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(54) Title: INTEGRAL SCROLL AND GEARBOX FOR A COMPRESSOR WITH SPEED CHANGE OPTION

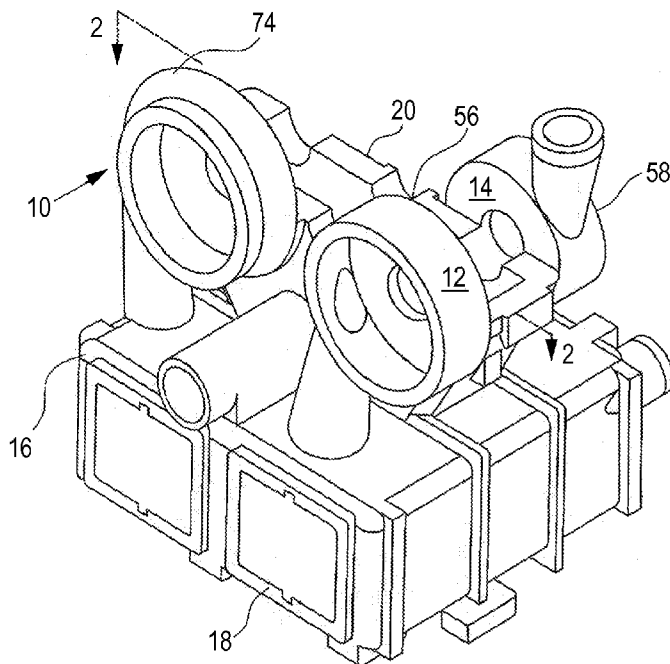


FIG. 1
PRIOR ART

(57) Abstract: The volute is cast integrally with the gearbox base to allow closer radial tolerances to be used to improve efficiency. In the preferred embodiment, compressors for multi-stage compression are assembled with intercoolers and the integral volute is cast together with the impeller housing and the lower gearbox housing and the associated intercooler. Efficiency increases of 2% or more are achievable. In multistage applications, efficiency gains in the early stages are compounded in each subsequent stage. Speed changes that change center distance between bull gear and pinion are accommodated by an offset opening in the inlet and diffuser that can line up with the impeller shaft as well as an offset opening in the fluid seal despite a pinion gear change, by reorientation and remounting of those parts.

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