

## **QTECH DECORING MACHINES**

Quenneville Technology is pleased to present the QTECH-A Frame decorating machine , a core knock-out equipment for virtually any casting. At Quenneville, we fabricate this equipment and components of high quality since 1903. We have equipment running in many foundries throughout North America, Mexico, Europe and the Far East. Quenneville's experience in vibration tooling allow us to manufacture equipment for virtually any casting or sand process type. From simple, A-Frame decorating units to complete fully automatic Qtech-1, we are here here to serve.

### **BENEFITS**

- High productivity with simplicity
- Minimal moving & wear parts

### **MACHINE DESCRIPTION**

The mechanical assembly consists of:

- A steel structure , type "A – Frame"
- A high impact pneumatic hammer
- A foot valve for the starting of the pneumatic hammer
- Anvils included with the hammer

### **THE QTECH PROCESS**

- The operator places the casting between the anvils and keep it there
- Once the foot valve is in operation, the anvils will extend to clamp the part on the gate or riser. Once the part secured, the operator opens the hammer valve to begin the hammering . The hammering may vary from 20 seconds to 90 seconds until the part is fully decored.

### **TECHNICAL DETAILS ON PNEUMATIC HAMMERS**

- The pneumatic hammer used on the A-Frame machine will perform an impact more important than any other hammer sold in the market
- Since the parts are maintained securely at its place, thus preventing the movement of all castings, the maintenance and repairs are kept to its minimum.
- This machine will operate whatever the positioning of the casting.

	<b>SPECIFICACIONES OF PNEUMATIC HAMMERS</b>			
<b>MODELS</b>	<b>DTE-331EP</b>	<b>DTE-634EP</b>	<b>DTE-2331EP</b>	<b>DTE-2638EP</b>
<b>MAXIMUM STROKE</b>	70 MM	103 MM	70 MM	103 MM
<b>RECOMMENDED WORKING STROKE</b>	35 MM	55 MM	35 MM	55 MM
<b>STROKES PER MINUTE</b>	24,0	20,0	24,0	20,0
<b>AIR CONSUMPTION (cfm)</b>	12679	12679	12679	12679
<b>OVERALL LENGHT CYLINDER IN</b>	505 MM	595 MM	510 MM	605 MM
<b>OVERALL LENGHT CYLINDER OUT</b>	575 MM	698 MM	580 MM	708 MM
<b>WEIGHT WITHOUT ANVIL (KGS)</b>	14,5 KGS	19,5 KGS	17 KGS	22 KGS
<b>MAXIMUM AIR PRESSURE</b>	87 PSI	87 PSI	87 PSI	87 PSI
<b>HOSE SIZE (MM)</b>	13 MM	13 MM	13 MM	13 MM

## **THE QTECH PROCESS**

The Qtech decoring machine is based upon an original process, which occurs in two phases:

### **A: SEPARATION OF THE CORE**

The casting is placed into a fixture specific to the casting being run, then held by a pneumatic clamping system. It is then hammered by a pneumatic hammer. The high frequency shocks separate the core from the casting and break it into small pieces.

### **B: DISINTEGRATION OF THE CORE**

After the separation of the core from the casting, the part is shaken out by a combination of two electrical vibrators. This vibration reduces the core into sand, which falls down to the lower part of the machine. As the vibrating frame is elastically isolated from the machine base, the vibrating energy is transmitted to the casting and the sand, and not the machine itself.

Suspension on four elastic studs allows the machine to oscillate around a virtual vertical axis situated at the crossing of the motor axis and the symmetry axis of the machine.

## **QTECH-1 SOUNDPROOF DECORING MACHINE**



The cabinet is built around a skeleton of steel tubing on which are welded the insulating panels. Two large service doors allow access for maintenance tasks. A loading door, pneumatically actuated, allows the loading and the unloading of the parts. An operator panel with display screen gives access to the machine functions and to the parameter adjustment functions. A dual start trigger security command starts the cycle in automatic mode or the selected functions in manual mode. The insulating panels are built with the following : Outer steel sheet of 1.5 mm thick, rockwool of 100 mm thick and inner perforated steel sheet reducing noise reflection inside the cabinet.

	<b>SPECIFICATIONS OF QTECH-1</b>
<b>AIR SUPPLY</b>	90 PSI
<b>AIR CONSUMPTION</b>	6.35 LB. CU. FT. / MINUTE DURING HAMMERING
<b>ELECTRICAL SUPPLY</b>	480 v 3 Phase , 60 HZ
<b>INSTALLED POWER</b>	8 kw
<b>PLC</b>	Siemens OP 17 with panel view
<b>DIMENSIONS</b>	1890 mm x 1800 mm x 1925 mm
<b>WEIGHT</b>	2000 kgs
<b>VIBRATIONS SPECS</b>	Max. part weight : 132 lbs std 176 lbs on request Typical cycle- 60 seconds Hammering : 15 seconds

Vibrating : 45 seconds  
Amplitude - 0.6"  
Maximum vibrating frequency - 28 HZ  
Acceleration - 25 G's

### MODES OF OPERATION

#### MANUAL

In manual mode, the operator can activate the following functions :

- a) Clamping
- b) Loading door operating
- c) Hammering
- d) Vibration

#### AUTOMATIC

The automatic mode is the normal running mode. To begin, insert a part into the clamping fixture, press the bimanual command and keep pressing until the loading door is completely closed. At this point, the automatic cycle starts.

The machine then carries out the following operations:

- a) Part clamping
- b) Loading door closing
- c) Hammering
- d) Shaking
- e) Unclamping
- f) Loading door opening

At this point, the decorated part can be unloaded.

### ADJUSTABLE PARAMETERS

**PRESSURES:** The hammering and clamping pressures can be adjusted separately, depending on the part type, from 58 to 87 PSI.

**VIBRATION FREQUENCY :** The vibrating frequency is adjustable in a range from 15 to 28 HZ

**TIME ADJUSTMENTS:** Hammering and vibrating times can be Adjusted.

**PART TYPE:** The part type facility allows to store the specific Working parameters of a part or a group of parts.

**CONTROL OF PARAMETERS :** By pressing a single key, the current Working parameters are displayed.