



Marley has designed and manufactured cooling tower fan cylinders since the 1930s, and pioneered the production of FRP (fiberglass) fan cylinders in 1958 which became the accepted standard within two years' time. With considerable modeling and full scale testing, this experience led to the development of several new fan cylinder designs for a variety of tower types and fan sizes. One such development resulted in the Reflex velocity recovery cylinder in the 1980s, and is the standard design still in use today for 10'-0" diameter and larger fans.

21st century manufacturing technology has enabled further advancement and the introduction of the new Marley Reflex RTM industrial fan cylinder, offering a more dimensionally accurate, high quality surface finish, better fit and robust structural integrity. A light RTM (resin transfer molding) closed-molding process lends itself to increased durability for the final product, and ensures laminate thickness and weight consistency. Because the cavities are infused using rigid forms in the ribs, there is no porosity or potential sites for delamination or structural fracture to begin. The cylinder load capacity is greatly enhanced.

The "green" benefit of the closed-molding process is the virtual elimination of VOC emissions because the resin is injected and cured in a sealed, closed mold. And because the lay-up process is now dry, a more precise laminate can be achieved, with no hand-working of resin-soaked materials, no cleaning requirements for application equipment, no hand tools using hazardous chemicals and no chemical disposal concerns.

Reflex fan cylinder



Reflex RTM fan cylinder with access hatch opening. The access hatch is designed for ease of use and sufficient size to allow removal of mechanical components



The RTM process has smooth texture on the interior as well as a smooth gel coat surface on the exterior

The fan cylinder does far more than protect operating personnel from a rotating fan. It is a vital link in the chain of critical components that contribute to the overall efficiency of the cooling tower. When correctly designed, manufactured and applied, it assures that the fan will be capable of moving the maximum amount of air through the tower at the minimum required horsepower. Poorly designed or utilized, it contributes virtually nothing to the fan's capability and, in some cases, can be more of a hindrance than a help.

Velocity recovery, particularly in large fan cylinders, is vital to overall fan efficiency. It is accomplished by a gradual increase in the diameter of the fan cylinder above the fan. This reduces the throughput velocity of the air—relieving the fan of the

unproductive work required to maintain an unnecessarily high level of kinetic energy in the exiting air stream.

Specify a maximum flare angle of 12° for recovery cylinders. Specify a maximum assumed velocity recovery of 75% of the difference in average velocity pressure, unless scale model data for the exact fan and cylinder system can be submitted. Specify a removable access hatch of sufficient size to allow removal of all mechanical equipment components.

Marley Reflex RTM fan cylinders have all the dimensional and airflow characteristics of legacy Reflex cylinders, which allow segments to be intermingled with legacy parts on partial cylinder replacements.

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