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KAY
PRECISION
PERFECTION
PRIDE

MECHANICAL
VACUUM BOOSTERS

ISO 9001:2015

CE

MECHANICAL **VACUUM BOOSTERS**

The mechanical boosters which are positive displacement type Boosters. It is the main pumping equipment in the middle or high vacuum depend upon backup or fore pump. Its working principle is similar to our Twin & Tri Lobe Blowers for move synchronously to achieve the suction and discharge.

The KVB (P) series Kay Vacuum Booster with by-pass valve is the inlet and outlet ports of the KVB(P) booster communicating with each other and a self-weight valve seating on the pipes between them.

The function of self-weight valve is that it can open automatically when the force of the pressure clearance between inlet and outlet port times the sufficient square meter of the valve exceed the valve weight. The data about the valve self-weight refer to the highest clearance pressure ensuring the designed pump's work reliability. In fact, this valve is an auto protection valve for overload. And that is the best merit of the KVB(P) boosters.

According to the latest technology of Vacuum Booster/ System application in pharmaceutical in the chemical, pharmacy and so on, we improved the sealing system of the booster cavity and bearing housing so as to reduce the oil emulsification in the bearing housing or gear box efficiently. It is the outstanding merit of the boosters that it possesses a high suction capacity in the lower suction pressure range, and it can also reach higher ultimate vacuum comparatively. So the KVB Series Vacuum boosters are more suitable to pump amount of steam or solvent in gas state.

They cannot be used separately and should be connected with a Backing Pump. The Vacuum Boosters are not allowed to start under the atmosphere until the inlet pressure of the Backing Pump. The Backing Pump is Liquid Ring Vacuum Pump, Vane Vacuum Pump or the Rotary Vacuum Pump and screw Vacuum Pumps.

Principle of Operation:

APPLICATION:

The Kay Vacuum Boosters are widely used in mechanical vapour recompression (MVR), vacuum moulding, vacuum smelting, vacuum gas pumping, vacuum coating industry, vacuum distillation and vacuum drying of chemical and pharmaceutical industry etc. the dust can't be pumped by Vacuum Boosters.

APPLICATIONS:

1. The lack of reciprocating parts allows a perfect dynamic balancing because the rotors are processed by numerical control machine tool and balanced Fine grade, it has perfect geometry symmetry. There is certain clearance between the two rotors. The Booster body and end cover is processed by special machine tool. It has high precision, so the Booster own feature of stable Efficient operation, low like noise, low vibration, low temperature, low pressure and high ultimate vacuum better life.

2. The KVB series Kay vacuum Booster with bypass valve can start under the atmospheric. Because the overflow valve is able to open automatically when the work pressure exceed the maximum pressure clearance, so that the gas flow release as to protect the Kay Vacuum Booster. But a long period work at overpressure condition will also make the Booster overheating.

3. The robust drive of booster and operating parts balanced fine grade permit that the booster be stably operated continuously under the condition of high different vacuum.
4. They can be started quickly and in short time ultimate vacuum is reached
5. Lubrication is unnecessary as there is no contact between rotors, rotor and body, that avoid oil vapour from polluting vacuum systems.& go that it is Dry mechanical Booster
6. Good reliability. Their inherent overflow valve play auto – protective role.
7. Compact structure, low footprint design. There are two gas outlet ports one are in right and other bottom

MATERIAL SPECIFICATION

Casing: Latest designed, made of Cast Iron FG 260 in IS: 210, including extra deep rib sections for greater rigidity for Kay Vacuum Boosters.

Impellers: Accurately machined for close tolerance operation, dynamically balanced for smooth Dry running and lower bearing loads. Spheroidal Graphite Iron Grade 400/18 in IS: 1865 is used in Standard model.

Helical Gear EN-353, BS:970: Helical Gears have straight teeth, and are mounted on parallel shafts. Made by Alloy Steel, heat treated taper bore. Easy fitting with hydraulic jack ensures longer life of the bearing.

Bearings: The bearings we use particularly versatile and are simple in design, non-separable, suitable for high and even very high speeds robust in operation, requiring little maintenance. Heavy duty Bearings has deep, uninterrupted raceway grooves. These raceway grooves have a close osculation with the balls, enabling the bearings to accommodate radial and axial loads in both directions.

Performance and Operating Range Of Kay Vacuum Boosters

Model	Capacity M3/hr	Operating speed RPM (Approx.)
KVB-3612	10,837	960
	17,361	1500
KVB-31050TR	19,316	960
	24,372	1200
KVB-31320TR	30,199	750
	40,660	1000
KVB-31600TR	44,350	600
	55,840	750
KVB-31560TR	60,653	600
	76,298	750

Type		KVB 200	KVB 280	KVB (P) 500	KVB (P) 1000	KVB (P) 2160	KVB (P) 3000	KVB (P) 4300	KVB (P) 6000	KVB (P) 9000
Suction Capacity (m3/hr) (50/60 Hz)		200/280	280/334	540/600	1080/1200	2160/2500	3000/3900	4320/4800	6000/7300	9000/10000
Max. Pressure Tolerance (mbar)		80	80	60	45	45	45	30	30	30
Speed (RPM) (50/60 Hz)		3000/3600	3000/3600	30000/3600	1500/1800	3000/3600	3000/3600	1500/1800	3000/3600	3000/3600
DN (mm)	Inlet	50	80	100	150	150	200	300	250	300
	Outlet	50	80	100	150	150	200	300	250	300
Weight (Kg.) (50/60 Hz)		50	80	230	520	540	650	1640	1680	1750
Power (KW) (50/60 Hz)		0.75/1.1	1.1/1.5	2.2/3.7	3.7/5.5	7.5/10	11/15	11/15	18.5/25	22/30