



**The Butterworth Type LT & LTFT Tank Cleaning Machines provide 360° impact indexed coverage for the cleaning of the inside of tanks and process vessels**

### In Application

The highly versatile Butterworth LT machine can be used in all process, storage and transportation tanks. Lightweight and portable, the LT machine eliminates confined space entry cleaning in every application including (but not limited to) cooking kettles, large process mixing vessels, oil storage tanks, rail cars, tanker trucks and fermenters. The LT machine offers 360 impact indexed coverage cleaning for tank sizes ranging from 200 gallons to 150,000 gallons. Contact Butterworth for specific machine sizing and requirements.

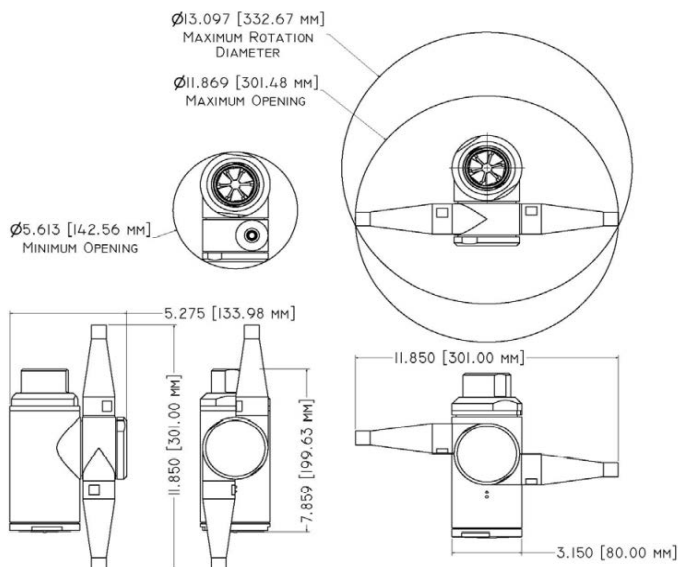
### Operational

The Butterworth LT & LTFT Tank Cleaning Machines create a pattern matrix similar to a ball of twine (see cleaning pattern below). The machines are capable of cleaning horizontal, rectangular and irregular shaped vessels. A complete pattern is established upon 65 axial revolutions of the body. During the process of this pattern build out, 4 cycles are established with each cycle increasing the density of the pattern matrix. The machines can be mounted vertically, horizontally or upside down, to provide comprehensive cleaning coverage.

### User Benefits

- Elimination of Confined Space Entry
- High Jet-Stream Impact
- Improved Capital Equipment Utilization
- Reduced Cleaning Times
- Reduced Discharge Generation
- Reduced Energy Costs
- Reduced Water Use

### General Dimensions



### General Specifications

#### Materials Of Construction (As Standard):

- 316 SS/CD4-MCU Duplex SS
- See manual for parts detail

#### Weight:

- 15 lbs. (6.8 kg)

#### Lubrication:

- Flow-Through (Cleaning Fluid Lubricated)
- Sealed Gearbox (Food Grade Grease)

#### Normal Operational Range:

- 40 psig (2.8 Bar) – 300 psig (20.7 Bar)

#### Maximum Pressure:

- 300 psig (20.7 Bar)

#### Jet-Length Radius:

- 0 – 78' (23.7 M)

#### Temperature Range:

- Static : 300°F (149°C)
- Operational : 300°F (149°C)

#### Inlet Connection Type:

- 1 ½" NPT (F)
- 1 ½" BSP (F)
- Weld
- Others on request

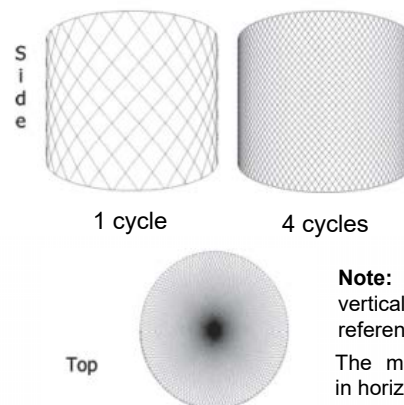
#### Minimum Tank Opening Requirement

- 5.613" (142.56 mm)

#### Surface Finish:

- < 25 Ra μ (Micro Inch) – External

### Cleaning Pattern Simulation



**Note:** The simulation for a vertical tank is shown for reference purposes only.

The machine will also work in horizontal and irregular shaped vessels.

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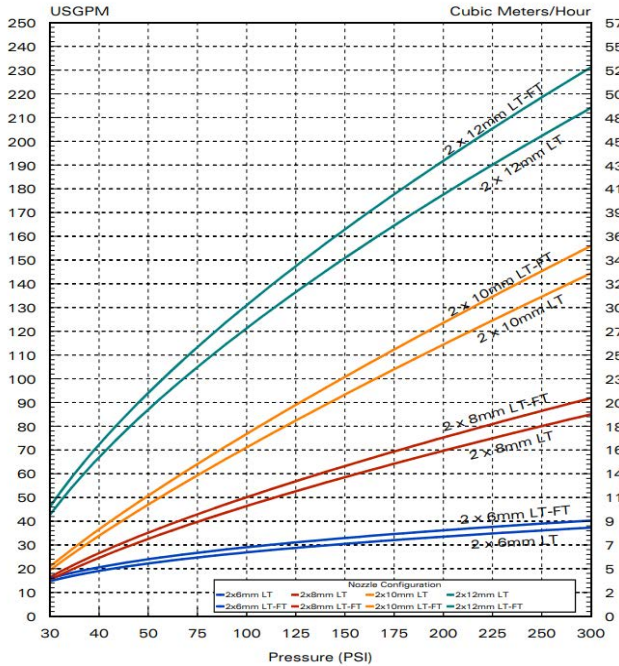


**TYPE LT - Model Reference Table**

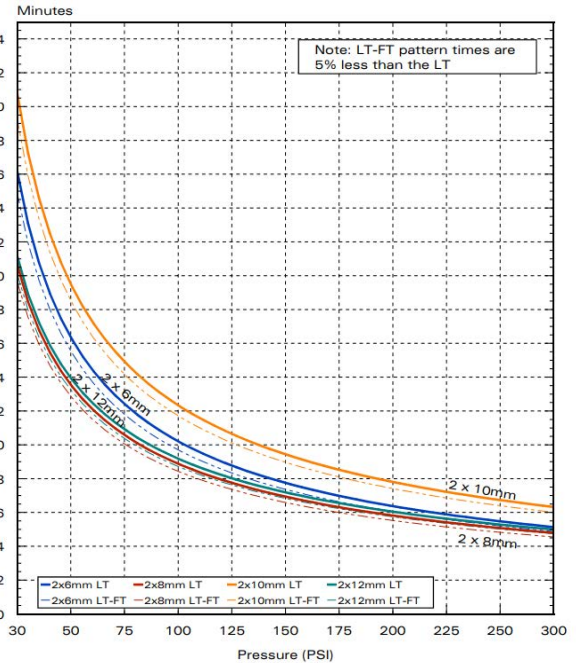
Model #	Nozzles	Inlet	Lubrication
LT6ZM3N0FT	2 x 6mm	1.50" NPT (F)	Cleaning Fluid
LT8Z31N0-C	2 x 8mm		Food Grade Grease
LT8Z31N0FT	2 x 8mm		Cleaning Fluid
LT10Z21N0-C	2 x 10mm		Food Grade Grease
LT10Z21N0FT	2 x 10mm		Cleaning Fluid
LT12Z21N0-C	2 x 12mm		Food Grade Grease
LT12Z21N0FT	2 x 12mm		Cleaning Fluid

Custom Configurations on Request

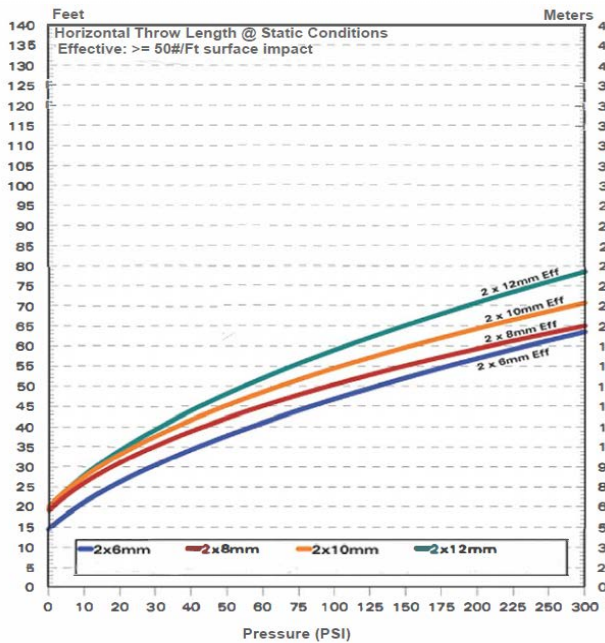
**Flow/Pressure**



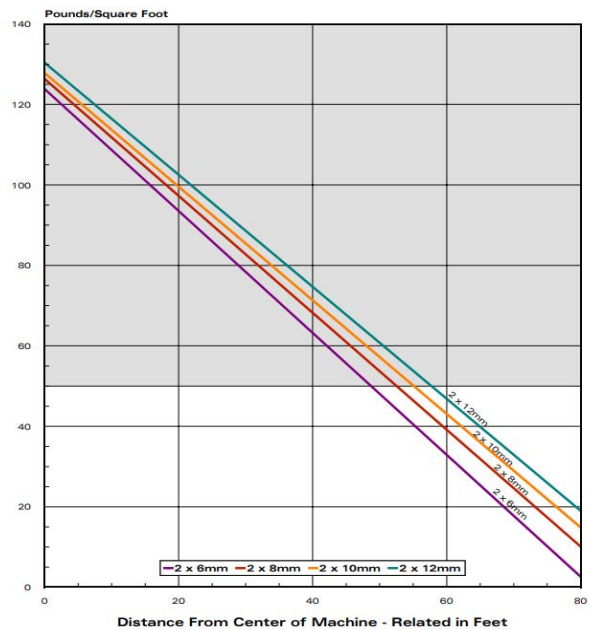
**Pattern Time**



**Jet-Length (Radius)**



**Impact Pressure @ 100 PSIG**



**Important Notice:**

The curves presented here are summary in nature. For a complete set of curves, please contact Butterworth.

Contact Butterworth for installation and engineering assistance. Centrifugal pumps are suggested for proper operation.

**Butterworth, Inc.**