

# *SHARPE* **MIXERS**



Portables  
and F-Series Mixers

## Introduction

Founded in 1953, Sharpe Mixers manufactures a full range of mixing equipment up to 300 horsepower. The Portable and F-Series mixers described in this catalog represent the smallest mixers we build, but in many ways the most significant. Because these mixers are our highest volume line, we have taken great steps to assure that the equipment is of highest quality and present the best value as compared to competitive models.

This mixer line has been refined and improved over the years to assure that every component has significant advantages over other mixers on the market. From the nearly indestructible white powder-coated finish to the stainless-steel mounting clamp, from the vapor-tight coupling housing to the quality-10 gearing, you can be confident that your Sharpe Mixer will look and operate like new after years of duty.

If you ever do need service, the non-proprietary motors and other parts are immediately available from Sharpe Mixers or your preferred local supplier.

From start to finish, it is our goal to provide the highest-quality mixers, prompt and dependable service and the best dollar value on the market today... and tomorrow.

Jay G. Dinnison

President, Sharpe Mixers

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## All Stainless Steel USDA Approved

Sharpe's All-Stainless-Steel mixer line represents the ultimate in sanitary mixers with the greatest resistance to corrosion and contamination. With no plating or burnishing, the all-stainless construction goes above and beyond the specification for "paint free" equipment. Fully gasketed housings and a vapor seal where the shaft enters the mixer ensure that no contamination can be caused by the mixer drive itself. Strong SS316L investment castings make up the mixer housing, gearbox and mounting clamp. For use wherever corrosive vapors can attack process equipment or where cleanliness is of utmost importance.

Shaft coupling is sealed inside a gasketed nosecone - safe from corrosion and possible accidents.

Heavy-duty lip seal below the bearing and coupling prevent moisture and dirt from reaching internal parts.

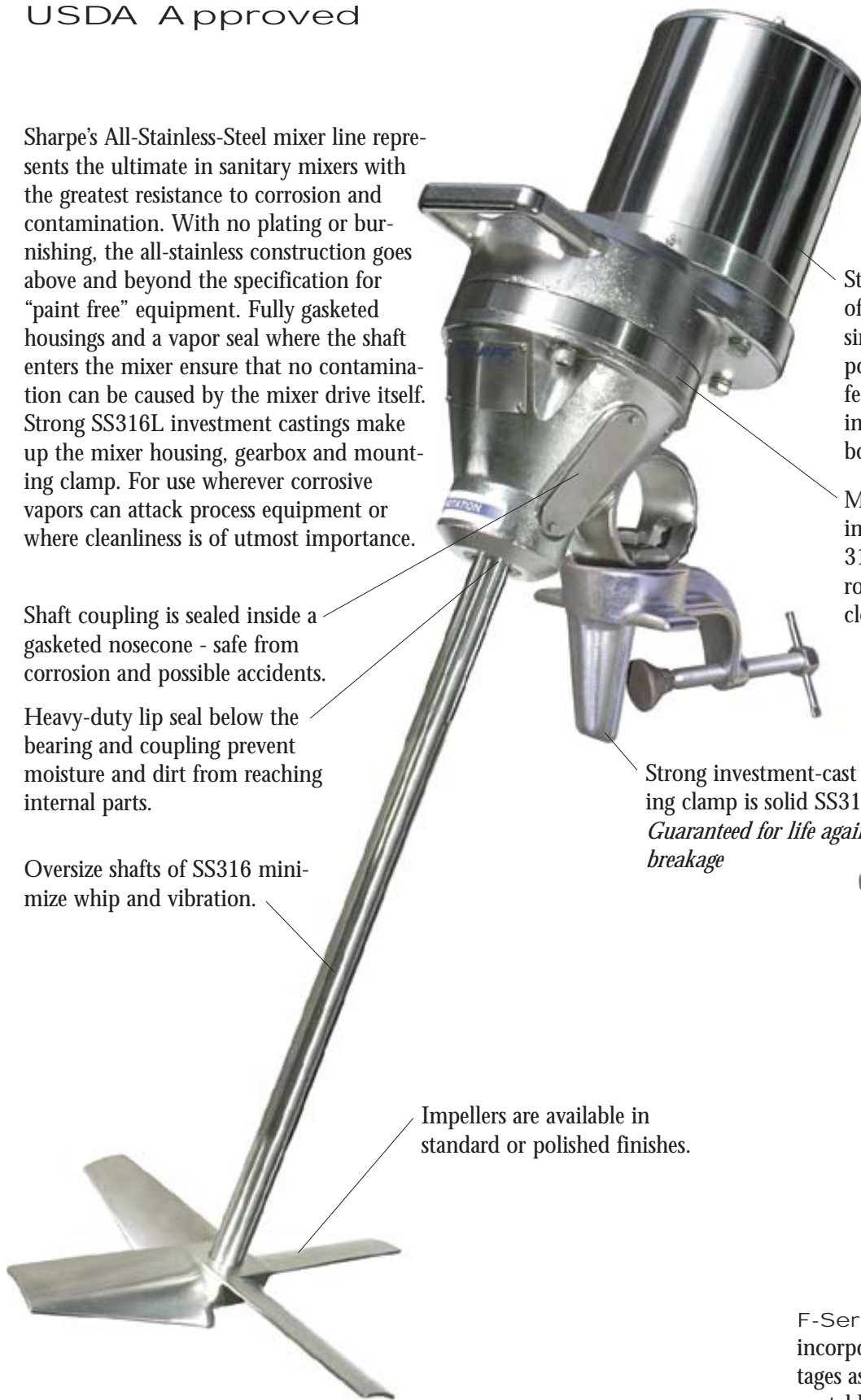
Oversize shafts of SS316 minimize whip and vibration.

Impellers are available in standard or polished finishes.

Stainless-Steel electric motors offer wash-down duty in either single-phase or three-phase power. These premium motors feature all stainless construction including end bells and terminal boxes.

Mixer housing and nosecone is investment-cast stainless steel 316L for superior durability, corrosion resistance and ease of cleaning.

Strong investment-cast mounting clamp is solid SS316L. *Guaranteed for life against breakage*



F-Series Stainless Mixers incorporate the same design advantages as Sharpe's Clamp-Mount portable mixers and are available in plate, flange, and ferrule mounting with various seals.

See pages 4 & 5 for cut-away details.



## Direct Drive Heavy-Duty Portables

Sharpe Mixers direct drive portable mixers provide high-speed mixing for those jobs where greater shearing action is required and for smaller batch mixing. The high speed of the impellers (1750-rpm) create localized high-velocity eddies (high shear) necessary for many applications such as dispersing and dissolving dry powders into a solution.

Alloy mixer housings are powder coated for maximum durability. Ball & socket mount allows 360° rotation and 90° vertical adjustments.

Stainless-Steel mounting clamp - *guaranteed for life against breakage*

Oversize 3/4", 1" and 1-1/4" diameter shafts are used for maximum stability & long life.

S.S.316 marine propellers provided standard. Shear discs or other impellers available.

Standard NEMA 56C frame motors are used to assure "off the shelf" availability and a wider range of motor options.

Shaft Coupling is protected from corrosion, safely located inside the sealed housing. No exposed coupling means a safer mixer as well.

Outboard shaft bearing minimizes whip and vibration. Brass-tipped stainless setscrews eliminate corrosion and prevent marring the mixer shaft.

A rubber-encapsulated vapor seal protects internal parts.



F-SERIES DIRECT DRIVE MIXERS incorporate the same design advantages as Sharpe's direct drive portable mixers and are available in plate and flange mounting with various seals.

Some items colorized for illustration. Optional wash-down duty motor shown.



## Gear Drive Heavy-Duty Portables

Sharpe Mixers gear drive portable mixers are the best choice for larger volume and higher-viscosity applications. The slower speed (350-rpm) provides the high torque necessary to mix higher viscosity fluids and the higher flow required in larger tanks. Large diameter Hyflo 218 impellers produce much more flow per horsepower than other mixers on the market.

Precision helical gearing is hardened and ground for exceptional strength and durability. AGMA Quality-10 guarantees quiet operation.

Outboard shaft bearing minimizes whip and vibration. Brass-tipped stainless setscrews eliminate corrosion and prevent marring the mixer shaft.



F-SERIES GEAR DRIVE MIXERS have the same design advantages as Sharpe Portable Mixers. See pages 6 through 10 for mounting options.



Standard NEMA 56C frame motors are used to assure "off the shelf" availability and a wider range of motor options.

Shaft Coupling is protected from corrosion, safely located inside the sealed housing. No exposed coupling means a safer mixer as well.

Alloy mixer housings are powder coated for maximum durability. Ball & socket mount allows 360° rotation and 90° vertical adjustments.

A rubber-encapsulated vapor seal protects internal parts.

Stainless-Steel mounting clamp - *guaranteed for life against breakage*

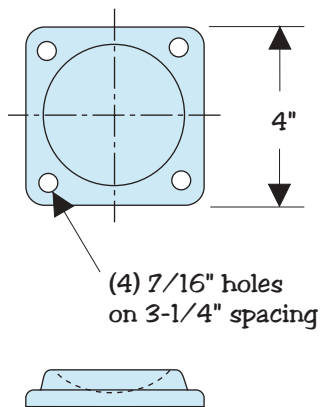
Oversize 3/4", 1" and 1-1/4" diameter shafts are used for maximum stability & long life.

Energy-efficient Hyflo 218 impellers pump more for less power. SS316 construction.

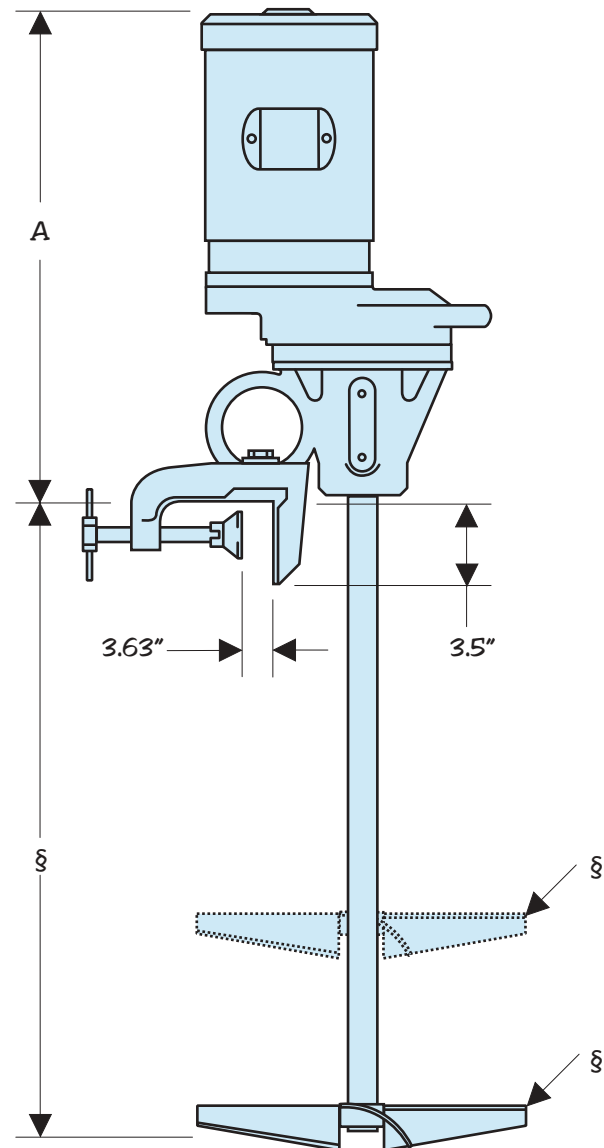
Some items colorized for illustration. Optional wash-down duty motor shown.

## Clamp Mount

Adjustable positioning and easy removability are two reasons to choose a clamp-mount portable mixer, available in both direct-drive and gear drive models. The heavy-duty stainless steel clamp mounts securely to the tank rim or other support. Mixer adjusts 90 degrees vertically and 360 deg. horizontally for optimal positioning.



CUP-PLATE option allows for full adjustable positioning on a permanently mounted base.



Direct Drive Dimensions

Model	HP	Wgt. lbs.	A
D025	1/4	60	14"
D033	1/3	62	15"
D050	1/2	70	15"
D075	3/4	76	16"
D100	1	88	16"
D150	1.5	94	18"
D200	2	102	19"

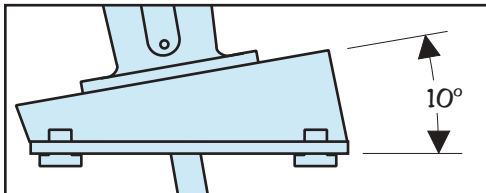
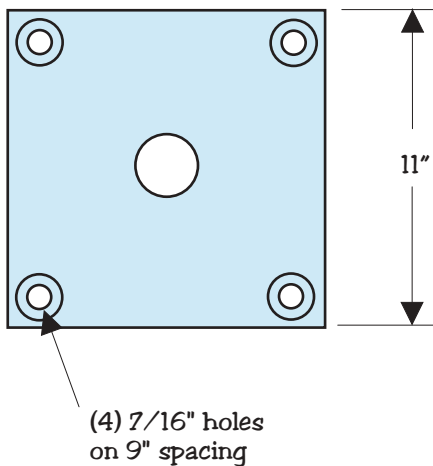
Gear Drive Dimensions

Model	HP	Wgt. lbs.	A
G025	1/4	76	18"
G033	1/3	80	18"
G050	1/2	88	18"
G075	3/4	95	19"
G100	1	108	20"
G150	1.5	116	21"
G200	2	123	22"

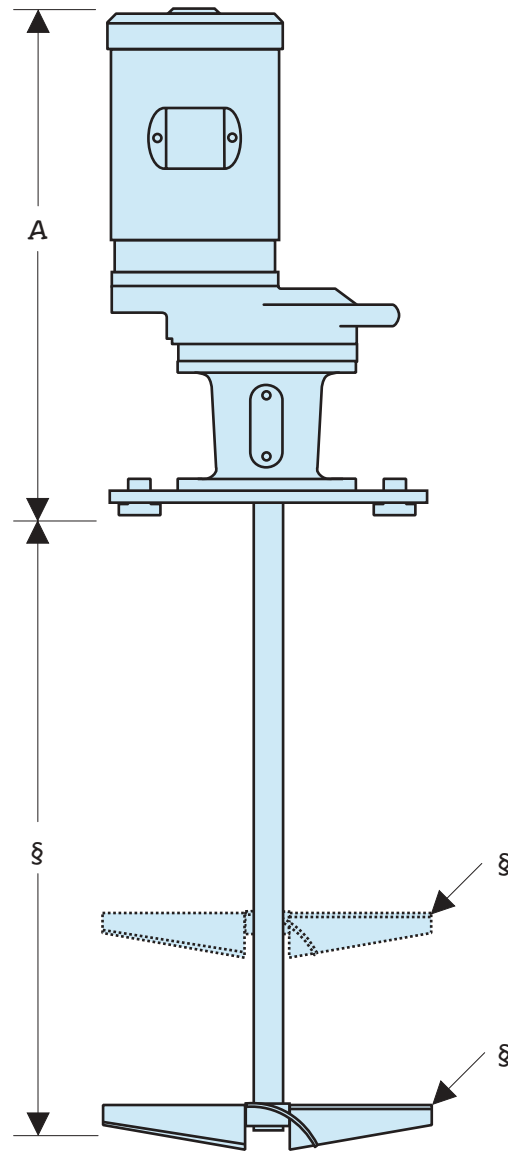
§ Shaft diameters & lengths and size & quantity of impellers are dependent upon the application and will be called out in the quotation.

## Plate Mount

The Sharpe Plate-Mounted F-SERIES mixers offer a sturdy 4-bolt mounting base for larger tanks and permanent installations. Vibration dampeners on the mounting plate isolate the drive from shock forces of longer mixer shafts and vigorous duty. Available in both Direct-Drive and Gear-Drive models.



Angle-Riser mounting option provides the correct angled, off-center mixer position for optimum mixing in non-baffled tanks.



Direct Drive Dimensions

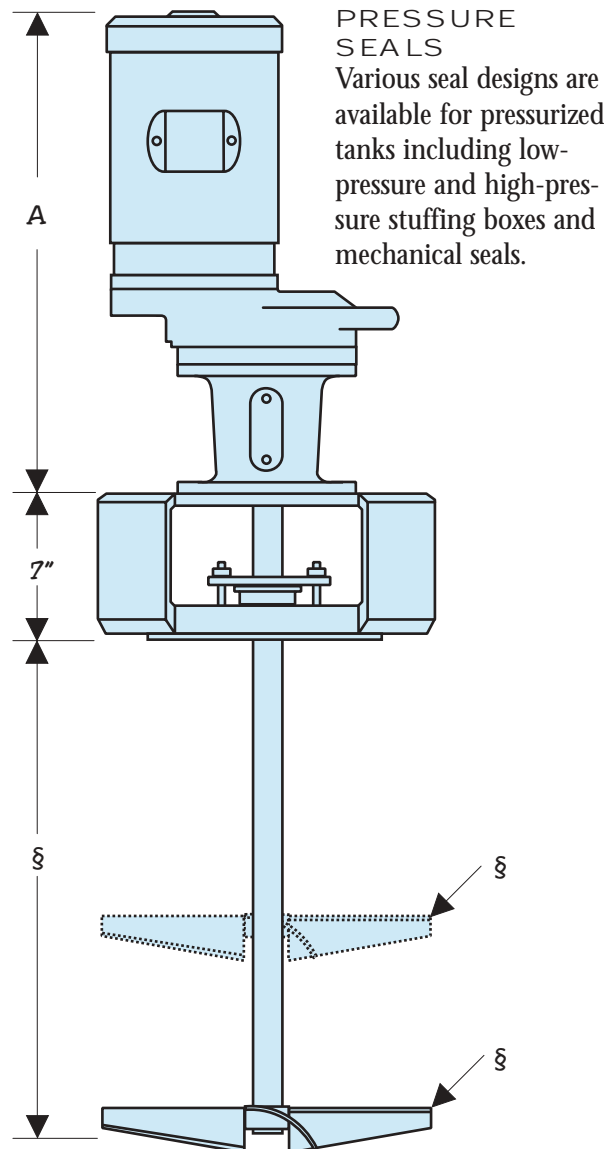
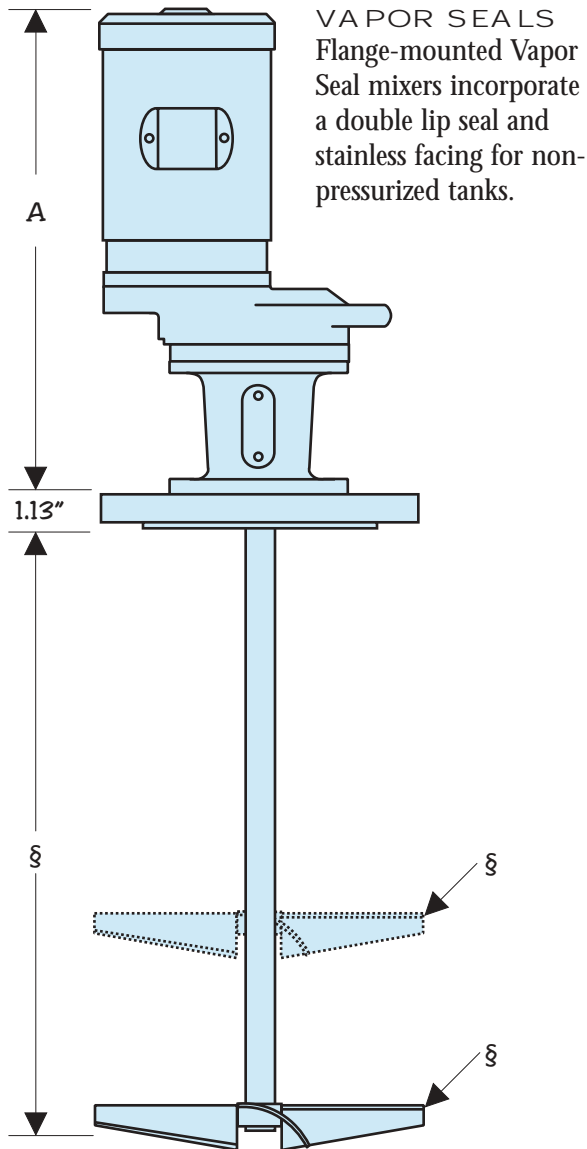
Model	HP	Wgt. lbs.	A
FDP025	1/4	60	17"
FDP033	1/3	62	17"
FDP050	1/2	70	17"
FDP075	3/4	76	18"
FDP100	1	88	19"
FDP150	1.5	94	20"
FDP200	2	102	21"

Gear Drive Dimensions

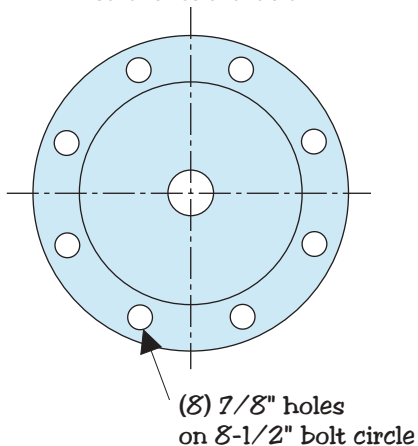
Model	HP	Wgt. lbs.	A
FGP025	1/4	76	20"
FGP033	1/3	80	20"
FGP050	1/2	88	21"
FGP075	3/4	95	21"
FGP100	1	108	22"
FGP150	1.5	116	23"
FGP200	2	123	24"

§ Shaft diameters & lengths and size & quantity of impellers are dependent upon the application and will be called out in the quotation.

## Flange Mount



**5" - 150# Std. Flange**  
other sizes available



Direct Drive Dimensions

Model	HP	Wgt. lbs.	A
FD*025	1/4	100	17"
FD*033	1/3	102	17"
FD*050	1/2	110	17"
FD*075	3/4	116	18"
FD*100	1	128	19"
FD*150	1.5	134	20"
FD*200	2	142	21"

Gear Drive Dimensions

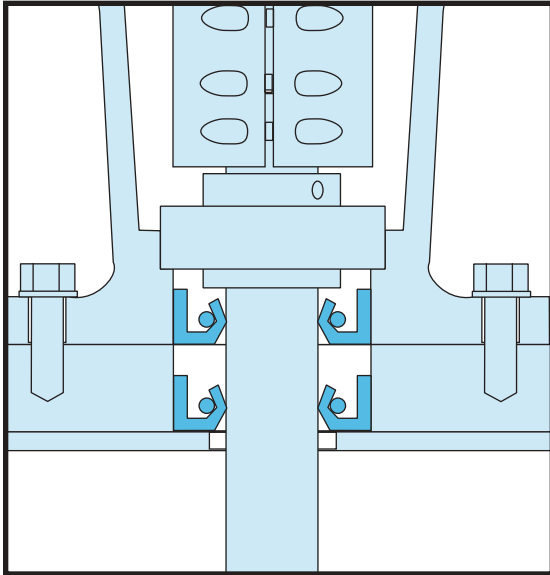
Model	HP	Wgt. lbs.	A
FG*025	1/4	116	20"
FG*033	1/3	120	20"
FG*050	1/2	128	21"
FG*075	3/4	135	21"
FG*100	1	148	22"
FG*150	1.5	156	23"
FG*200	2	163	24"

\* V=Vapor Seal; L= Low Pressure Stuffing Box;  
S= High Pressure Stuffing Box.

§ Shaft diameters & lengths and size & quantity of impellers are dependent upon the application and will be called out in the quotation.

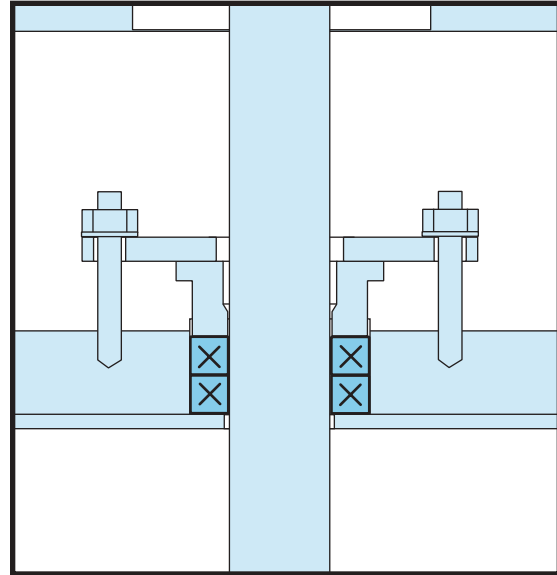


## Seal Options



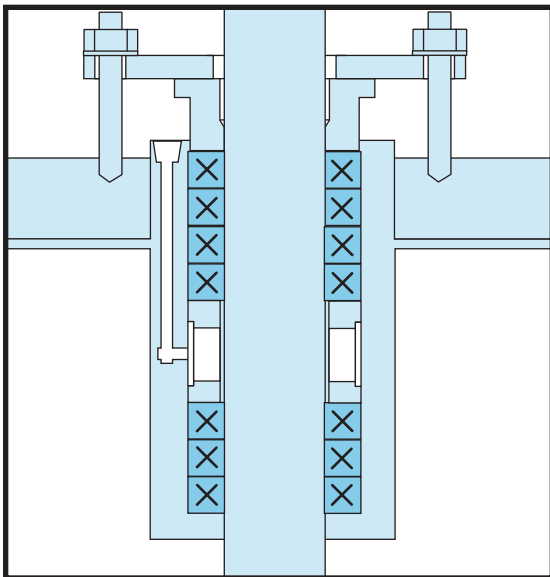
### VAPOR SEAL

Sharpe F-Series mixers may be flange mounted on non-pressurized tanks with the Vapor Seal option. Dual heavy-duty lip seals are installed behind 1/8" stainless-steel flange facing for superior corrosion resistance. Standard ASA 5"-150# series flanges furnished standard. Other sizes available.



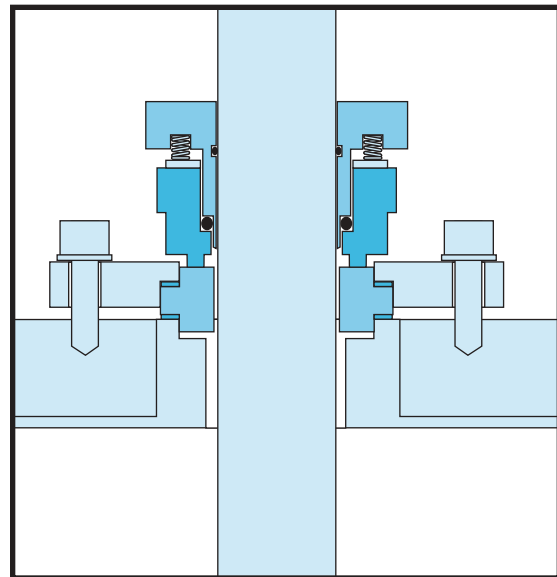
### LOW PRESSURE STUFFING BOX

A simple two-ring stuffing box is available for tank pressures up to 20 P.S.I. Standard ASA 5"-150# flange furnished standard. 1/8" thick SS316 facing and stainless fasteners ensure excellent corrosion resistance. Various packing styles available.



### HIGH PRESSURE STUFFING BOX

The time-proven 150 psig stuffing box is available with many styles of packing to suit different processes. Seven rings of packing are separated with a lantern ring for distributing lubricant. The seal body and facing are solid SS316. Spring or weight loaded lubricators are available.

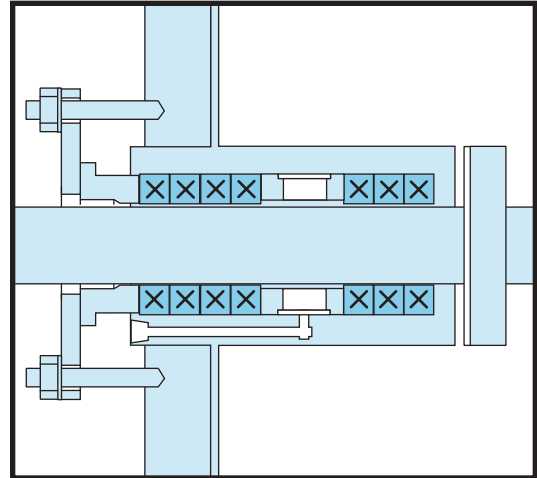


### MECHANICAL SEALS

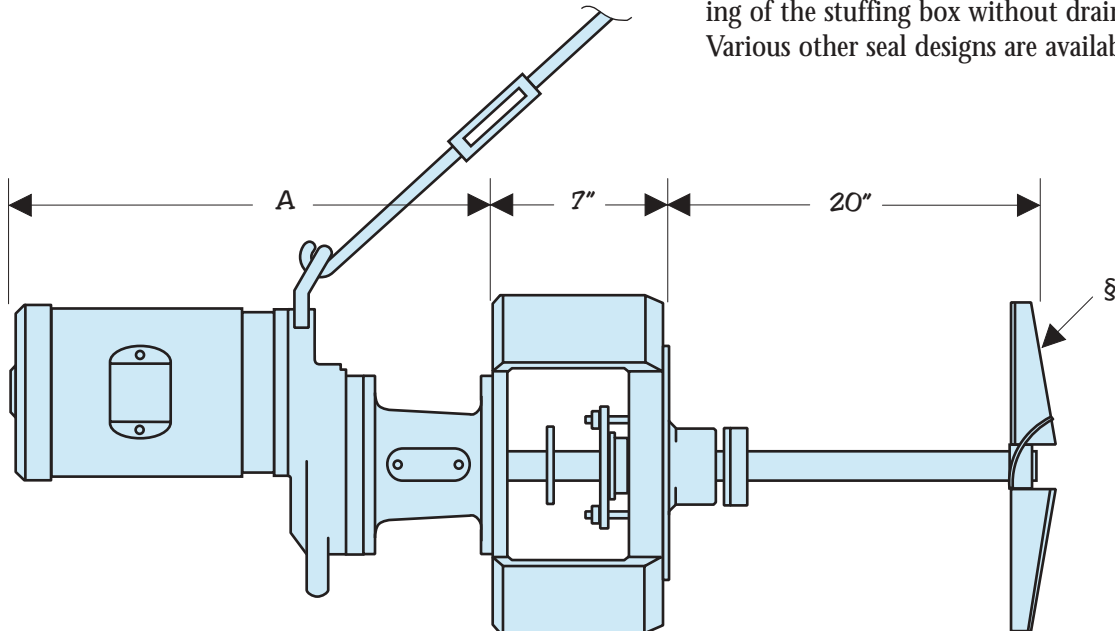
For the ultimate in leak-free protection and minimum maintenance, mechanical seals are available in a myriad of designs. Single Inside, Outside and Double Seals, Split Seals, Dry-Running Seals or the seal design preferred at your plant can be built to meet requirements. Various lubrication reservoirs and other systems are available.

## Side Entering

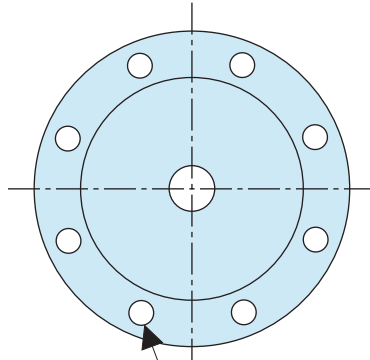
Side-Entering F-Series Mixers are most often used on storage tanks, or when there is insufficient room to mount a top-entering mixer. The horizontal flow sweeps the tank floor, maintaining suspension over a wide range of liquid levels. The compact design of the F-Series mixer often requires no external support, but tie-rods are furnished for extra stability.



The standard tank shut-off system allows repacking of the stuffing box without draining the tank. Various other seal designs are available.



5" - 150# Std. Flange  
other sizes available



(8) 7/8" holes  
on 8-1/2" bolt circle

§ Shaft diameters & lengths and size & quantity of impellers are dependent upon the application and will be called out in the quotation.

Gear Drive Dimensions

Model	HP	Wgt. lbs.	A
SFG(S/M)025	1/4	116	20"
SFG(S/M)033	1/3	120	20"
SFG(S/M)050	1/2	128	21"
SFG(S/M)075	3/4	135	21"
SFG(S/M)100	1	148	22"
SFG(S/M)150	1.5	156	23"
SFG(S/M)200	2	163	24"

S= High Pressure Stuffing Box;  
M=Mechanical Seal.

## Thrifty Mixers

The Thrifty mixer line is an economical choice for light-duty or intermittent-duty applications. The mixers are available from 1/6 to 1/3 hp to handle tanks up to 250 gallons of waterlike material, or 50 gallons of product with viscosities up to 250 cps. Choose between standard c-clamp, bolted cup-plate or 2" NPT barrel mounting. Tote bin models also available (see page13).

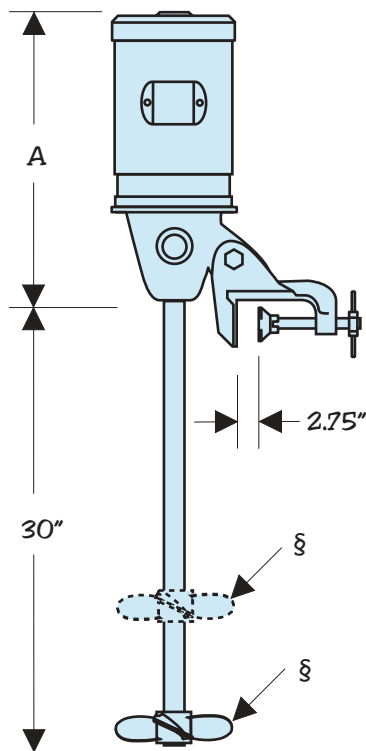
Adjustable-angle mounting clamp and housing are made of heat-treated aluminum.

Non-proprietary 56C-frame motors. Standard 1-ph models include 10-foot cord with switch and 3-prong plug.

Shaft coupling is enclosed within a protective housing.

SS316 mixer shaft, 5/8" diameter x 30" long furnished standard. §

SS316 marine propellers furnished standard. Folding-blade impellers are available for installation through 2" NPT bungs on barrel mixers.



C-Clamp, Cup Plate, & Barrel Mount Dimensions

Model	HP	Motor Type	Wgt. lbs.	A
(B)T016	1/6	TEFC	25	9"
(B)T025	1/4	TENV	30	10"
(B)T033	1/3	TENV	30	10"
(B)T033A	1/3	AIR	25	4.3"
(B)T033SCR	1/3	VAR-SP	35	12"

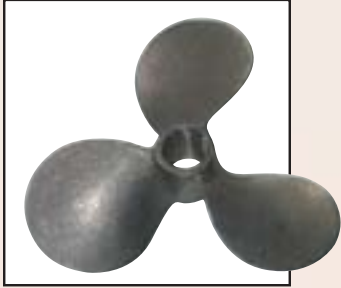
B = Barrel Mount

§ Size & quantity of impellers are dependent upon the application and will be called out in the quotation.

See pages 12 & 13 for options.

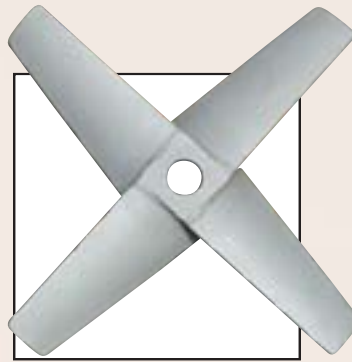


## Impeller Designs



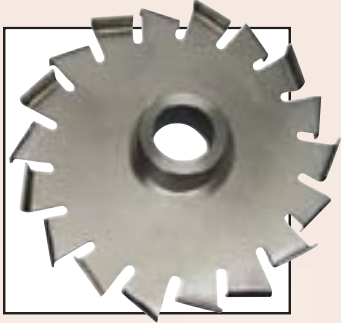
### PROPELLER

Three-blade, square-pitch marine propellers provided standard on high speed Direct-Drive units.



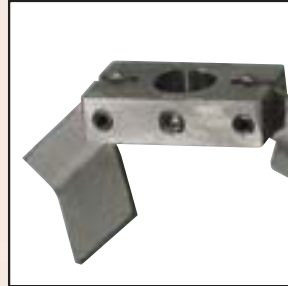
### HYFLO 218

Energy-efficient Hyflo 218 impellers furnished standard on all Gear-Drive units for the maximum flow per horsepower.



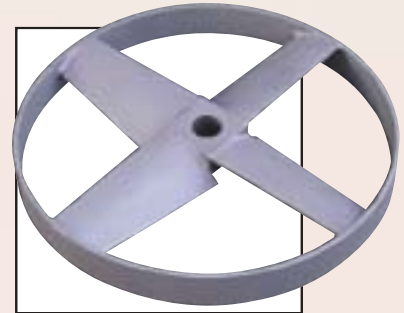
### HIGH SHEAR IMPELLER

High-shear discs and Cowles-blade impellers are available for better dispersion.



### FOLDING PROPELLER

Folding-blade impellers fit through the bung openings of 55-gallon drums.



### SHROUD-RING

Shroud rings are optional to prevent impact damage from baffles or other in-tank devices.

## Motor Choices

All motors offered are non-proprietary NEMA standard 56C frame motors



### TEFC/TENV

Totally-enclosed, fan-cooled motors furnished standard; 1-ph & 3-ph. DC motors are also available.

### CHEM DUTY

Moisture-resistant windings and other corrosion-resistant features offer higher durability for more corrosive or harsh environments.

### EXPLOSION PROOF

For use in hazardous environments that include explosive materials. Please indicate what Class and Group is required.



### WASH DOWN

Stainless shafts, USDA white epoxy paint & other special features for severe washdown processing applications.



### STAINLESS STEEL

The ultimate in paint-free corrosion-resistance. Washdown features within an all-stainless steel enclosure.



### VARIABLE SPEED

Variable-Frequency controllers available with standard NEMA 12 enclosures for washdown service. SCR controllers also available for DC motors



### AIR MOTORS

Standard 56-C frame air motors are available for simple & inexpensive variable speed operation in an explosion-proof enclosure.

## Accessories and Options



### MIXER STANDS

Sharpe Mixers manufactures a wide variety of adjustable-height mixer stands, in sizes from 24" to 72" tall. Manufactured from plate steel & heavy-wall pipe, these stands are built for rugged service. Available in mild steel or stainless.



### PARTS KITS

After years of service, your Sharpe Mixer can be rebuilt with a Mixer Fixer Kit. All the right high quality parts are included in one efficient package. Includes all wearing parts and shaft coupling (not shown).



### STAND OPTIONS

Heavy-duty, ratchet type nylon tank straps optional to hold the stand tight to the tank. Casters are also available for easy movement of the stand from tank to tank.



### BUNG MOUNTS

Mounting adapters for 2" barrel bungs are available for both the Thrifty and Direct-Drive portable mixers. Folding impellers pass thru 2" opening.



### TOTE BIN MOUNTS

Sharpe's Tote Bin Mixers are designed specifically for portable tote-bin tanks. Sturdy three-point base with vibration mounts can be bolted to the tank roof, or directly to the threaded cover so it can be moved from tank to tank.



### F. R. L. KITS

Top-quality Filter / Regulator / Lubricator kits offer the best protection and control for air-driven mixers. Needle valves are also available for economical speed control.



### COATINGS AND SPECIAL ALLOYS

Sharpe Mixers offers a wide variety of coating options including Halar™, Kynar™, Teflon™, FRP and rubber covering. Special alloys such as Titanium or Alloy 20 are also available.



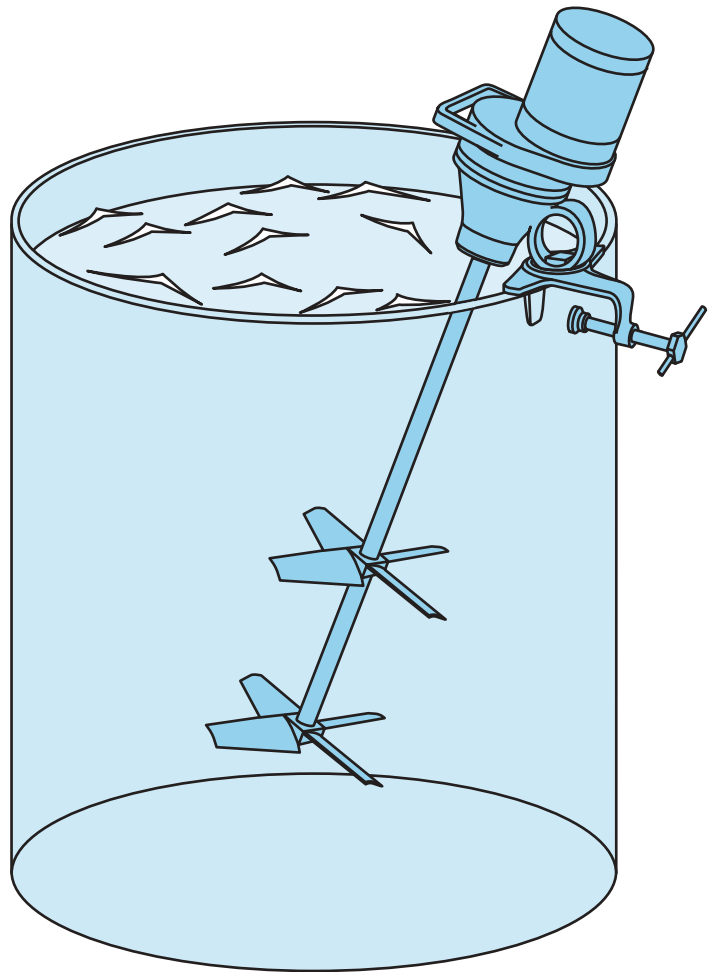
### POLISHING

#4 polished impellers are available from stock, with finer finishes down to 5 Ra, and all-welded & blended assemblies optional.

## Mixer Selection Guide

This selection guide and the sizing charts on the opposite page will help determine the proper mixer for your application. Product viscosity and process requirements as well as the tank size and shape determine the best mixer for the application. The optimum tank shape is cylindrical with a liquid level between one and one-and-a-half times the diameter. Other proportions as well as square, rectangular or cone-bottomed tanks can also be used, but may require special considerations when designing the mixer. Discuss these needs with your Sharpe representative.

When the tank height is greater than 1.5 x diameter, use two impellers. The upper impeller should be placed halfway between the bottom impeller and the top of the liquid. Place the bottom impeller between one and two diameters off the tank floor.



## MOUNTING CONFIGURATIONS

### ANGULAR OFF-CENTER

For best results with clamp-mounted mixers, point the shaft  $\sim 10^\circ$  out from vertical and  $10^\circ$ – $20^\circ$  clockwise from the tank centerline. This reduces vortexing and improves top-to-bottom turnover on tanks without baffles.

### ON CENTER W/BAFFLES

On-center mounting with a fully baffled tank provides optimum flow patterns for most applications.

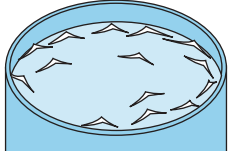
### ANGLE RISER OFFSET

For larger non-baffled tanks, the double-offset Angle Riser mounting minimizes vortexing & provides good top to bottom turnover.



## Sizing Charts

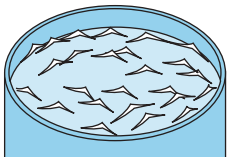
Choose your product viscosity on the left side of the chart and read over to your tank volume. These tables are based on cylindrical tanks with a liquid depth of 1-1.5 x tank diameter. Mixer selection may vary with different tank shapes, retention times or specific process requirements. Contact your local Sharpe Mixers representative for assistance in confirming the best mixer for our application



Mild to Moderate mixing

Max/Min viscosity <10:1, Spec.Gravity difference <0.2, Fluid surface barely in motion, Long blend times, Storage tanks, Hold Tanks, Feed tanks, Flocculation

Common Materials	Viscosity (centipoises)	Tank volume in gallons - liquid depth = (1.0 - 1.5) tank diameter							
		50	100	250	500	1000	2000	3000	5000
gasoline	1.0	D-O25	D-O25	D-O25	D-033	D-075 G-025	D-100 G-025	D-200 G-025	G-050
toluene									
water									
kerosene									
blood	100	D-O25	D-O25	D-033	D-075 G-025	D-150 G-025	G-033	G-050	G-075
100% sulfuric acid									
SAE 10 oil									
olive oil	250	D-O25	D-O25	D-050 G-025	D-100 G-025	G-025	G-050	G-075	G-100
paint									
glucose	500	D-O25	D-033 G-025	D-075 G-025	D-150 G-025	G-050	G-075	G-100	G-150
castor oil									
catsup	1,000	G-025	G-025	G-033	G-050	G-075	G-100	G-150	G-200
100% glycerol									
molasses	2,500	G-025	G-033	G-050	G-075	G-100	G-150	G-200	
corn syrup									
honey	5,000	G-033	G-050	G-075	G-100	G-150	G-200		
blackstrap molasses									
molten glass	15,000	G-050	G-075	G-100	G-200				



Vigorous mixing

Max/Min viscosity <500:1, Spec.Gravity difference <0.6, Fluid surface in rolling boil, Rapid blend times, Blend tanks, Batch Mixing, PH control, Solids Suspension, Heat Transfer

Common Materials	Viscosity (centipoises)	Tank volume in gallons - liquid depth = (1.0 - 1.5) tank diameter							
		50	100	250	500	1000	2000	3000	5000
gasoline	1.0	D-O25	D-O25	D-033	D-050	D-150 G-033	D-200 G-050	G-075	G-100
toluene									
water									
kerosene									
blood	100	D-O25	D-033	D-050	D-100 G-033	D-200 G-033	G-050	G-075	G-100
100% sulfuric acid									
SAE 10 oil									
olive oil	250	D-033	D-050 G-025	D-050 G-033	D-150 G-033	G-050	G-075	G-100	G-200
paint									
glucose	500	D-050 G-025	D-075 G-033	D-100 G-033	D-200 G-050	G-075	G-100	G-150	G-200
castor oil									
catsup	1,000	G-033	G-033	G-075	G-100	G-150	G-200		
100% glycerol									
molasses	2,500	G-050	G-075	G-100	G-150	G-200			
corn syrup									
honey	5,000	G-075	G-100	G-150	G-200				
blackstrap molasses									
molten glass	15,000	G-100	G-150	G-200					

Sharpe Mixers manufactures a full line of liquid mixing equipment including top and side entry mixers and custom designs to meet specific requirements. Contact your local representative or visit our web site to find out more



## Applications

- FOOD AND BEVERAGE
- PHARMACEUTICAL
- PULP AND PAPER
- PETROLEUM
- CHEMICAL
- MUNICIPAL
- WASTE TREATMENT
- MINING

Built with pride in the United States of America

*Sharpe Mixers' strength originates from the teamwork and energy of our people - experienced and innovative employees dedicated to providing exactly what our customers demand: superior equipment, excellent service and timely delivery at a competitive price.*

**SHARPE**  
**MIXERS**

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