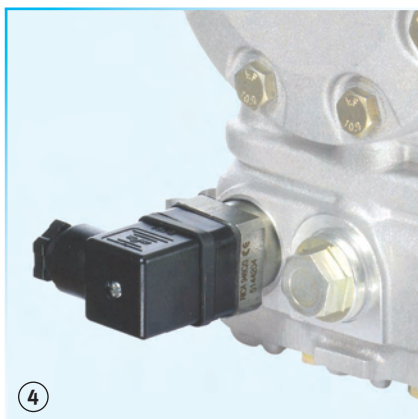
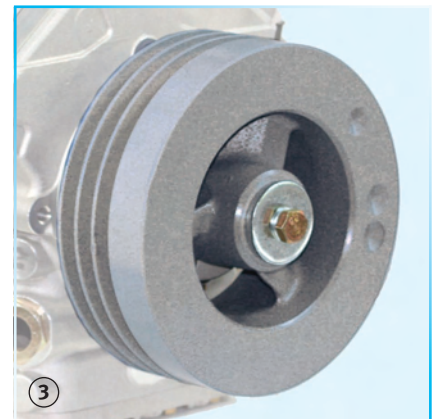
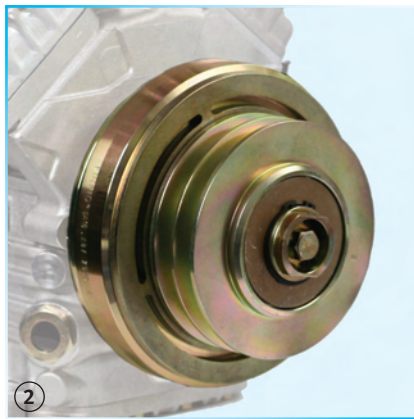
The accessories are the same for the various levels of displacement and the design variants K, N and TK. In the data concerning the type of compressor, these additions are not taken into account.

FK Series	FK20	FK30	FK40	FK50
① 24 V DC, 8 W capacity regulator: 1 capacity regulator = 50 % residual capacity			●	
24 V DC, 8 W capacity regulator: 1-2 capacity regulators = 66 / 33 % residual capacity				●
② Electromagnetic clutch 24 V DC LA 21, Ø 147 mm, 2 x SPA, 48 W	●			
Electromagnetic clutch 24 V DC LA 30.1, Ø 174 mm, 2 x SPA, 51 W		●		
Electromagnetic clutch 24 V DC LA 16.028, Ø 153 mm, 2 x SPB, 60 W			●	●
③ Compressor flywheel (three-spoke, grey cast iron) Ø 165 mm, 2 x SPA	●			
Compressor flywheel (three-spoke, grey cast iron) Ø 210 mm, 2 x SPA		●		
Compressor flywheel (three-spoke, grey cast iron) Ø 210 mm, 3 x SPA			●	●
④ Oil sump heater 24 V DC, 40 W	●			
Oil sump heater 24 V DC, 80 W		●	●	●
⑤ Thermal protection thermostat (bimetal tracer)	● ³⁾	●	●	●
Set replacement adapter set for FK40, for same shut-off valve positioning as FK4/467			●	
⑥ Intermediate flange for changing the position of the shut-off valves.		●	●	●
Oval flange, height 15, 25, 34, 46, 62 or 75 mm				
Sight glass	●			

¹⁾ Other voltages on request

²⁾ other designs on request

³⁾ with intermediate flange



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