



# **MYERS MIXERS**

GENERAL  
PRESENTATION

# MYERS MIXERS: MIXING AROUND THE WORLD

- 70+ years of experience in the design and manufacture of mixing and dispersing equipment.
- A leader in analytical strategies designed to enhance the production process.
- Sound manufacturing techniques have survived the test of time; innovation to propel towards the future.

CUSTOMERS  
AROUND THE  
WORLD TRUST  
**MYERS** FOR  
THEIR MIXING  
SOLUTIONS

China  
Hong Kong  
Taiwan  
Korea  
Singapore  
Thailand  
Indonesia  
Malaysia  
Australia  
New Zealand  
Philippines  
Vietnam  
India  
Pakistan  
Japan

# MYERS: YOUR SOLUTIONS PROVIDER

Enhance the success of your production by utilizing Myers evaluation process:

- Can you decrease power consumption?
- Can you increase product output?
- Can you improve product quality?

Call on Myers to verify the efficiency and effectiveness of your existing process.

# MYERS: THE RIGHT CHOICE

A variety of blade configurations are available for each Myers mixing unit.

Mixing with the right choice of equipment:

- Single shaft
- Dual shaft
- Tri-shaft
- Quad shaft
- Special mixing tools

Complete the production cycle:

- Ram press for high viscosity material, including lift-to-discharge
- Milling for the final mixing stage, to provide superior dispersion

# MYERS IMPELLERS

## Open Helical Auger

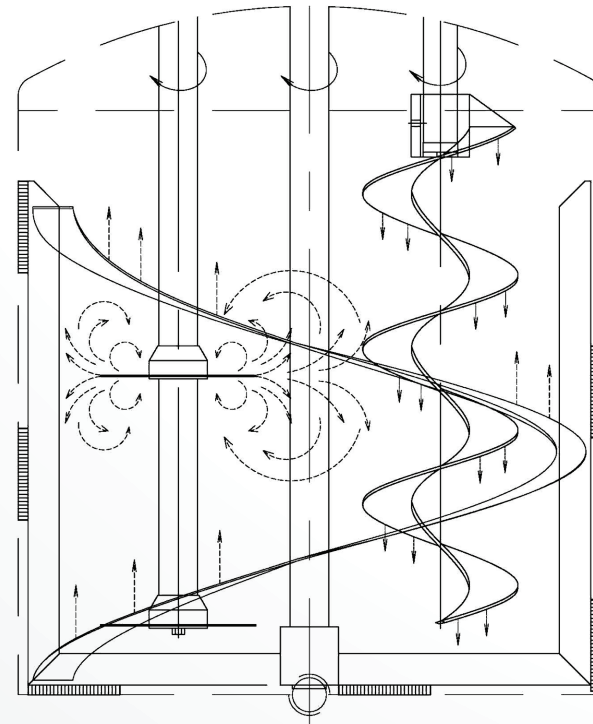
- Push product down for greater contact with disperser blade
- Apply vacuum and pull product up to eliminate entrapped gas (air bubbles)
- Open-center auger design prevents product build-up at shaft
  - Made of thicker material to maintain strength without central shaft
- Closed-center auger design provides screw-like kneading action



# MYERS IMPELLERS

## Sweep Blades

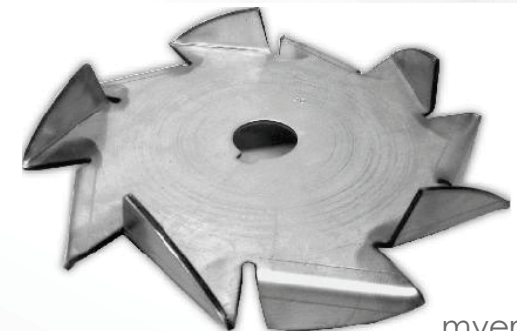
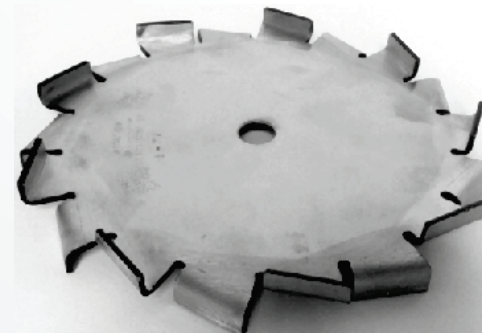
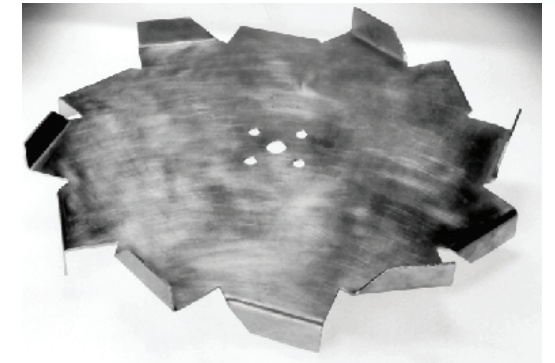
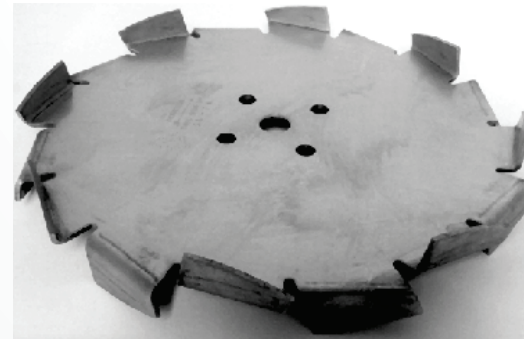
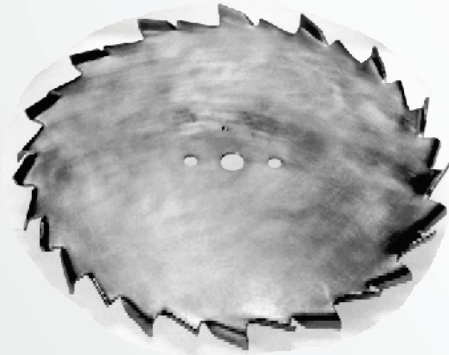
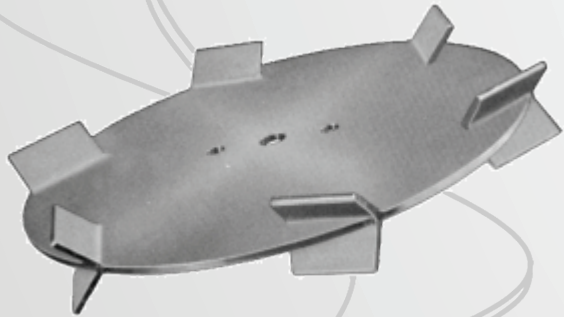
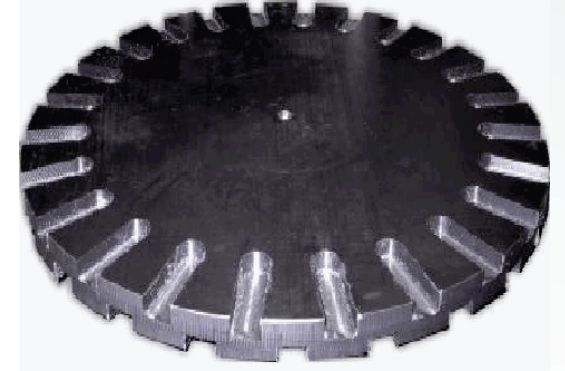
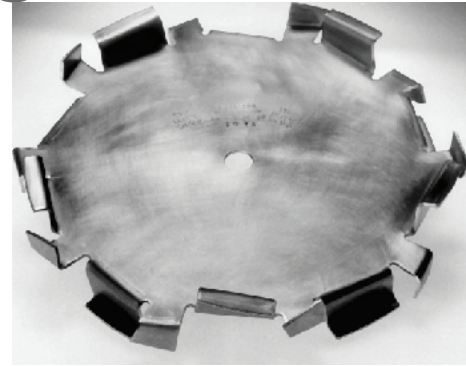
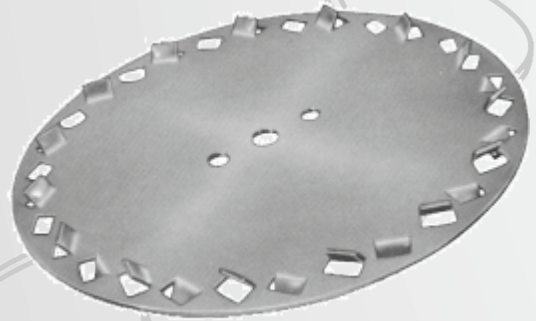
- A variety of styles available
  - 2-4 arms
  - Scrappers on sides and/or bottom
  - Helical ribbon sweep for vertical batch movement and circulation



# MYERS IMPELLERS

## Mixing and Dispersing Blades

- Standard disc
- Radial pumper
- Axial pumper
- Types 1-8





# SIZING PARAMETERS

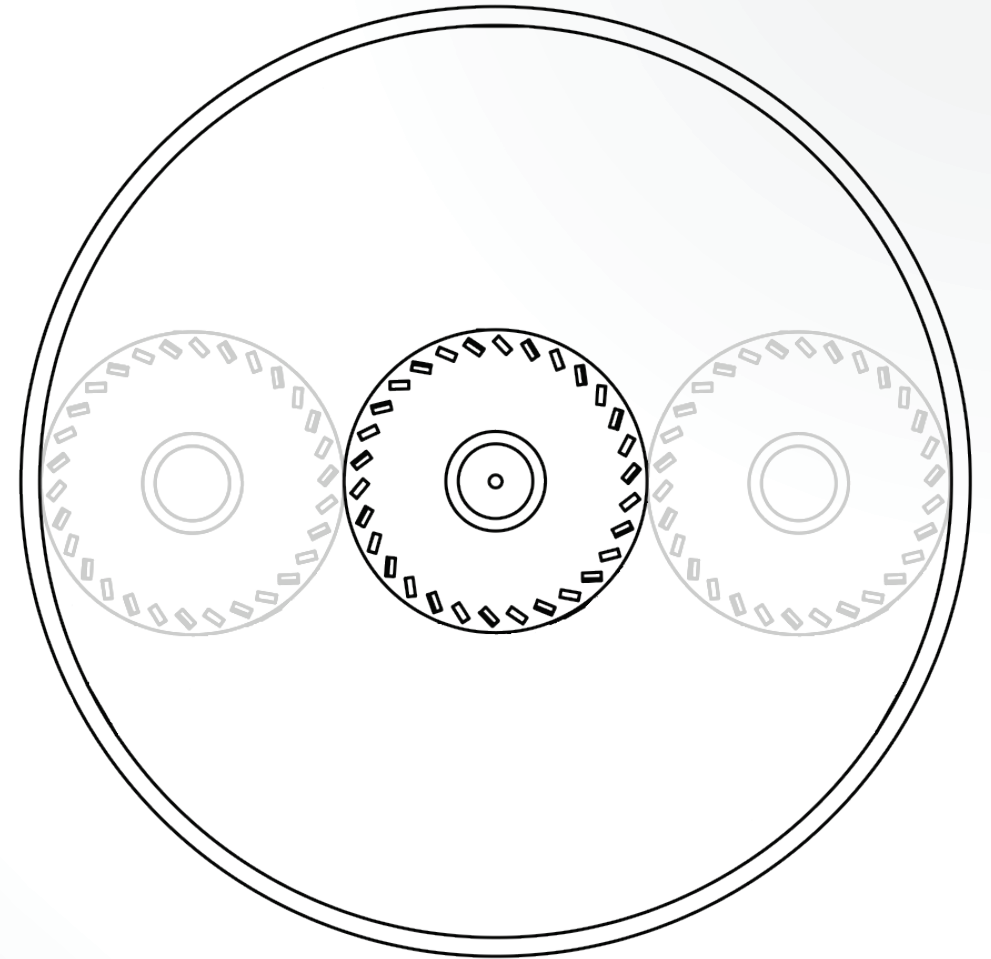
## Single Shaft

- Optimum blade peripheral speed is 5,200 FPM
- 1 HP for every 10 gallons of product
- Torque =  $(\text{HP} \times 5,252) / \text{RPM}$
- Blade distance from tank bottom =  $\frac{1}{2}$  blade diameter
- Minimum blade depth =  $1 \frac{1}{2}$  blade diameter
- Blade diameter =  $\frac{1}{3}$  of tank diameter

775 Series: 5-25 HP, or <15,000 cP

800 Series: 30-300 HP, or <30,000 cP

Inverter series: inverter drives available for infinite speed control.



Over-head view of mixing tank

# MYERS SINGLE SHAFT 775 and 800 Series

- From 2-400 HP
  - Mechanical, variable speed drives
  - Frequency inverter drives
- 360-degree rotation available
- Delivers full HP at the shaft
- From standard equipment to complex vacuum and jacketed dispersion systems

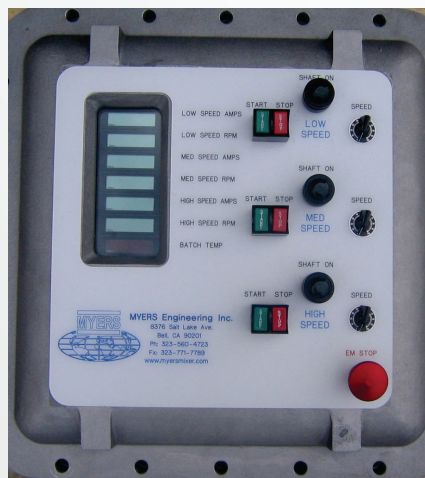


# MYERS PLC APPLICATIONS

Programmable logic controls (PLC) drive single and multi-shaft mixing units.

Design and function optimize your production process:

- Log and track batch production and machine operating parameters
- Control optional heating/cooling devices
- Control stop, start, and speed
- Monitor hours of operation
- Manage temperature
- Control vacuum level
- Decrease errors
- Increase profitability



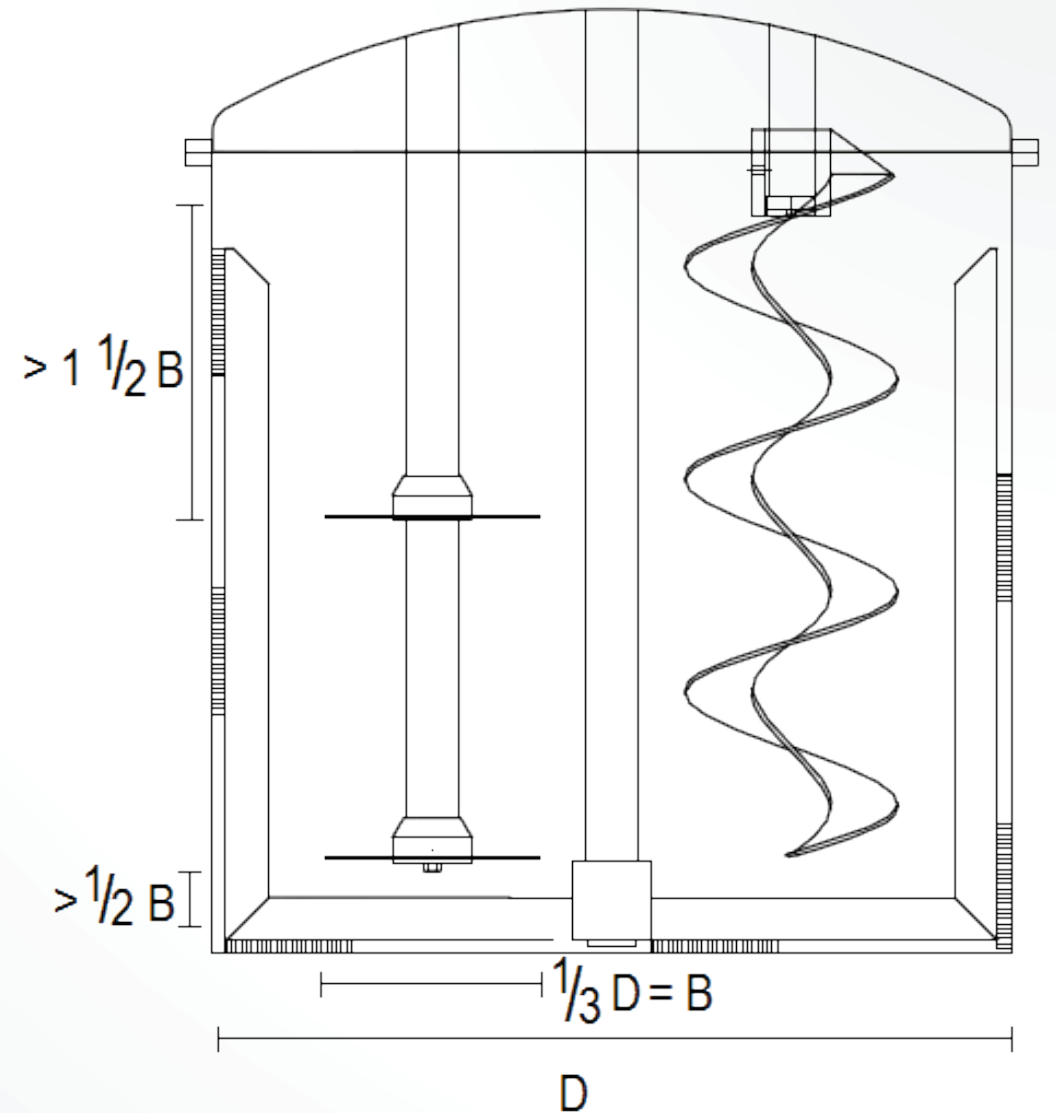
# SIZING PARAMETERS

## Multi Shaft

- Optimum blade peripheral speed is:
  - High speed shaft – 4,000 – 5,000 FPM
  - Intermediate speed shaft – 750 FPM
  - Low speed shaft – 500 FPM
- Blade diameters:
  - 1/4 to 1/3 tank diameter for high speed
  - Low speed blade generally same diameter as high speed

550 Series dual/tri-shaft: up to 5,000,000 cP

Inverter series: inverter drives available for infinite speed control.



# MYERS DUAL SHAFT

## 850 Series: 4 Overlapping Blades

- Fast, extra-fine dispersion
  - May eliminate sand milling
- Faster pigment loading
- Less heat build-up
- Better dispersion
- Improved particle size
- Reduced air entrainment

### **CASE STUDY:**

Customer reports a 7 hour reduction in process time, with improved particle size and distribution, when processing a 750-gallon batch of TiO<sub>2</sub> slurry.



# MYERS DUAL SHAFT M850: Basket Mill

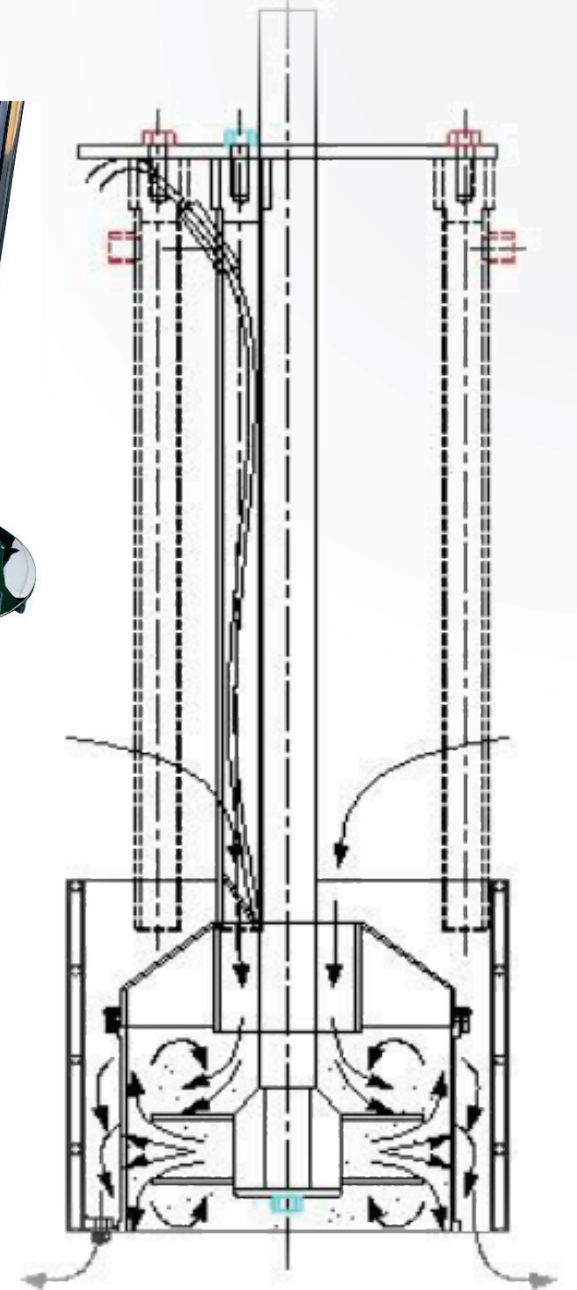
- Submersible media mill
- Dual shaft design
- Independent speed control
- Wider product viscosity range
- Improved particle size distribution



# MYERS DUAL SHAFT

## M850: Basket Mill

- Primary impeller agitates the bead field
- Secondary impeller is the high-speed batch disperser
- Design eliminates hydraulic packing



# MYERS DUAL SHAFT 550 Series

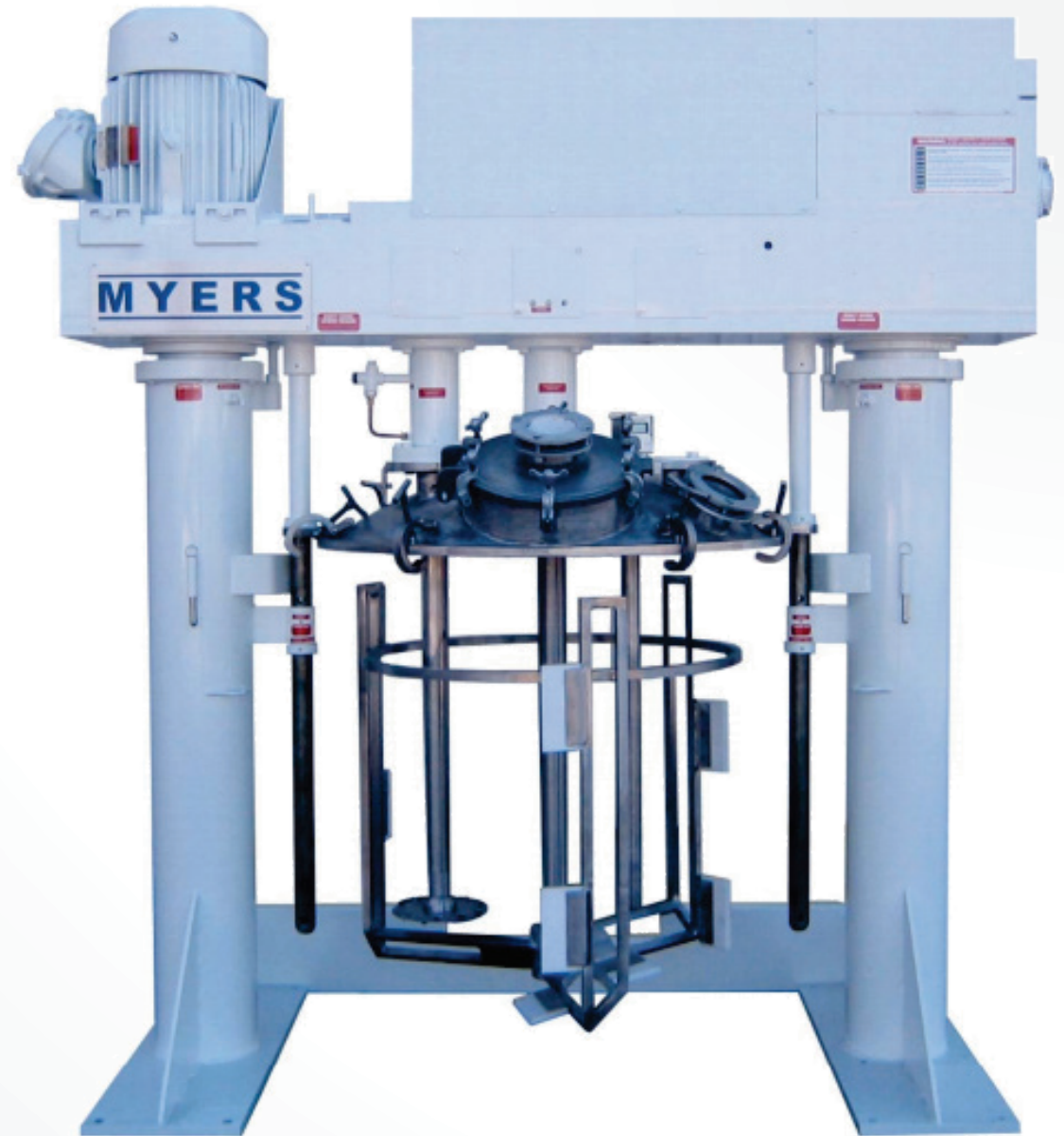
- 2 and 3 HP laboratory units
- 5-100+ HP production units
- Handles up to 300,000 cP
- Machine styles include:
  - Tank mounted
  - Floor mounted
  - Lift-to-discharge





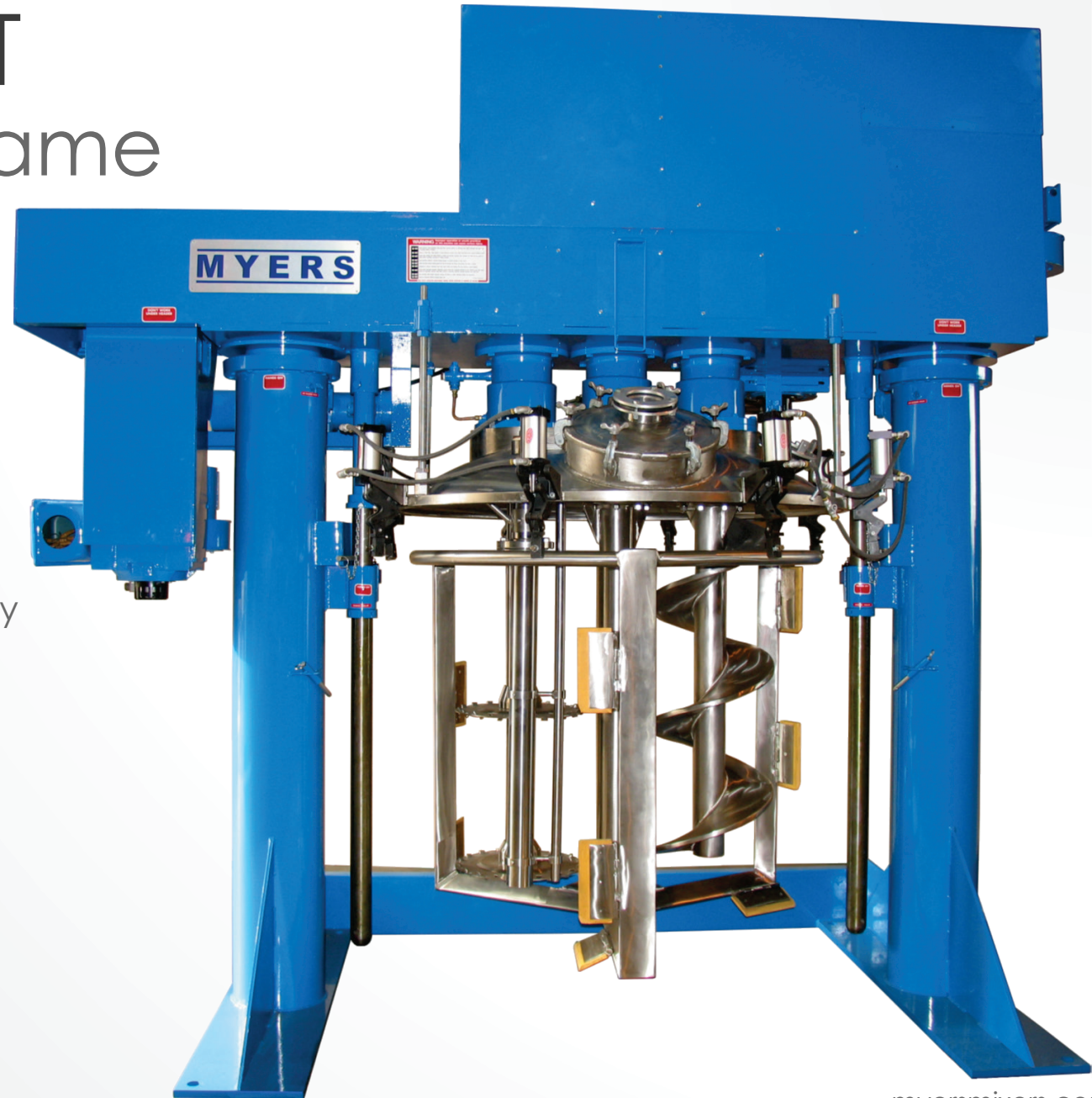
# MYERS DUAL SHAFT 550 Series: H-Frame

- Low profile anchor sweep blade
- High-speed disperser blade
- Handles high viscosity products
- Benefits include:
  - Increases mixing efficiency and product quality
  - H-frame design locks the mixing vessel into position



# MYERS TRI-SHAFT 550/500 Series: H-Frame

- Powerful combination of mixing tools including:
  - Box-angle sweep blade with stabilizer ring
  - Two high-speed disperser blades
  - Intermediate-speed auger screw for vertical movement
    - Assists in incorporation of light powders into highly viscous matrix
- Benefits include:
  - Reduced mixing time
  - Improved product flow characteristics
  - Improved product homogeneity
  - Addresses high viscosity products and light powder introduction



# MYERS TRI-SHAFT

## 550/500 Series: Single Hoist

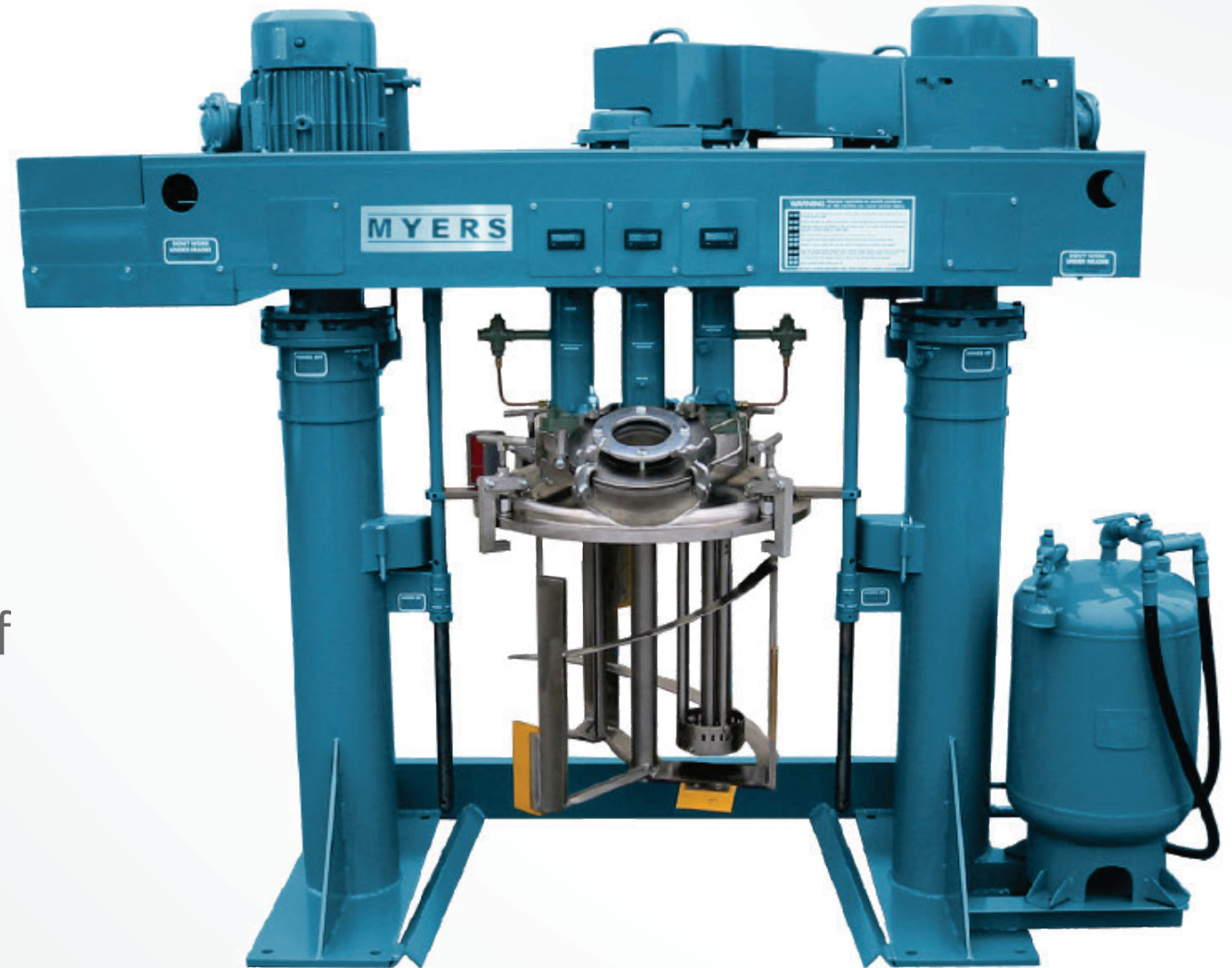
- Powerful combination of mixing tools includes:
  - Sweep blade with wipers
  - Disperser blade
  - Helical auger
- Benefits:
  - Improved flow of medium viscosity products
  - Reduces mixing time



# MYERS TRI-SHAFT

## R550/800A Series: H-Frame

- Unique helical sweep blade
- Intermediate speed gate blade
- Rotor-stator homogenizer
- Used in the process of a silicone compound with a viscosity of 1,000,000 cP



# MYERS QUAD SHAFT

## 550/800/800EH Series

- Three high-speed disperser blades
  - Equipped with a pumping blade mid-shaft to aid in product circulation
- Low speed sweep blade
- Handles products which are:
  - Extremely viscous
  - Difficult to mix due to density
  - Difficult to mix due to flow characteristics
- Drastically decrease mix time



# MYERS DISCHARGE PRESS

## Ram Press

- A series of hydraulic discharge rams is available for delivering high viscosity products directly into containers or filling machines
- Floor level
- Platform
- Lift-to-discharge
- 55 gal drum
- 5 gal pail



# MYERS VACUUM BELL

- Efficiently mix and/or deaerate settled products while in their storage containers
  - Save time and money by eliminating additional clean-up steps
- Custom sizes available
  - 5 gallon pail
  - 55 gallon drum
  - Up to 250 gallon tanks





# MYERS MIXERS

In the mix since 1946

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