

"UNPARALLELED PERFORMANCE AND SAFETY UNDER PRESSURE!" ®



ExpanTek®
Model TH
Ball Expansion System

- Hydro-mechanical ball expansion of tubes
- Pressures up to 10,000 psi (689 bar)
- Cycle times as fast as 3 seconds
- Single or double operator work stations
- Manufactured to customer specifications

DESCRIPTION

The ExpanTek® Model TH Ball Expansion System is designed specifically for hydro-mechanical straight line tube expansion applications. The components and circuitry in this system will provide reliable, repeatable expansion of tubes. The triplex hydro ball process uses water pressure to force a ball through the inside of the tube, thus expanding the tube to a desired diameter.

The Model TH Ball Expansion System is powered by a three-phase electric motor, and uses a belt-driven triplex pump to provide water pressures up to 10,000 psi (689 bar). The operator interface includes all necessary controls and gauges to adjust and monitor system function. The system is mounted on a skid platform, so it can be moved with a forklift to different manufacturing cells.

OPERATION

The ExpanTek® Model TH Ball Expansion System when used with the Airmo Model 22 Series Ball Expansion Tool is easy to operate. Simply verify there is a ball in the tube prior to attaching the tool, then push the tool straight onto the tube. Next, initiate the pressure cycle by actuating the electrically operated foot switch. The system automatically forces the ball down the entire length of the tube, mechanically expanding it. Typical expansion cycles are 3 to 5 seconds, depending on tube size and length. Ball expansion tools can be quickly changed over using quick disconnect couplings.

APPLICATION

The ExpanTek® Model TH Ball Expansion System, when used with the Model 22 Series Ball Expansion Tool, provides a safe, efficient means for straight line tube expansion for boiler tube liners, condenser coils, evaporator coils, and fin/tube bonding.

CONSTRUCTION

Frame:	Aluminum frame with steel panels mounted on a steel skid platform 38.5 in. x 51.8 in. x 57.1 in. (977.9 mm 1315.7 mm 1450.3 mm)
Work Stations:	Single or double operator work stations
Triplex Pump:	Corrosion-resistant materials
Valves and Fittings:	Stainless steel or brass
Fluid Piping:	Heavy wall stainless steel and rubber hoses
Gauges/Transducers:	Stainless steel construction

OPERATING CONDITIONS

Input Fluid:	Water or other fluids
Electrical:	Tailored to type of electrical service used
Temperature:	32° F to 120° F (0° C to 49° C)

PERFORMANCE INFORMATION

Maximum Water Pressure:	Up to 10,000 psi (689 bar)
Maximum Water Flow:	Up to 4 gpm (15.1 lpm)
Motor Power Output:	Up to 25 HP
Cycle Time:	3 seconds for small volume tubes

MAXIMUM PRESSURE
10,000 psi
689 bar

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BASIC SYSTEM

The Model TH Ball Expansion System basic system is configured as follows:

- **Triplex piston pump**, with pressure outputs to 10,000 psi (689 bar)
- **Electric motor**, with power capability to 25 HP
- **Control system**, operated with low voltage foot switch
- **Precision regulator**, supplies water pump giving operator greater control of pressure
- **Safety valve**, prevents water pressure from exceeding maximum
- **Analog gauges**, high accuracy and durability for monitoring output water pressure
- **Strainer and water filter**, reduce contaminants for better system protection
- **Hydrostatic control valve**, provides rapid switching for 2-way or 3-way valve functions
- **Relief valve**, controls or limits pressure build up in the system
- **Aluminum frame with steel panels**, mounted on a steel skid platform for easy portability
- **High-pressure hose assembly**, 10 ft. (3 m) long with quick disconnect couplings
- **Quick disconnects**, self-locking design increases operator safety and quick changeover

CUSTOMIZED SYSTEMS

Airmo can engineer and build systems to customer specifications based on:

- **Exterior dimensions**
- **Pressure and flow requirements**
- **Expansion requirements**
- **Single or double operator work stations**



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