

## Fuji Electric Ring Compresso

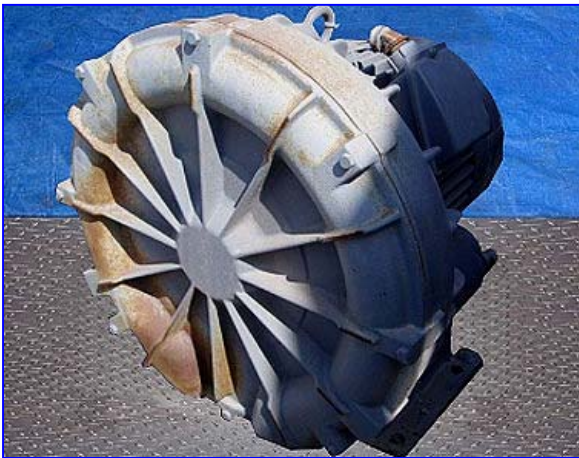
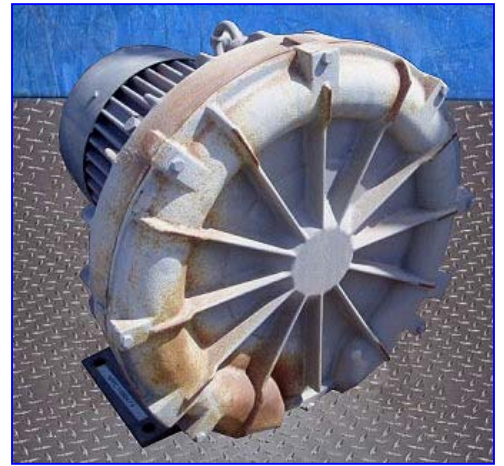
Mfg: Fuji Electric

Model: VFC704A-7W

Stock No. NPPC144.

Serial No. 9195727

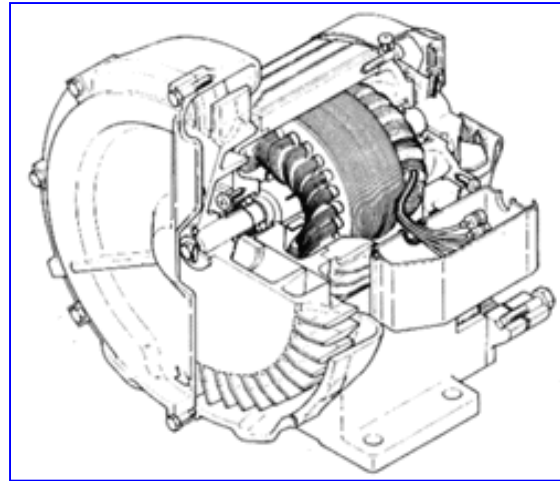
Fuji Electric Ring Compressor. Model VFC704A-7W. S/N 9195727. Ring size: 14-1/2 in.  
Typical applications: pressure and vacuum printing, pneumatic conveying, bank remote tellers, fish hatchery, water treatment plant, marinas, platemaking and chip removal. Motor: 3 phase, 2 poles, 50/60 Hz, 200-230/460 V, output hp: 5.5-6.7/6.7, max amps: 15.6-16/8, max water: 114/114, max cfm: 267/267. Inlet/outlet: (2) 2 in. dia. NPT female.



## Fuji Ring Compressors

### Features:

- Suction Discharge
- Die Cast Impeller
- Dynamically Balanced Impeller
- Double Shielded Shaft Bearing
- Dust Proof Shaft Seal
- Motor Shaft-Mounted Impeller
- Improved Cooling Fan Design
- Built-in Thermal Protector
- Compact Design
- Removable Threaded Flanges



### Principle of Operation:

The Fuji Ring Compressor is a non-positive displacement, high volume, low pressure blower that can operate as either a compressor or a vacuum pump. It is also known by other names such as: regenerative blower, vortex blower and side-channel blower.

The blower consists of an impeller mounted directly on a motor shaft and is rotated at a high speed, about 3600 RPM. On the periphery of the impeller is a large number of radial blades. The impeller is positioned between two endplates with the blades located with a channel on either side.

As the impeller spins and the blades pass the inlet port, a low pressure area is created that draws in air or other gases. The impeller blades impart motion to the air by centrifugal force, throwing it outward and forward, where it follows the contour of the side-channel and is returned to the base, or root, of the impeller. This action is repeated many times, creating a vortex. Each "regeneration" causes the air to gain pressure until it reaches the portion of the housing where the air is stripped from the impeller and discharged from the blower.

The ring compressor is, in effect, a multistage compressor with each regeneration of the air becoming another "stage". The pressure increase at each stage in the cycle is very small, but the large number of stages yields inlet vacuum levels up to 8 in. Hg and discharge pressures of up to 5 PSIG, depending on the size of the blower. Flow levels of up to 570 SCFM can be achieved, and discharge air is free of annoying pulsating.

The basic construction of a ring compressor means that the only moving part is the impeller. Nothing touches except the bearings. The method of compression means that there is no requirement for lubrication in the compression chamber; the discharge air is oil-less. No oil aerosols are present in the discharge air, nor carbon dust generated by sliding vanes. The blowers may be mounted vertically (with impeller housing down) or horizontally.

### Construction

Fuji's complete line of ring compressors is designed to meet the most critical application requirements. Each features an impeller mounting base and housing manufactured of aluminum alloy for maximum strength, reduced weight and increased corrosion resistance. The compressor and motor are constructed as a unit for mechanical simplicity and maximum structural integrity. The elimination of clutches, gears, belts, and sliding vanes reduces periodic maintenance while increasing reliability.

TEFC (totally enclosed, fan-cooled) motors are standard on all models, except VFC063P and VFC100 models, which are TENV (totally enclosed, non-ventilated). In addition, all models have NEMA class B, or class F (model VFC704), insulation, and are Underwriters Recognized (Yellow Card File), CSA certified (File LR48762), and meets CE. All single phase units have built-in automatic reset thermal protectors, except models VFC400P and VFC500P. All three phase units have pilot duty thermal protectors requiring only the addition of an external contactor for overload protection, however, magnetic motor starters are recommended.

All ring compressor impellers are dynamically balanced to virtually eliminate vibration while increasing overall long-term reliability. Most models have a shaft oil-seal between the impeller and bearing, as well as a double shielded bearing to reduce the possibility of foreign material influx and preclude air contamination.