Proper selection of a mixer requires knowledge of application variables:

1) Container capacity: tank diameter and batch height.

2) Liquid viscosity: Different types of liquids display unique characteristics when force is applied. Four most common types of liquid behavior are listed below—all of our mixers are to be used with fluids exhibiting Newtonian, pseudoplastic, or thixotropic behaviors. Refer to the "Viscosity Value Conversion Table" for typical viscosities of common liquids.

Dilatant Liquids—viscosity increases as shear rate increases. Mixers can bog down and stall after initially mixing such liquids. Dilatant liquids include slurries, clay, and candy compounds.

Newtonian Liquids—viscosity remains constant regardless of shear rate or agitation. As mixer speed increases, flow increases proportionately. Newtonian liquids include water, mineral oils, and hydrocarbons.

Pseudoplastic Liquids—viscosity decreases as shear rate increases, but initial viscosity may be sufficiently great to prevent mixing. Typical pseudoplastic liquids are gels, latex paints, and lotions.

Thixotropic Liquids—as with pseudoplastic liquids, viscosity decreases as shear rate or agitation increases. When agitation is stopped or reduced, hysteresis occurs and viscosity increases. Often the viscosity will not return to its initial value. Thixotropic liquids include soaps, tars, shortening, glue, inks, and peanut butter.

3) Torque requirements: the rotational force required of the mixer motor—measured in in-oz or in-lb.

4) Rotational speed (rpm) and diameter of mixing propeller: A small increase in the rpm or diameter greatly increases the power required for mixing. This relationship can be expressed as follows:

$$\text{Power} \propto \text{rpm}^3 \times \text{dia}^5$$

5) Duty cycle: the time interval devoted to starting, running, stopping, and idling when a device is used intermittently.

6) Power supply: electric (115 or 230 VAC) or air-drive mixers for areas where electricity is unsafe or impractical.

7) Horsepower (hp) requirements: the efficiency required of the mixer motor with regard to torque (in-oz) and to the rotation speed (in revolutions per minute—rpm) as defined by the following equation:

$$\text{hp} = (\text{in-oz} \times \text{rpm})/1{,}008{,}400$$

Use the chart below to estimate the mixer horsepower you will need for your application.

Selecting Mixer Horsepower and Type

	1/10-hp gear drive mixers	1/15-hp direct drive mixers	1/30-hp direct drive mixers
Volume	**Viscosity (cps)**		
50 gal.	1	1	—
25 gal.	100	25	1
15 gal.	250	100	10
5 gal.	500	250	25
1 gal.	1000	500	250
½ gal.	2000	500	500
1500 mL	2500	1000	500
750 mL	5000	1500	1000
500 mL	5000	2000	1000

Viscosity Value Conversion Table

Centipoise† (cps)	Centistokes (cSt)	Saybolt Second Universal (SSU)	Typical liquid
1	1	31	Water
3.2	4	40	Milk
12.6	15.7	80	No. 4 fuel oil
16.5	20.6	100	Cream
34.6	43.2	200	Vegetable oil
88	110	500	SAE 10 oil
176	220	1000	Tomato juice
352	440	2000	SAE 30 oil
880	1100	5000	Glycerine
1561	1735	8000	SAE 50 oil
1760	2200	10,000	Honey
3000	4500	20,000	Glue
5000	6250	28,000	Mayonnaise
8640	10,800	50,000	Molasses B
15,200	19,000	86,000	Sour cream
17,640	19,600	90,000	SAE 70 oil

†Centipoise = centistokes x specific gravity where specific gravity is assumed to be 0.8 (except for water). To find the exact cps of your fluid: **cps = cSt x (weight per gallon x 0.120).**

Positioning a mixer in a cylindrical vessel. . .

Figure 1

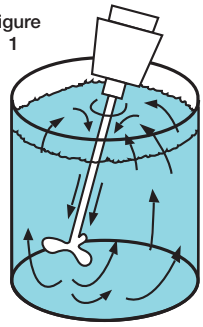


Figure 2

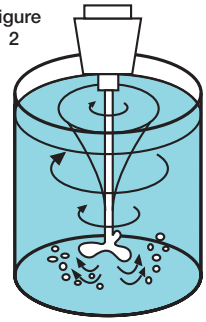


Figure 3

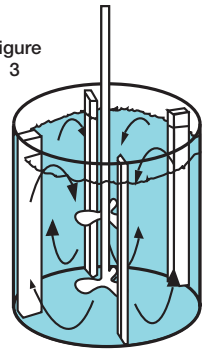


Figure 4

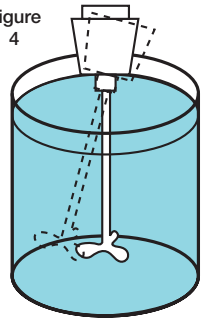


Figure 1: Aiming the shaft off center avoids vortexing and allows strong top-to-bottom turnover. This is the best position for most mixing and blending.

Figure 2: A center stirrer with a straight-blade propeller creates vortexing in an unbaffled vessel. Vortexing speeds up dispersion and dissolution of light liquids/hard-to-wet powders.

Figure 3: Baffles prevent vortexing and excessive aeration created by center-mounted stirrers with straight blade propellers. Four vertical baffles should be equidistant around the circumference of the vessel. Baffle width should be 1/12 the diameter of the tank.

Figure 4: You may want more than one stirring action for multiple-step mixing. For example, if you first need to dissolve light powders, you can center the stirrer to create a vortex. Then you can reposition the stirrer at an angle to maintain a uniform suspension or to blend in other fluids. Portable clamp-mount stirrers make repositioning easy.

Stir-Pak® Variable-Speed Mixers

Get full-range performance affordably

A. Stir-Pak® General-Purpose Mixer

- Keyless chuck accepts mixing shafts from 5⁄16" to 3⁄8" (8 to 10 mm) dia
- Integrated control for both on/off and speed settings
- Ideal for light-duty mixing of water-like fluids
- Smooth-start motor ramps to set speed

Brushed DC motor has a compact speed controller integrated by a custom anodized aluminum potentiometer, which controls both on/off and variable-speed settings for single-direction mixing.

Mixer includes: 3⁄8" (9.5 mm) dia x 12" (305 mm) L 316 SS shaft, 1½" (38 mm) dia propeller, 6" (152 mm) mounting rod, 6-ft (1.8-m) grounded cord with power supply.

Complete system adds: double clamp and support stand.

B. Stir-Pak® Dual-Shaft Mixer

- Use for either high-speed or high-torque mixing
- Solid-state for precise speed control

Two motor shafts give you two mixers in one. The direct-drive shaft provides high-speed, low-viscosity mixing; switch to the gear-reduction shaft for your low-speed, high-viscosity mixing needs.

Mixer includes: 6"L x ½" dia (152 mm L x 13 mm dia) mounting rod; chuck (accepts shafts from 5⁄16" to 3⁄8" [8 to 10 mm] dia); and 6-ft (1.8-m), 3-wire cord with plug.

Complete system adds: 3⁄8" dia x 12"L (10 mm dia x 305 mm L), 316 SS shaft; 3" dia (76 mm dia) propeller; 316 SS, double clamp; and support stand.

Description	Speed (rpm)	hp	Max torque (in-oz)	Shaft dia, (mm)	Power (VAC, Hz)	Catalog number	Price
A. General-purpose mixer							
Mixer	0 to 4000	1⁄50	9.5	8 to 10	115/230, 50/60	GY-04555-00	
Complete system						GY-04555-50	
B. Dual-shaft mixer							
Mixer	Direct-drive shaft: 50 to 5000	1⁄50	Direct-drive shaft: 4	8 to 10	115, 50/60	GY-04555-25	
Complete system	Gear shaft: 3 to 250		Gear-shaft: 80			GY-04555-60	

Stir-Pak® Heavy-Duty Mixer Systems

Easily customize to your needs

1. Speed Controller

- Simple controls—speed adjustment knob and separate "forward/off/reverse" switch
- Reduce gear failure with torque limiting protection

2. Mixer Heads

- Don't limit your mixing angle—adjustable tilt from 0 to 30° for proper propeller placement
- Maintenance-free, rugged motor
- For more viscous or larger samples, choose a high-torque, low-speed mixer head with keyless chuck
- For lower viscosity samples, use a high-speed low-torque mixer head with through shaft for easy shaft positioning

Complete systems include: speed controller, mixer head, shaft, propeller, clamp and stand.

REQUIRED System Components

1) Speed controller
2) Mixer head
or choose complete system

Stir-Pak high-speed, low-torque mixer system 50007-32

1. Speed controller			2. Mixer heads						Complete systems	
Power (VAC, Hz)	Catalog number	Price	Description	Speed (rpm)	hp	Max torque (in-oz)	Power (VAC, Hz)	Catalog number	Price	Catalog number	Price
115, 50/60	GY-50007-00		High torque, low speed; with keyless chuck	2 to 180	1⁄15	340	115, 50/60	GY-50007-10		GY-50007-12	
230, 50/60	GY-50007-05						230, 50/60	GY-50007-15		GY-50007-17	
115, 50/60	GY-50007-00			9 to 900	1⁄15	70	115, 50/60	GY-50007-20		GY-50007-22	
230, 50/60	GY-50007-05						230, 50/60	GY-50007-25		GY-50007-27	
115, 50/60	GY-50007-00		High speed, low torque; with adjustable through-shaft collet	23 to 2300	1⁄10	45	115, 50/60	GY-50007-30		GY-50007-32	
230, 50/60	GY-50007-05						230, 50/60	GY-50007-35		GY-50007-37	
115, 50/60	GY-50007-00			60 to 6000	1⁄10	17	115, 50/60	GY-50007-40		GY-50007-42	
230, 50/60	GY-50007-05						230, 50/60	GY-50007-45		GY-50007-47	

Cole-Parmer® Ultra-Compact Digital Mixer

Get powerful, general mixing in a small unit

- Mix up to 2 liters of water at a maximum speed of 2500 rpm
- Don't order separate components—includes mixer, stand, and two mixing blades
- Maintenance-free brushless DC motor provides speeds from 50 to 2500 rpm
- Includes optional auto-start feature in the event of power loss
- Remembers last speed used before powering off

What's included: stand with 19¾"L x ⅜" dia (500 mm L x 10 mm dia) rod, integral clamp, 1³⁄₁₆" (30 mm) dia 316 stainless steel (SS) axial blade, 1³⁄₁₆" (30 mm) dia 316 SS straight blade impeller, 7⅜" x ¼" dia (187.5 mm x 6 mm dia) impeller shaft, and universal power adapter with 6-ft (1.8-m) cord.

Cole-Parmer®

Speed (rpm)	hp	Max. torque (in-oz)	Power (VAC, Hz)	Catalog number	Price
50 to 2500	1/100	14.2	100 to 240, 50/60	GY-50006-03	

Accessories

GY-17050-03 **NIST-traceable calibration** with data for mixer

Low-Cost Laboratory Mixers

Won't overload

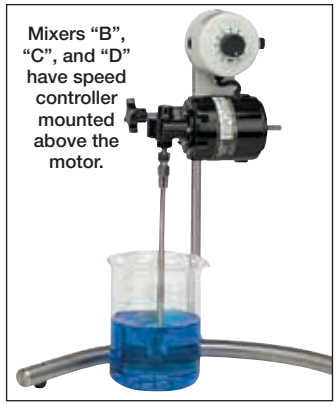
A. Single-Shaft, Fixed-Speed Mixer has 1/30-hp, shaded-pole, brushless motor with built-in fan providing a shaft speed of 1600 rpm. Unit is protected by thermal-overload cutoff.

B. Light-Duty, Single-Shaft Variable-Speed Mixer blends up to 5 gallons (18.9 liters) of water-like (low-viscosity) fluids—ideal for use with baths. Mixer features stepless speed control.

C. Light-Duty, Dual-Shaft Variable-Speed Mixer mixes up to 5 gallons (18.9 liters) of water-like fluids with the direct-drive shaft; or use the gear-reduced drive shaft to mix up to 2 gallons (7.6 liters) of fluids with the viscosity of lightweight oil. Features stepless speed control.

D. High-Torque, Dual-Shaft Variable-Speed Mixer handles your tough mixing applications—features speeds up to 7500 rpm and torque up to 192 in-lb (2169 Ncm).

All mixers include: chuck, 8½"L x ½" dia (216 mm L x 13 mm dia) mounting rod, and 6-ft (1.8-m), three-wire cord with plug. For 230 VAC operation, order transformer below.



Key	Description	Drive type	Motor type	Speed (rpm)	hp	Max torque (in-oz)	Shaft diameter, in. (mm)	Power (VAC, Hz)	Catalog number	Price
Fixed-speed mixer										
A	High-torque, single-shaft	Direct	Fan-cooled, shaded pole, brushless	1600	1/30	20.8	5/16 (7.9)	120, 50/60	GY-04322-00	
Variable-speed mixers										
B	Light-duty, single-shaft	Direct	Universal with enclosed fan	500 to 7500	1/75	2.4	¼ (6.4)	120, 50/60	GY-04335-00	
C	Light-duty, dual-shaft	Direct 10:1	Universal with enclosed fan	500 to 7500 50 to 750	1/75	2.4 16	5/16 (7.9)	120, 50/60	GY-04330-00	
D	High-torque, dual-shaft	Direct 10:1	Permanent-magnet	500 to 7500 50 to 750	⅛	19.2 192	5/16 (7.9)	120, 50/60	GY-04341-00	

Accessories

GY-01578-02 **Transformer** for 230 VAC operation for model C
GY-01578-05 **Transformer** for 230 VAC operation for model B
GY-01578-06 **Transformer** for 230 VAC operation for models A and D

Cole-Parmer® Digital Reversing Mixer

Time your cycles for more efficient mixing

- Won't lose speed—brushless, 142 in-oz torque motor maintains speed
- Minimize aeration and vortexing—reversing feature alters mixing pattern for better mixing
- No more moving mixer head to change impeller depth—through-shaft housing for easier positioning
- No more motor burn out—overload protection if torque exceeds ratings
- See what you're mixing—integrated sample light illuminates sample area

Complete system 50004-10 includes mixer, support stand, clamp, and mixer propeller.

Mix samples up to 20,000 cps or up to 6.6 gallons (25 liters) easily and effectively. Repeat mixing conditions accurately with LED display, with control to ±1 rpm or 3% of reading. Set timer from 1 to 2000 minutes, with audible alert when complete.

Mixer includes: mixer head, adjustable chuck (accepts rod up to ⅜" [9.5 mm] dia), chuck key, mounting support rod, external power supply, and grounded power cord with plug assembly.

Complete system adds: propeller/shaft, support stand, and clamp.

Description	Speed (rpm)	hp	Max torque (in-oz)	Power (VAC, Hz)	Catalog number	Price
Mixer only	40 to 2010	1/10	142	100 to 230, 50/60	GY-50004-00	
Complete system					GY-50004-10	

GY-17050-03 **NIST-traceable calibration** for mixers

Servo Dyne™ Electronic Mixers

Get more precise mixing

- Monitor and control speed, torque, and batch time through digital controller or a computer interface

1. Controller

Provide precise control of mixing speed within ±0.2% despite changes in viscosity, temperature, or line voltage. Monitor torque, set torque limits, or measure and control differential torque with mixer head in use and sets the appropriate rpm and torque limits for that motor. Operates on 115 VAC, 50/60 Hz.

2. Mixer Heads

- Maintenance-free—permanent-magnet DC motor with permanently lubricated ball-bearing construction
- Rotate mixer head from 0° to 30° for proper positioning of shaft and propeller
- Optical shaft encoder relays the exact motor rotation speed data to the electronic mixer controller

High-Torque, Low-Speed Models have a keyless chuck that accepts mixing shafts up to ⅜" (10 mm) in diameter.

High-Speed, Low-Torque Models have an adjustable, through-shaft precision hand-tightened collet that accepts ⅜" (10 mm) dia mixing shafts. Through-shaft design allows positioning the mixing propeller at any depth without moving the mixer head.

Complete systems include: speed controller, mixer head, shaft, propeller, clamp and stand.

Optional software program lets you control up to 16 ServoDyne mixers and Masterflex® L/S® computer-compatible pump drives. (Contact your local dealer for more information.)

1. Controller		2. Mixer heads							Complete systems	
Catalog number	Price	Description	Speed (rpm)	hp	Max torque (in-oz)		Catalog number	Price	Catalog number	Price
					Continuous	Intermittent				
GY-50008-00		High torque, low speed; with keyless chuck	3 to 180	1/15	340	510	GY-50008-10		GY-50008-12	
			20 to 900	1/15	70	105	GY-50008-20		GY-50008-22	
		High speed, low torque; with adjustable through-shaft collet	60 to 2300	1/10	45	65	GY-50008-30		GY-50008-32	
			150 to 6000	1/10	17	25	GY-50008-40		GY-50008-42	

Economical Constant-Torque Mixers

Maintain constant torque throughout speed range

– Totally enclosed nonventilated motors seal out fumes and dust

– Manually resettable circuit breaker protects against overload

A. Light-Duty Mixer is engineered for mixing smaller batches of light to medium-light viscosity fluids at high speeds.

B. General-Purpose Mixer is specifically designed to handle medium-viscosity fluids for a wide range of applications.

C. High-Torque, Constant-Speed Mixer provides up to 117.6 in-oz of torque with the 7:1 reduction gear. The specially designed gear head maintains constant rotational speed regardless of viscosity changes as mixing progresses—ideal for pseudoplastic or thixotropic fluids.

D. Heavy-Duty, Reversible Mixer has a ⅛-hp, reversible motor for manually switchable forward or reverse rotation. Use this mixer for larger batches of medium- to high-viscosity fluids at moderate speed.

E. Continuous Agitation Mixer provides instant, automatic forward-and-reverse rotation for thorough mixing without vortexing. The resulting highly efficient action keeps material in homogeneous suspension and minimizes formation of air bubbles. Variable reversing time cycle allows you to set the cycle time from 2 to 20 seconds. The direct-drive motor is specially designed to handle viscous fluids.

What's included: ⅜" dia x 12"L (10 mm dia x 305 mm L) 316 SS shaft; 316 SS propeller; collet; 10"L x 9⁄16" dia (254 mm L x 14 mm dia) mounting rod; and 6-ft (1.8-m), cord with plug.

Drive type	Speed (rpm)	hp	Constant torque (in-oz)	Shaft, dia x L, in. (mm)	Power (VAC, Hz)	Catalog number	Price
A. Light-duty mixer							
Direct	0 to 6000	1⁄10	16.8	⅜ x 12 (10 x 305)	115, 60	GY-50402-00	
					220, 50	GY-50402-05	
B. General-purpose mixer							
Direct	0 to 2000	1⁄15	39	⅜ x 12 (10 x 305)	115, 60	GY-50402-10	
					220, 50	GY-50402-15	
C. High-torque, constant-speed mixer							
7:1 gear head	0 to 1000	1⁄10	117.6	⅜ x 12 (10 x 305)	115, 60	GY-50402-20	
					220, 50	GY-50402-25	
D. Heavy-duty, reversible mixer							
Direct	2 to 2000	⅛	74	⅜ x 12 (10 x 305)	115, 60	GY-50402-30	
E. Continuous agitation mixer							
Direct	0 to 2000	1⁄15	39.8	⅜ x 12 (10 x 305)	115, 60	GY-50403-00	

Compact Digital Lab Mixer

Don't lose sight of your sample—integrated panel light illuminates vessel

– Get accurate and repeatable results—maintains power at all speeds and has automatic overload protection

– Stir up to 25 liters (6.6 gallons) and maximum viscosity of 15,000 cps

– Readjust shaft length and remove vessels easily with through-shaft design

– Easy to use, push-button motor

What's included: stainless steel chuck (accepts up to ⅜" [9.5 mm] dia shafts) and key, 5"L x ½" dia (127 mm L x 13 mm dia) mounting rod, external power supply, and 6-ft (1.8-m) power cord from power supply with three-prong plug.

Speed (rpm)	hp	Max torque (in-oz)	Power (VAC, Hz)	Catalog number	Price
40 to 2000	1⁄15	100	120/230, 50/60	GY-50801-00	

GY-50801-50 **Mixer stand,** 12" x 9½" (305 mm x 241 mm) base with ⅝" dia x 24"L (16 mm dia x 610 mm L) SS solid rod

GY-50801-51 **Mixer impeller,** compact straight blade, 5⁄16" dia x 16" (8 mm dia x 406 mm L) SS shaft; 1¼" (32 mm) dia blade

GY-50801-52 **Mixer impeller,** compact square blade, 5⁄16" dia x 16" (8 mm dia x 406 mm L) SS shaft; 1¼" (32 mm) dia blade

GY-50801-54 **Mixer impeller,** anchor paddle, 5⁄16" dia x 16" (8 mm dia x 406 mm L) SS shaft; 2"W x 2"H (51 mm W x 51 mm H) paddle

GY-04561-24 **Heavy-duty clamp** holds rods up to 1⅛" (29 mm) dia. Made of cast aluminum zinc alloy with chemical-resistant epoxy coating

Digital Dual-Range Mixer

No separate components to purchase—complete system is ready to go!

- No downtime—maintenance-free motor for continuous duty
- Fulfill all your lab mixing needs—two speed ranges for a variety of applications
- No need to move mixer head to reposition propeller—through-shaft design for easy movement
- No difficult controls—easy-to-use knob and LED display for accurate setting

Use this versatile, affordable mixer for liquid volumes up to 5 gallons (18.9 liters) and viscosities up to 10,000 cps (approximately the viscosity of honey). Select speed from 60 to 2000 rpm in two ranges for a variety of applications.

What's included: chuck (accepts up to ⅜" [10 mm] dia shafts), 6¼"L x ½" dia (159 mm L x 10 mm dia) mounting rod, four-blade propeller mixer stand, and clamp.

Complete system includes propeller, clamp, and stand

Speed (rpm)	hp	Max torque (in-oz)	Power (VAC, Hz)	Catalog number	Price
60 to 500/ 240 to 2000	1/25	259	115, 50/60	GY-50705-00	
			230, 50/60	GY-50705-10	

Single-Range Digital Mixers

Mix viscous samples up to 30,000 cps

- Speed won't change even as viscosity changes
- Won't overheat—thermal overload shut-off for safety
- Maintenance-free design for continuous duty

EUROSTAR 20 Digital Mixer handles volumes up to 4 gallons (15 liters) and viscosities up to 10,000 cps.

EUROSTAR 40 Digital Mixer will mix volumes up to 6.6 gallons (25 liters) and viscosities up to 30,000 cps.

What's included: chuck (accepts up to ⅜" [10 mm] dia shaft) and 6¼"L x ½" dia (159 mm x 13 mm) mounting rod.

Speed (rpm)	hp	Max torque (in-oz)	Power (VAC, Hz)	Catalog number	Price
Eurostar 20 digital mixer					
30 to 2000	1/16	28.3	115, 50/60	GY-50702-30	
			230, 50/60	GY-50702-35	
Eurostar 40 digital mixer					
30 to 2000	1/8	56.6	115, 50/60	GY-50702-40	
			230, 50/60	GY-50702-45	

Digital Constant-Speed Mixers

Speed won't change even as viscosity does

- Automatic adjustment to desired speed with unique continuous speed comparison
- No need to move mixer head to remove samples—through-shaft design for impeller adjustments
- Worry-free operation—maintenance-free motor with overload protection
- Handle even large samples—up to 100 liters (26.4 gallons)

EUROSTAR 60 Digital Mixer (50704-20 and -25) handles volumes up to 10.6 gallons (40 liters) and viscosities up to 50,000 cps.

EUROSTAR 100 Digital Mixer (50704-30 and -35) will mix volumes up to 26.4 gallons (100 liters) and viscosities up to 70,000 cps.

What's included: chuck (accepts up to ⅜" [10 mm] dia shaft) and 6¼"L x ½" dia (159 mm x 13 mm) mounting rod.

Speed (rpm)	hp	Max torque (in-oz)	Power (VAC, Hz)	Catalog number	Price
Eurostar 60 digital mixer					
30 to 2000	3/16	85	115, 50/60	GY-50704-20	
			230, 50/60	GY-50704-25	
Eurostar 100 digital mixer					
30 to 1300	1/5	142	115, 50/60	GY-50704-30	
			230, 50/60	GY-50704-35	

FEATURES

✓ Ultra-clear, high-contrast TFT LCD controller screen displays all process parameters

✓ RS-232 and USB interfaces for easy documentation of processes and firmware updates

Detachable wireless controller—lets you monitor and control all functions remotely

Chuck guard for added protection

Digital Control Mixers with Wireless Remote

Control and monitor mixer wirelessly

– Measure viscosity changes with torque trend function

– Monitor fluid temperature with integrated temperature sensor

– Automatic adjustment to desired speed for maintaining consistent mixing

EUROSTAR 60 Control Mixer (50705-30 and -35) handles volumes up to 10.6 gallons (40 liters) and viscosities up to 50,000 cps.

EUROSTAR 100 Control Mixer (50705-40 and -45) will mix volumes up to 26.4 gallons (100 liters) and viscosities up to 70,000 cps.

EUROSTAR 200 Control Dual-Range Mixer (50705-50 and -55) will mix up to 26.4 gallons (100 liters) and viscosities up to 100,000 cps. Two selectable speed ranges give you the option of high viscosity or high-speed mixing.

EUROSTAR 200 Control P4 Dual-Range/ High-Torque Mixer (50705-60 and -65) will mix up to 26.4 gallons (100 liters) and viscosities up to 150,000 cps. A high-torque rating and two selectable speed ranges give you the option of high viscosity or high-speed mixing.

What's included: stainless steel Pt RTD temperature probe; chuck (accepts up to ⅜" [10 mm] dia shaft); 6¼"L x ½" dia (159 mm x 13 mm) mounting rod; and a 6½-ft (2-m) three-wire power cord with plug.

Speed (rpm)	hp	Max torque (in-oz)	Power (VAC, Hz)	Catalog number	Price
Eurostar 60 control mixer					
30 to 2000	3/16	85	115, 50/60	GY-50705-30	
			230, 50/60	GY-50705-35	
Eurostar 100 control mixer					
30 to 1300	⅛	142	115, 50/60	GY-50705-40	
			230, 50/60	GY-50705-45	
Eurostar 200 control dual-range mixer					
6 to 400/30 to 2000	⅛	283	115, 50/60	GY-50705-50	
			230, 50/60	GY-50705-55	
Eurostar 200 control P4 dual-range/high-torque mixer					
4 to 108/16 to 530	⅛	935	115, 50/60	GY-50705-60	
			230, 50/60	GY-50705-65	

GY-50705-80 **Replacement temperature probe,** stainless steel

GY-50705-82 **Temperature probe,** glass-coated stainless steel for acid and alkaline fluids

Dual-Speed Brushless Mixers

Won't let speed change even as viscosity changes

– Chuck guard encloses spinning chuck for added safety

– Set torque reading at zero via torque tare function

Mixers feature a sparkless, brushless DC motor that provides a long, maintenance-free service life. The totally enclosed nonventilated motor is rated for continuous duty. Overload protection automatically shuts off the mixer if maximum torque is exceeded—an LED light signals overload conditions. The through-shaft design lets you easily alter shaft length and propeller depth.

What's included: calibration certificate, stainless steel chuck and key (accepts up to ⅜" [9.5 mm] dia shafts), chuck guard, 5"L x ½" dia (127 mm L x 13 mm dia) mounting rod, and 6-ft (1.8-m) cord with three-prong plug.

Speed range (torque)		Motor	Power (50/60 Hz)	Catalog number	Price
Low speed	High speed				
12 to 360 rpm (800 in-oz)	360 to 1800 rpm (160 in-oz)	⅓ hp	115 VAC	GY-50800-00	
			230 VAC	GY-50800-05	
20 to 600 rpm (480 in-oz)	600 to 3000 rpm (96 in-oz)		115 VAC	GY-50800-10	
			230 VAC	GY-50800-15	
40 to 1200 rpm (240 in-oz)	1200 to 6000 rpm (48 in-oz)		115 VAC	GY-50800-20	
			230 VAC	GY-50800-25	

GY-04561-24 **Heavy-duty clamp,** holds rods up to 1⅛" (30 mm) dia. Made of 304 SS with chemical-resistant epoxy coating

GY-50001-93 **Mixer safety stand.** Cast zinc-aluminum base has chemical-resistant epoxy coating. The 304 SS rod measures 28"H x 1" dia (711 mm H x 25 mm dia)

GY-04552-88 **Replacement mixer chuck** with key

U-Shaped Paddle Assemblies of electropolished 304 SS. Ideal for your large-volume or high-viscosity mixing. Shafts measure ⅜" dia x 36"L (9.5 mm dia x 914 mm L).

Paddle dia, in. (mm)	Cat. no.	Price
4 (102)	GY-50801-64	
5 (127)	GY-50801-66	
10 (254)	GY-50801-68	

Digital Pilot-Process Mixer

Mix large, viscous batches with ease

– Two speed ranges for intensive mixing up to 100,000 cps

– Stir volumes up to 200 liters (52 gallons)

Mechanically controlled mixer is designed for intensive mixing applications in laboratories and pilot plants. Easy-to-use controls and a clear LED display of rpm enable you to precisely control and repeat your process parameters. Mixer features infinitely adjustable dual-speed control.

Self-locking temperature limiter protects against overheating and ensures safe operation through thermal overload shut-off. Quiet operation and a robust, ergonomic design ensure a long service life.

What's included: chuck (accepts up to ⅝" [16 mm] dia shaft). Note: cable and plug are not included; unit to be wired on-site according to local ordinances.

Complete system adds: four-blade propeller 50702-90 and telescopic mixer stand 50702-95.

Description	Speed (rpm)	hp	Max torque (in-oz)	Power (VAC, Hz, phase)	Catalog number	Price
Mixer only	57 to 275/ 275 to 1300	⅝	4248	230, 60, 3	GY-50702-80	
Complete system					GY-50702-85	

Accessories

(included in complete system)

Four-Blade Propeller Assembly. Standard stirring element for drawing the material to be mixed from the top to the bottom. Local shearing forces. Generates axial flow in the vessel. Use at medium to high speeds.

Telescopic Mixer Stand features a pneumatic spring for effortless raising and lowering of the mixer.

Description	Cat. no.	Price
Four-blade propeller	GY-50702-90	
Telescopic mixer stand	GY-50702-95	

Low-Cost Hazardous-Duty Air-Drive Mixers

Mix hazardous solutions safely—no sparks

– Control mixing speed easily with needle valve

– Don't get overcome with noise—muffler quiets operation

Select direct-drive mixers for your high-speed, low-torque applications or gear-drive mixers for your high-torque, low-speed applications. Model 04681-10 has steel gears for continuous agitation of highly viscous materials.

We recommend installing an air filter/regulator 07042-75 and an air lubricator 07042-70 in your air supply line—order from "Accessories" on page 531. See more accessories on pages 533–535.

What's included (all except model 04686-15): 316 SS paddle assembly (⅜" dia x 12"L [10 mm dia x 305 mm L] shaft with 2½" [64 mm] dia propeller), collet, 10"L x 9/16" dia (254 mm L x 14 mm dia) mounting rod, muffler, needle valve, and 4-ft (1.2-m) L air hose with fittings.

Mixer 04686-15 includes: ⅜" dia x 18"L (10 mm dia x 457 mm L), 316 SS shaft; 3⅝" (92 mm) dia, 316 SS propeller; collet; 10"L x ⅝" dia (254 mm L x 16 mm dia) mounting rod; muffler; needle valve; and 4-ft (1.2-m) L air hose with fittings.

Speed (rpm)	hp	Torque (in-oz)	Air inlet pressure (psi)	Catalog number	Price
Direct-drive air motor mixers, 35 to 100 psi air input pressure					
200 to 10,000	⅓	64†	35 to 100	GY-04680-00	
200 to 7000	½	96†		GY-04686-00	
300 to 3000	¾	448‡		GY-04686-15	
Gear-drive air motor mixers, 35 to 80 psi air input pressure					
50 to 1200	⅓	288†	35 to 80	GY-04685-00	
50 to 1200	⅓	288†		GY-04681-10	
50 to 1000	½	416†		GY-04686-10	
8 to 170	⅓	1600†		GY-04681-00	

†Torque values are given at air motor speed of 6000 rpm and pressure of 80 psi.
‡Torque values are given at air motor speed of 3000 rpm and pressure of 100 psi.

Digital Pilot-Process Mixer

Mix volumes up to 80 liters (21 gallons)

- Handle large volumes easily and viscosities up to 50,000 cps
- Two selectable speed ranges for high viscosity or high-speed mixing
- Through-shaft design allows you to easily raise or lower the shaft and impeller

Easy-to-use controls and a clear LED display of rpm enable you to precisely control and repeat your process parameters. Mixers feature infinitely adjustable stepless speed control.

Quiet, continuous-duty motors feature thermal overload shut-off and an efficient heat-dissipating design to ensure a long service life. Safety circuits ensure automatic cut-off in an anti-stall or overload condition.

What's included: chuck (accepts up to ⅜" [10 mm] dia shaft) 159 mm x 13 mm diameter mounting rod; and a 6½-ft (2-m) three-wire power cord with plug.

Speed (rpm)	hp	Max torque (in-oz)	Power (VAC, Hz)	Catalog number	Price
60 to 400/240 to 1400	⅛	1275	115, 50/60	GY-50702-70	
			230, 50/60	GY-50702-75	

Dual-Shaft Mixer

Keep speed constant even with changing viscosities

- Two shafts provide both low- and high-speed mixing
- Totally enclosed motor equipped with permanently lubricated bearings

Built-in drive current filters eliminate pulsing, reduce motor heating, and increase service life. Remote controller is connected to the motor via a 6-ft (1.8-m) insulated cable and features a forward/off/reverse switch, a stepless speed control dial, and "power on" indicator light.

What's included: two 304 SS paddle assemblies (1½" [38 mm] dia and 2¾" [70 mm] dia propellers on 8¾" [222 mm] L shafts), keyless chuck (accepts up to ⅜" [10-mm] dia shafts), dual-rod clamp, 8"L x 11/16" dia (203 mm L x 18 mm dia) mounting rod, and 6-ft (1.8-m), three-wire power cord (115 VAC model includes plug).

Speed	hp	Max torque	Power (VAC, Hz)	Catalog number	Price
Direct-drive shaft: 0 to 4000 rpm 12:1 gear shaft: 0 to 333 rpm	1/40	Direct-drive shaft:4.16 in-oz 12:1 gear shaft: 57.6 in-oz	115, 50/60 230, 50/60	GY-04661-00 GY-04661-02	

GY-04368-10 **Mixer stand.** Rod measures 610 mm H x 17 mm dia

GY-04552-75 **Controller support platform.** Mount controller adjacent to mixer head. Platform includes dual-rod clamp

Pail and Drum Air Mixers

Mix up to 208 liters of any viscosity liquid

- Air control valve allows easy speed adjustment
- Low speed mixing and stalling will not overheat as with an electric motor
- Stainless steel shaft and impeller
- For mixing open and closed containers

What's included: 316 stainless steel shaft and impeller.

Speed (rpm)	hp	Max torque (in-oz)	Shaft, L x dia, (mm)	Propeller type, dia, caged	Catalog number	Price
100 to 2000	¼	720	381 x 6 533 x 13 1016 x 13	64 mm 127 mm 127 mm	GY-50500-45 GY-50500-47 GY-50500-49	

GY-50500-31 **Air set** for use with air drive mixers. Complete set includes regulator, filter, and lubricator

Pail Mixer with Rim Clamp

Reduce mess

- Convenient for mixing materials in a five-gallon bucket
- Folding impeller allows you to mount the mixer without removing the lid
- Air-control valve for speed adjustment

What's included: mixer comes complete with stainless steel 12" (305 mm) shaft and 3¾" (95 mm) diameter folding impeller.

Motor only

Speed (rpm)	hp	Motor type	Air input pressure	Catalog number	Price
0 to 2000	½ to 1	Pneumatic	35 to 100 psi	GY-50500-30	

GY-50500-31 **Air set** for use with air drive mixer. Complete set includes regulator, filter, and lubricator

Batch Mixers

Match a mixer to your specific application

– Mix materials with viscosities up to 10,000 cps

Air-powered mixers operate with air input into the ⅜" (10 mm) NPT(F) inlet port on the needle valve. All air motors require 60 to 75 max psig of air pressure. One-quarter and ⅓-hp air motors require an air flow rate of 15 scfm.

The TENV electric mixers operate on 115 VAC, one-phase power TEFC and XPRF models operate on 208-230/460 VAC three-phase power and require power wiring to the motor.

A
50323-20

B
04518-30

C
50323-30

D
50323-68

A. High-Torque, Direct-Drive Mixers

High-torque mixers are available with either 20° offset tank clamps for off-center mixing or 2" (50.8 mm) NPT(M) bung adapters.

B. Small Batch, Direct-Drive Mixers

Use these versatile mixers for lab mixing or for scaling up pilot plant experiments. All models include fully adjustable tank-clamp to position mixer at any angle.

C. Heavy-Duty, Gear-Drive Mixers

These variable-speed, gear-drive mixers are ideal for mixing your high-viscosity materials or large batches of water-like fluids. All generate enough torque to mix highly viscous fluids.

Sizing Guide

Use the sizing guide below to select the appropriate mixer for your application. Choose the viscosity closest to materials to be mixed. Then find the volume you will be mixing. Color corresponds to mixer catalog number. Sizing guide is for general-purpose mixing applications and has the following limits:

– Newtonian, thixotropic or pseudoplastic fluids ONLY

– Solids limited to 25% by weight of total batch weight

– Specific gravity of total batch limited to 1.25 (10½ lb/gallon)

Viscosity			Volume in gallons							
ssu	cps	Example								
31	1	Water	10	25	50	100	200	500	1000†	1500‡
1240	250	SAE 40 oil	10	25	50	100	200	500	1000†	1500‡
2480	500	Most paints	10	25	50	100	200	500	1000†	1500‡
4600	1000	Castor oil	10	25	50	100	200	500	1000†	1500‡
11,600	2500	Molasses	10	25	50	100	200	500		
23,500	5000	Honey	10	25	50	100	200			
46,500	10,000	Sour cream	10	25	50	100				

†Min tank dia for 1000 gal. selections = 66" OR max depth from mounting surface = 68"
‡Min tank dia for 1500 gal. selections = 78" OR max depth from mounting surface = 68"

D. Variable-Speed, Pressure Batch Mixers

These pressure batch mixers withstand up to 25 psi at ambient temperatures for closed-top tank applications. Once threaded or bolted to the drum or tank, the mixer prevents vapor loss, seals out dust and debris, protects motor from corrosive vapors, and eliminates contamination of batch solution from outside sources. Dry running, single lip seal is made of fluorocarbon polymer. All wetted parts are 316 stainless steel (SS).

A, C, and D include: 316 SS shaft, 316 SS A-310 impeller, and drive quill with set screw. "D" Models 50310-68 and -70 also have bung adapter and include a folding impeller.

B includes: 316 SS shaft, 316 SS A-310 impeller, and 316 SS collet-type chuck.

ISO 9001:2008 CERTIFIED SUPPLIER

Motor type	Speed (rpm)	hp	Torque at max rpm (in-oz)	Mount	Shaft, L x dia, in. (mm)	Impeller dia, in. (mm)	Power (VAC)	Catalog number	Price
A. High-torque, direct-drive mixers									
Air	20 to 1800	¼	140	20° offset clamp	48 x ⅝ (1219 x 16)	3.8 (96)	—	GY-50323-10	
TENV	90 to 1800					3.8 (96)	115	GY-50323-20	
TEFC	1750					3.8 (96)	208 to 230/460	GY-50310-36	
B. Small batch, direct-drive mixers									
TENV	1200/1600	1/15	42	Clamp	30 x ⅜ (762 x 10)	3.4 (86)	115	GY-04518-30	
TENV	1750	⅛	72					GY-04518-40	
C. Heavy-duty, gear-drive mixers									
TENV	20 to 350	¼	720	20° offset clamp	60 x ¾ (1524 x 19)	10 (254)	115	GY-50323-30	
TENV		½	1440			11.8 (300)	115	GY-50323-42	
TENV		¼	720		36 x ¾ (914 x 19)	7.6 (193)	115	GY-50310-00	
Air						7.6 (193)	—	GY-50310-02	
TENV		½	1440			8.8 (224) dual	115	GY-50310-04	
TENV	20 to 280	¾	2701	20° offset clamp	60 x ¾ (1524 x 19)	12.8 (325) dual	115	GY-50310-28	
TEFC	350	½	1440		36 x ¾ (914 x 19)	8.8 (224) dual	208 to 230/460	GY-50310-42	
D. Direct-drive pressure batch mixers									
Air	20 to 1800	⅓	192	2" (51 mm) bung with lip seal	32 x ⅝ (813 x 16)	4 (102) folding	—	GY-50310-68	
TENV							115	GY-50310-70	

Batch mixers include a 316 stainless steel A-310 impeller (model 50350-40)

Hazardous-Duty Air-Drive Mixers

Use where electrical power is hazardous or impractical

– Ideal for mixing in presence of volatile or explosive vapors

– Control speed easily with included needle valve

General-Purpose Air-Drive Mixer handles up to 100 liters of low-viscosity fluids or smaller volumes of higher viscosity fluids. Internal flex coupling protects motor from accidental shock loads on the shaft and impeller.

What's included: 5/16" dia x 12"L (8 mm dia x 305 mm L), 316 SS shaft; 2½" dia x 5/16" bore (64 mm dia x 8 mm bore); 316 SS A-310 impeller; 316 SS collet-type chuck, universal clamp; muffler; and needle valve.

– We recommend using an in-line filter/regulator and an air lubricator—order from page 531.

LabMaster™ Air-Drive Mixers are excellent for pilot studies. The tube suspension mixers require the heavy-duty clamp 04560-24.

What's included: 3/8" dia x 18"L (10 mm dia x 457 mm L), 316 SS nonthrough-type shaft, 2½" dia x 5/16" bore (64 mm dia x 8 mm bore), 316 SS A-310 impeller; collet-type chuck; universal clamp or tube suspension mounting; muffler; and needle valve.

50322-00

Description	Speed (rpm)	hp	Max torque (in-oz)	Air inlet pressure (psi)	Catalog number	Price
General-purpose mixer with universal clamp	30 to 1800	1/30	19	30 to 90	GY-04520-30	
LabMaster tube suspension mixer	30 to 1800	1/15	37	30 to 90	GY-50322-00	
LabMaster mixer with universal clamp					GY-50322-10	

GY-04560-24 Heavy duty clamp

Heavy-Duty, Gear-Drive Mixers

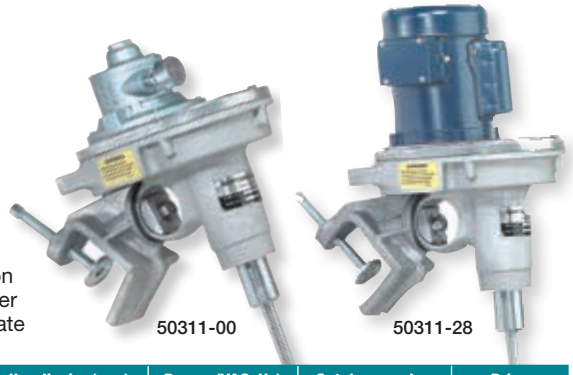
Stand up to your difficult applications

– Grease-filled gearbox eliminates oil seal and the possibility of oil contamination

– Mixers have no clutches to slip, wear, or replace

– Shaft bearings are permanently lubricated

Indexed ball-and-socket design with vibration pad lets you adjust the mixer position and achieve various process results you want. Cast aluminum housing. **Note:** Power cord for 1/3- and ½-hp models is not included. Models of ¾ to 1 hp require a separate motor starter; please contact your local representative for details.



50311-00 50311-28

Speed (rpm)	hp	Max torque(in-oz)	Drive type	Motor type	Shaft, L x dia, in. (mm)	Impeller dia, in. (mm)	Power (VAC, Hz)	Catalog number	Price
35 to 350	½	1440	Gear	Air	36 x ¾ (914 x 19)	8 (203)	—	GY-50311-00	
						8 (203) (dual)		GY-50311-02	
35 to 350	½	1440	Gear	Air	60 x ¾ (1524 x 19)	12 (305)	—	GY-50311-08	
350	1/3	1080	Gear	TEFC	36 x ¾ (914 x 19)	10 (254)	115/230, 60	GY-50311-18	
350	½	1440	Gear	TEFC	48 x ¾ (1219 x 19)	10 (254) (dual)	115/230, 60	GY-50311-26	
350	½	1440	Gear	TEFC	60 x ¾ (1524 x 19)	10 (254) (dual)	115/230, 60	GY-50311-28	
350	1	3600	Gear	TEFC	60 x 1 (1524 x 25)	14 (356)	230/460‡	GY-50311-34	
350	½	1440	Gear	XPRF	60 x ¾ (1524 x 19)	10 (254) (dual)	115/230, 60	GY-50311-46	

‡3-phase motor

GY-50500-31 Air set for use with air-powered mixers up to ½ hp. Includes regulator, filter, and lubricator

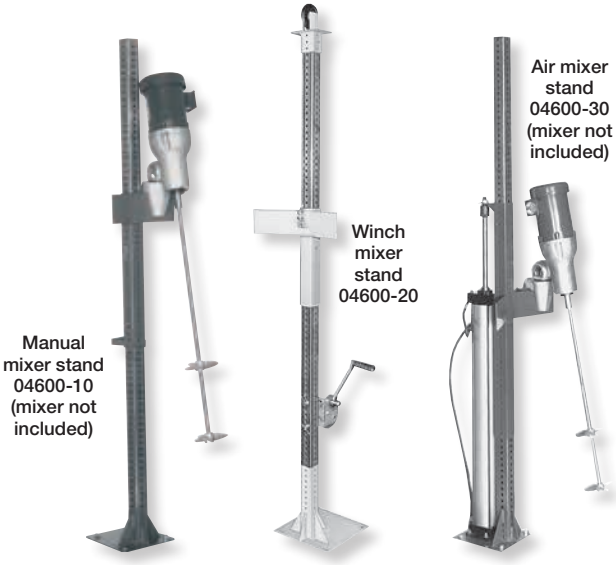
GY-50500-32 Air set for use with air powered mixers up to 1 hp. Includes regulator, filter, and lubricator

Industrial Mixer Lift Stands

Adjust height of mixers easily

These heavy-duty mixer stands are constructed from heavy-gauge steel and square steel tubing. Use with any of our clamp mount mixers. Stands allow you to easily raise or lower your mixer into drums or tanks up to 48" (1219 mm) in diameter. Each stand includes a 12" (305 mm) square base plate with four 9/16" (14 mm) mounting holes for permanent attachment to floors, dollies, etc.

Use the manual stand for lighter mixers. Move the mixer up or down in 1" (25 mm) increments; stand holds mixer in place with a clevis pin. The winch stand is ideal for heavier mixers. Raise the mixer to any height; winch holds the mixer in place. Choose the air-powered stand for your heaviest mixers. Air motor holds mixer in place at any level.



Movement description	Minimum height, in. (mm)	Maximum height, in. (mm)	Catalog number	Price
Manual	30 (762)	84 (2134)	GY-04600-10	
Winch	42 (1067)	82 (2083)	GY-04600-20	
Air	42 (1067)	82 (2083)	GY-04600-30	

Accessories for Industrial Mixers

Maximize your mixing efficiency

Impellers

All impellers for industrial mixers are constructed of 316 stainless steel.

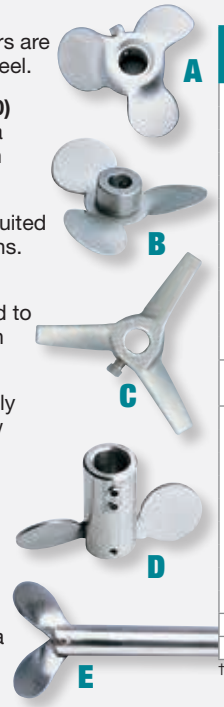
A. Axial Flow Impellers (A-100) have Superpitch® design with a 1.5 pitch ratio for greater batch mixing capabilities.

B. Marine Impellers are best suited for general-purpose applications.

C. High-Efficiency Axial Flow Impellers (A-310) are designed to create 50% more mixing action and a true axial flow pattern.

D. Folding Impeller fits perfectly into bung openings and narrow ports—folded diameter is 1⅝" (41 mm). Impeller opens fully during mixing.

E. Folding Impeller with integral shaft for bung-entering mixers. Shaft measures ⅝" dia x 32"L (16 mm dia x 813 mm L); 1" dia (25 mm dia) (folded) impeller.



Key	Catalog number	Overall dia, in. (mm)	Bore dia, in. (mm)	Price
A	GY-50350-00	2.7 (69)	⅝ (16)	
	GY-04317-90	3.6 (91)	⅝ (16)	
	GY-50350-04	4.5 (114)	⅝ (16)	
	GY-50350-06	5.2 (136)	⅝ (16)	
	GY-50350-08	6.0 (152)	⅝ (16)	
	GY-50350-10	7.7 (196)	⅝ (16)	
	GY-50350-20	6.9 (175)	¾ (19)	
	GY-50350-22	7.7 (196)	¾ (19)	
	GY-50350-24	8.9 (226)	¾ (19)	
	GY-50350-26	9.4 (239)	¾ (19)	
	GY-50350-28	10.0 (254)	¾ (19)	
	GY-50350-30	11.4 (290)	¾ (19)	
B	GY-50509-00	4.0 (102)	½ (13)	
	GY-50509-10†	4.0 (102)	⅝ (16)	
C	GY-50350-40	3.8 (96)	⅝ (16)	
	GY-50350-42	4.5 (114)	⅝ (16)	
	GY-50350-44	8.8 (224)	¾ (19)	
	GY-50350-46	10.0 (254)	¾ (19)	
	GY-50350-48	11.8 (300)	¾ (19)	
	GY-50350-82	7.6 (193)	¾ (19)	
	GY-50350-84	11.2 (284)	¾ (19)	
	GY-50350-86	12.8 (325)	¾ (19)	
	GY-50350-88	6.3 (160)	¾ (19)	
D	GY-50509-20	3.75 (95)	⅝ (16)	
E	GY-04317-80	3 (76)	⅝ (16)	

†304 stainless steel

Shafts

GY-04317-82 Shaft for tank-clamp mounting mixers, 316 SS. Measures ⅝" dia x 36"L (16 mm dia x 914 mm L)

GY-50350-52 Shaft; 316 SS, ⅝" dia x 48"L (16 mm dia x 1219 mm L)

GY-50350-55 Shaft; 316 SS, ¾" dia x 60"L (19 mm dia x 1524 mm L)

Air Lubricators and Filter/Regulators

Control air flow from 1 to 20 scfm. Remove 95 to 98% of liquid contaminants. Use light spindle oil (80 to 160 SSU) with the lubricator. Maximum working pressure is 150 psi; gauge reads to 160 psi.

GY-07042-70 Air lubricator, ¼" NPT(F)

GY-07042-75 Filter/regulator; 5 µm, ¼" NPT(F)

GY-07042-80 Replacement filter for 07042-75

GY-06349-32 Reducing bushing; ⅜" NPT(M) x ¼" NPT(F), nylon. Pack of 6

GY-06349-71 Nipple; ¼" NPT(M), nylon. Pack of 6

Drum/Barrel Heavy-Duty Mixers

Versatile mounting options meet your needs

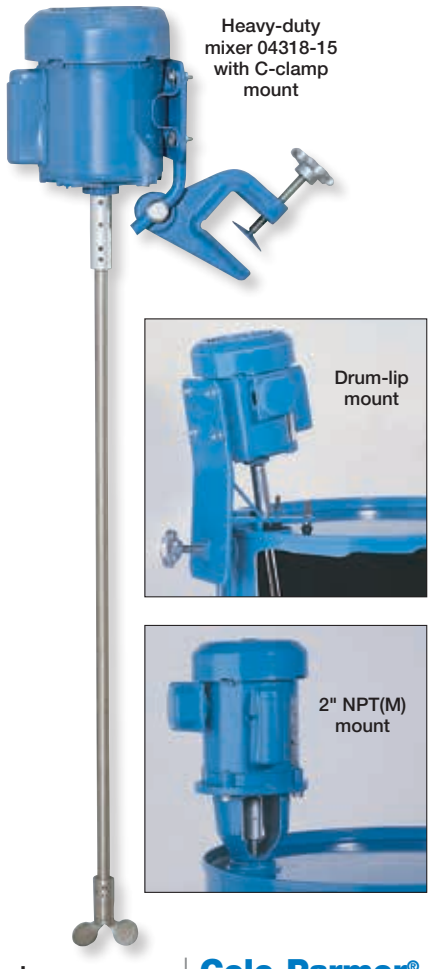
Adjustable hand screws secure the drum-lip model to the rim of 55-gallon (200 liter) drums. The C-clamp model mounts to any open head tank or drum and allows you to adjust the angle of the mixer. The 2" NPT(M) mount model screws directly into a standard 2" (51 mm) female bung to keep odors in and debris out.

Drum-lip and NPT(M) mount models include a folding impeller to pass through bung that attaches to the shaft with set screw and opens to a maximum diameter of 3¾" (95 mm) during operation. C-clamp models include a 4" (102 mm) fixed impeller, and are intended for use with an open tank. All mixers deliver maximum speed of 1725 rpm.

What's included: ⅝" (16 mm) dia, 316 SS shaft; 3¾" (95 mm) dia (max), 316 SS folding impeller (drum-lip and NPT(M) mount models); or 4" (102 mm) dia, 316 SS fixed impeller (C-clamp models).

Electric motors only

Description	hp	Max torque (in-oz)	Shaft length, in. (mm)	Power	Catalog number	Price
Electric motor mixers						
Drum-lip	¼	144	33⅛ (841)	115/230 VAC, 60 Hz	GY-04318-10	
C-clamp			32 (813)		GY-04318-15	
2" (51 mm) NPT(M)			29 (737)		GY-50500-00	
Drum lip	½	288	33⅛ (841)	115/230 VAC, 60 Hz	GY-04318-20	
C-clamp			32 (813)		GY-04318-25	
2" (51 mm) NPT(M)			29 (737)		GY-50500-10	
Air-drive motor mixers						
Drum-lip	½ at 80 psi (max pressure)	288	33⅛ (841)	Air	GY-04318-40	
C-clamp			35 (889)		GY-04318-50	
2" (51 mm) NPT(M)			29 (737)		GY-50500-20	



Accessories

GY-50509-20 Replacement folding propeller, 3¾" dia x ⅝" bore (95 mm dia x 16 mm bore) (max)

GY-50509-10 Replacement fixed propeller, 4" dia x ⅝" bore (102 mm dia x 16 mm bore)

Intermediate Bulk Container Tote Mixers

Save the time and trouble of draining fluids from their containers

- Low-profile gear drive mixers fit between stacked semi-bulk shipping containers
- Folding propeller fits through 2" (51 mm) opening—expands to 9" (229 mm) operating diameter
- Mount directly to a 2" NPT coupling, or order the optional cap mounting flange to use mixer on any plastic screw cap on bulk mixing containers. Power requirement for TEFC motors is 115 to 230 VAC, 60 Hz, single phase.

Mounting brackets are sold separately for containers from Clawson, Clean Earth, Hoover, Polyprocessing, Schultz, Snyder, Sonoco, and others. Contact your local representative with brand, name/style, and bulk container size for more information.

What's included: 316 stainless steel shaft and propeller.

Motor only

Speed (rpm)	hp	Torque in-oz (in-lb)	Motor type	Shaft, L x dia, in. (mm)	Catalog number	Price
Low-profile, right angle mixers with 2" NPT(M) thread mount						
1750	½	384 (24)	TEFC	29 x ¾ (737 x 19)	GY-50316-02	
0 to 2000	½	320 to 384 (20-24)	Air		GY-50316-06	
1750	¾	576 (36)	TEFC		GY-50316-10	
1750	1	768 (48)	TEFC		GY-50316-14	
Low-profile, right angle mixers requiring separate mounting hardware						
1750	½	384 (24)	TEFC	42 x ¾ (1067 x 19)	GY-50316-00	
0 to 2000	½	320 to 384 (20-24)	Air		GY-50316-04	
Screw- and bung-mount mixers—may use with cap mount flange listed below.						
350	½	976 (61)	TEFC	41 x ¾ (1040 x 20)	GY-50317-00	
350	¾	1968 (123)	TEFC		GY-50317-05	
350	1	2672 (167)	TEFC		GY-50317-10	
35 to 350	¾	1968 (123)	Air		GY-50317-30	

GY-50500-31 **Air set for use with air-powered mixers.** Includes regulator, filter, and lubricator
GY-50317-50 **Cap-mount flange** for screw- and bung-mountable mixers only

Drum/Barrel Top-to-Bottom Tube Mixers

Thoroughly mix contents without creating a vortex

- Mix the contents of 200 liter (55-gallon) drums without removing the drum lid
- 40" (1016 mm) long mixing tube fits into standard 2" (51 mm) bungs and generates a powerful top-to-bottom flow
- Forcefully expelled liquid resuspends and dissolves settled particles

Electric Motor Mixers have ¼-hp motors that maintain a 3450-rpm mixing speed and operate on 115 VAC, 60 Hz. Mixers feature an on/off switch on the motor for your convenience. Select either a totally enclosed, fan-cooled (TEFC) motor or CSA-approved explosion-proof motor (rated for Class 1, Division 1, Group D conditions).

Air-Drive Motor Mixer has a ¾-hp motor that generates speeds from 300 to 3000 rpm with 50 to 100 psi air input. Mixer includes flow regulator and muffler. We recommend using an air filter/regulator and lubricator—order from "Accessories" on page 531.

What's included: 40"L x 2" OD (1016 mm L x 51 mm OD) mixing tube with PTFE resin bearing at the top and base; 316 SS shaft; turbine and sleeve, and 10-ft (3-m), 3-wire cord with plug (electric mixers only).

Model 04316-24 only

Mixer type	Speed (rpm)	hp	Power	Catalog number	Price
TEFC motor	3450	¼	115 VAC, 60 Hz	GY-04316-20	
Explosion-proof motor				GY-04316-24	
Air-drive motor	300 to 3000	¾	Air	GY-04316-22	

Accessories for Laboratory Mixers

Maximize your mixing

A–F. Chucks, Collets, and Clamps

A. Keyless Chucks let you securely fasten the mixing shaft to the mixer without a key.

Fits motor shaft	Cat. no.	Price
¼" (6 mm)	GY-50401-60	
5⁄16" (8 mm)	GY-04552-90	
⅜" (10 mm)	GY-50401-62	

B. Adjustable Chuck accepts any mixing shaft from 1⁄16" to ⅜" (1.5 to 10 mm) dia.

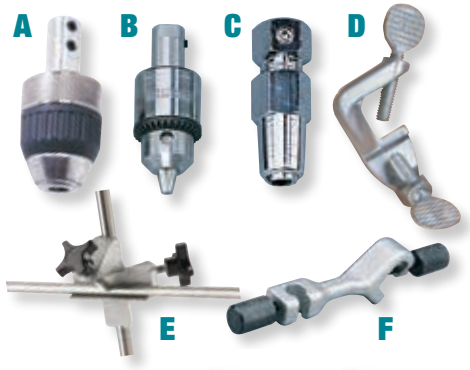
Fits motor shaft	Cat. no.	Price
½" (13 mm)	GY-04552-88	

C. Collets are ideal for high-speed motors.

Fits motor shaft	Cat. no.	Price
¼" (6 mm)	GY-04556-50	
5⁄16" (8 mm)	GY-04558-50	
⅜" (10 mm)	GY-04552-83	

D-F. Clamps ensure a sturdy connection between mixer and stands.

Key	Cat. no.	Price
D	GY-08041-22	
E	GY-04340-50	
F	GY-04560-24	



G–K. Stands

G. Stand. Corrosion resistant, painted enamel steel base; 303 SS support rod. Both legs accept an extra support rod. Stand footprint is 19¼"W x 11"D (48.9 x 27.9 cm).

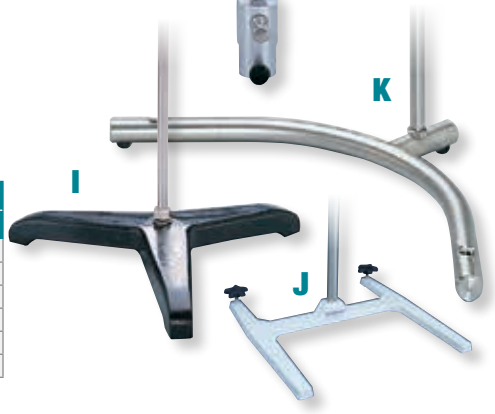
H. Spider Support Stands clamp onto the edges of pails, drums, and tanks. Model 50401-70 fits 5-gallon (20-liter) vessels; model 50401-71 fits 55-gallon (200-liter) vessels. Aluminum base with stainless steel support rod.

I. Mixer Stand has a cast-iron base and a stainless steel rod. Robust 14-lb base.

J. Mixer Safety Stand. Cast zinc-aluminum base has chemical-resistant epoxy coating.

K. 316 SS Mixer Stand accepts extra screw-in support rods in both legs.

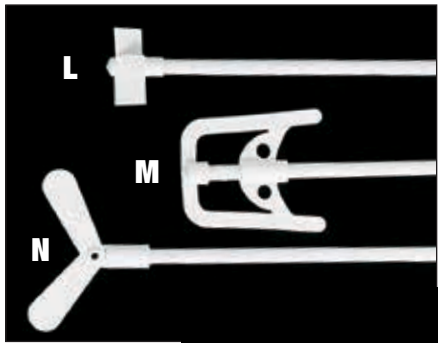
Key	Dimensions H x dia, in. (mm)	Catalog number	Price	Extra support rods	
				Cat. no.	Price
G	29 x ⅝ (737 x 16)	GY-04552-80		GY-04552-85	
H	24 x ⅝ (610 x 16)	GY-50401-70		—	—
H	24 x ⅝ (610 x 16)	GY-50401-71		—	—
I	24 x ⅝ (610 x 16)	GY-04546-00		—	—
J	28 x 1 (711 x 25)	GY-50001-93		—	—
K	29 x ⅝ (737 x 16)	GY-04344-00		GY-04344-10	

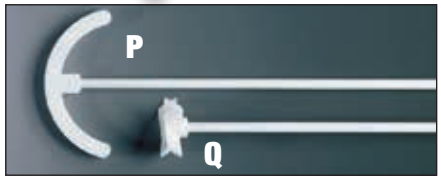


L–Q. Plastic Mixing Paddle Assemblies

Use these plastic paddle assemblies for mixing most acids and corrosive solutions. Plastic-coated steel assemblies provide better chemical resistance than stainless steel alone.

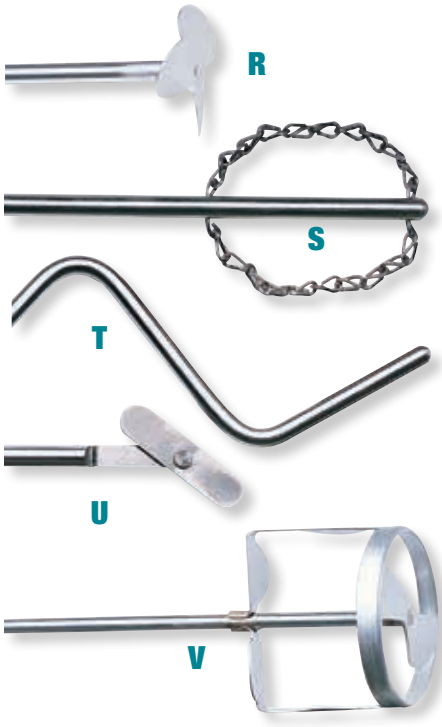
Material	Shaft, dia x L, in. (mm)	Max paddle diameter, in. (mm)	Catalog number	Price
L. Fixed, dual-blade paddle assembly—for mixing medium-viscosity liquids				
Polypropylene	5⁄16 x 13 13⁄16 (8 x 350)	1 5⁄8 (41)	GY-06367-10	
M. A-shaped, blade paddle assembly—for mixing highly viscous liquids				
Polypropylene	5⁄16 x 13 13⁄16 (8 x 350)	2 5⁄8 (67)	GY-06367-20	
N. Swing-out, dual-blade paddle assembly—for use in narrow-necked vessels				
Polypropylene	5⁄16 x 13 13⁄16 (8 x 350)	2 3⁄8 (60)	GY-06367-40	
	5⁄16 x 13 13⁄16 (8 x 350)	4 (102)	GY-06367-60	
O. Three-blade paddle assembly—for general-purpose mixing				
PTFE	5⁄16 x 12 (8 x 305)	2 (51)	GY-04449-06	
PTFE	5⁄16 x 18 (8 x 457)	2 (51)	GY-04449-10	
P. Anchor-style paddle assembly—for mixing medium- to high-viscosity liquids				
PTFE	⅜ x 22 (10 x 559)	4 (102)	GY-06367-70	
Q. Four-blade paddle assembly—for mixing low- to medium-viscosity liquids				
PTFE	⅜ x 22 1⁄8 (10 x 562)	2 3⁄8 (60)	GY-06367-80	





See next page for more...

Accessories for Laboratory Mixers (continued)



R-V. 303/304 Stainless Steel Mixing Paddle Assemblies

Use autoclavable paddle assemblies for general-purpose and high-temperature applications. The shaft and propeller are combined into one convenient mixing piece.

R. Three-Blade Paddle Assemblies are for general purpose mixing. All blades are pitched for low-viscosity, axial-flow mixing.

S. Chain Paddle Assemblies are for medium-viscosity liquids.

T. Zig-Zag Paddle Assemblies are for medium- to high-viscosity liquids.

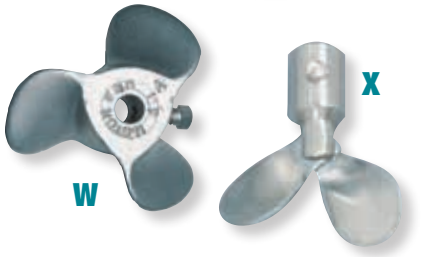
U Swivel Paddle Assemblies are for use in narrow-necked vessels.

V. High-Efficiency Paddle Assemblies are for highly viscous liquids or semisolids.

Key	Shaft, dia x L, in. (mm)	Paddle dia, in. (mm)	Catalog number	Price
R	¼ x 12 (6 x305) 5⁄16 x 12 (8 x 305) ¼ x 18 (6 x 457) 5⁄16 x 18 (8 x 457)	2 (51)	GY-04350-00 GY-04352-00 GY-04449-07 GY-04449-08	
S	¼ x 12 (6 x305) 5⁄16 x 12 (8 x 305)	3 (76)	GY-04354-00 GY-04356-00	
T	5⁄16 x 12 (8 x 305)	2½ (64)	GY-04358-00	
U	¼ x 12 (6 x305) 5⁄16 x 12 (8 x 305)	2 (51)	GY-04360-00 GY-04361-00	
V	¼ x 15 (6 x 381) ¼ x 30 (6 x 762) ⅜ x 21 (10 x 533) ½ x 40 (13 x 1016)	2⅝ (67) 2⅝ (67) 3¾ (95) 5 (127)	GY-04541-00 GY-04541-10 GY-04541-20 GY-04541-30	

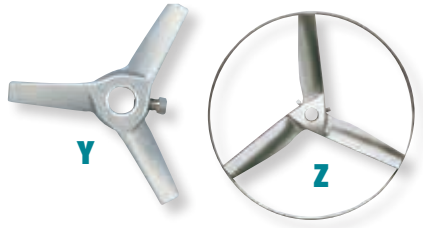
W–EE. 316 SS Impellers

Impellers are constructed of 316 stainless steel except high-flow impeller 04560-80. Order shafts separately on page 535.



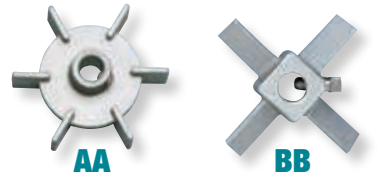
W. Axial Flow Impellers (A-100) have Superpitch® design with a 1.5 pitch ratio for greater mixing capabilities. Standard axial flow; use for wetting dry powders.

X. Two-Blade Folding Impellers are perfect for mixing in vessels with narrow ports. Folded diameter is 1 1⁄16" (18 mm) for the 2" (51 mm) model and 1" (25 mm) for the 3" (76 mm) model. Impellers open fully when mixing.



Y. High-Efficiency Axial Flow Impellers (A-310) have laser designed blades to develop 50% more mixing action for high-flow, low-shear mixing.

Z. High-Efficiency Axial Flow Impeller with Ring Guard (A-310) has all the features of "X" with added ring guard for safety and protection of mixing vessels.



AA. High-Shear Radial Flow Impellers (R-100) have paddles that produce added shear and moderate flow, in a radial direction.

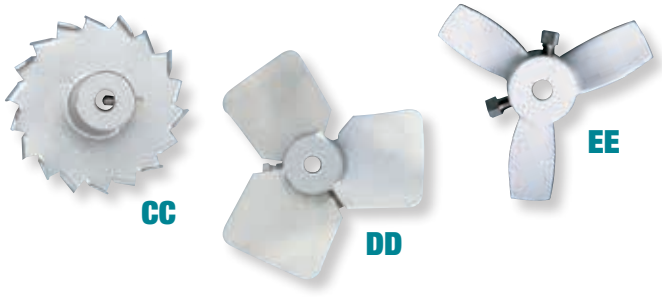
BB. Four-Blade Impellers (A-200) are turbine impellers that have a 45° pitch and produce a semi-axial flow.

CC. High-Shear Dispersing Impellers (R-500) create a cutting, tearing action to efficiently shred and disperse solids. Provide low flow with highest shear.

DD. Laser Designed High-Viscosity Impellers (A-320) improve blending while reducing power consumption—up to a 50% reduction over traditional 45° pitched blade paddles. Increased axial flow lets you locate the impeller farther from your tank bottom and enables use of shorter shafts.

EE. Laser Designed High-Flow Impeller (A-410) produces strong axial flow at very high flow efficiency. Ideal for transitional flow regime mixing. Made of glass-filled polypropylene with 316 SS set screws.

Key	Overall dia, in. (mm)	Bore dia, in. (mm)	Catalog number	Price
W	3.1 (79) 2.7 (68) 3.1 (79)	5⁄16 (8) ⅜ (10) ⅜ (10)	GY-04560-54 GY-04540-20 GY-04540-30	
X	2.0 (51) open 3.0 (76) open	5⁄16 (8) ⅜ (10)	GY-04543-00 GY-04561-66	
Y	2.5 (64) 3.8 (96) 4.5 (114) 2.5 (64) 3.4 (86)	5⁄16 (8) 5⁄16 (8) 5⁄16 (8) ⅜ (10) ⅜ (10)	GY-04560-25 GY-04560-22 GY-04560-23 GY-04560-50 GY-04540-25	
Z	2.5 (64)	5⁄16 (8)	GY-04561-64	
AA	1.5 (38) 2.0 (51) 3.0 (76)	5⁄16 (8)	GY-04560-57 GY-04560-30 GY-04560-56	
BB	3.0 (76) 2.0 (51) 2.0 (51)	5⁄16 (8) 5⁄16 (8) ⅜ (10)	GY-04560-60 GY-04561-60 GY-04560-61	
CC	3.0 (76) 2.0 (51)	5⁄16 (8) ⅜ (10)	GY-04561-62 GY-04560-58	
DD	5.0 (127) 5.0 (127)	5⁄16 (8) ⅜ (10)	GY-04560-62 GY-04560-63	
EE	3.9 (99)	5⁄16 (8)	GY-04560-80	



Mixer Testing Beads

Test for clumping and settling. These highly visible beads are calibrated to simulate particles in your fluid and let you easily visualize mixing patterns. Use both sizes simultaneously to determine effect on different-sized particles.

Color	Bead diameter	Cat. no.	Price
Red	4.5 mm	GY-04560-70	
Yellow	3 mm	GY-04560-71	

FF-NN. General-Purpose 316 SS Shafts, Extension Rods, Sleeves, and Propellers

FF. Shafts. All ⅜" (9.5 mm) dia shafts are machined (½" [13 mm] length) on one end to accept a 5⁄16" (8 mm) bore dia propeller. Made of passivated stainless steel.

Shaft dimensions, dia x L, in. (mm)	Catalog number	Price
5⁄16 x 12 (8 x 305)	GY-04552-20	
5⁄16 x 18 (8 x 457)	GY-04552-30	
⅜ x 12 (10 x 305)	GY-04552-25	
⅜ x 18 (10 x 457)	GY-04552-35	
⅜ x 24 (10 x 610)	GY-04552-00	
⅜ x 30 (10 x 762)	GY-04552-05	

Extension Rods and Sleeves increase shaft length. One sleeve is required to connect each extension rod to your shaft.

Length in. (mm)	¼" (6 mm) dia rods		5⁄16" (8 mm) dia rods	
	Cat. no.	Price	Cat. no.	Price
GG. Extension rods; include Allen wrench				
6 (152)	GY-04366-10		GY-04367-10	
12 (305)	GY-04366-20		GY-04552-20	
18 (457)	GY-04366-30		GY-04552-30	
HH. Sleeves; for use with extension rods above				
3 (76)	GY-04363-00		GY-04364-00	

II. Turbine Propellers are for airless mixing in deep containers. Made of 316 SS.

JJ. Two-Blade Propellers 1" (25 mm) dia with 5⁄16" (8-mm) bore.

KK. Three-Blade Propellers are for general-purpose mixing. Use alone or mount several on a single shaft for thorough agitation. Made of electropolished 316 SS.

LL. Lightweight Three-Blade Propellers have blades that twist to achieve the desired pitch.

MM. Folding Propeller is for use in narrow-mouth vessels. Folded diameter is 11⁄16" (18 mm).

NN. Ring Guard Propeller protects dip tubes or sensors in your mixing vessel.

Key	Overall dia, in. (mm)	Bore dia, in. (mm)	Catalog number	Price
II	2 (51)	5⁄16 (8)	GY-04552-10	
	2 (51)	⅜ (10)	GY-04552-15	
JJ	1 (25)	5⁄16 (8)	GY-04552-61	
KK	1 (25)	5⁄16 (8)	GY-04552-40	
	1½ (38)	5⁄16 (8)	GY-04552-45	
	2 (51)	5⁄16 (8)	GY-04552-50	
	2 (51)	⅜ 10)	GY-04552-55	
	3 (76)	5⁄16 (8)	GY-04552-60	
LL	2 (51)	¼ (6)	GY-04349-10	
	3½ (89)	5⁄16 (8)	GY-04349-00	
MM	2 (51) open	5⁄16 (8)	GY-04543-00	
NN	2 (51)	5⁄16 (8)	GY-04545-00	

OO-TT. High-Shear 304 SS Metric Shaft and Propellers

OO. Mixing Shaft for use with any 10 mm dia or adjustable ⅜" (10 mm) dia chuck. Measures 10 mm dia x 500 mm L. Threaded shaft end accepts only propellers "OO" through "TT".
GY-04370-02 Mixing shaft

PP. Turbine Propellers for airless mixing in deep containers. Threaded 10 mm d ia bore requires shaft 04370-02 (above).

QQ. Dispersion Blade, high-shear for tearing action, low flow. 5⁄16" (8-mm) bore.

RR. Dual-Blade Propellers for viscous fluids. Threaded 10 mm dia bore fits only shaft model 04370-02 (above).

SS. Four-Blade Propellers are for general purpose vortex mixing. Threaded 10 mm dia bore fits only shaft model 04370-02 (at left).

TT. Folding Propeller is for use in narrow-mouth vessels. Folded diameter is ¾" (18 mm). Threaded 10 mm dia bore fits only shaft model 04370-02 (at left).

Key	Overall dia, in. (mm)	Catalog number	Price
PP	2⅜ (60)	GY-04370-15	
	3 15⁄16 (100)	GY-04370-16	
QQ	1 5⁄16 (33)	GY-04552-62	
RR	3 15⁄16 (100)	GY-04370-18	
	1⅛ (28)	GY-04370-19	
SS	2 15⁄16 (75)	GY-04370-11	
	2⅜ (60)	GY-04370-12	
	1½ (40)	GY-04370-13	
TT	1¾ (45) [open]	GY-04370-14	

UU. Glass Paddle Assembly

Dual-blade paddle is ideal for corrosive or ultrapure liquids with a high viscosity. This one-piece molded glass paddle withstands high-temperature applications and is autoclavable. Rod measures 10 mm† dia x 19⅝"L (500 mm L). Paddle diameter is 2⅝" (67 mm). Use with flexible couplings, listed at right.

Description	Cat no.	Price
Glass paddle assembly	GY-04370-20	

†Paddle assembly can also be used with any adjustable ⅜" (10 mm) chuck.

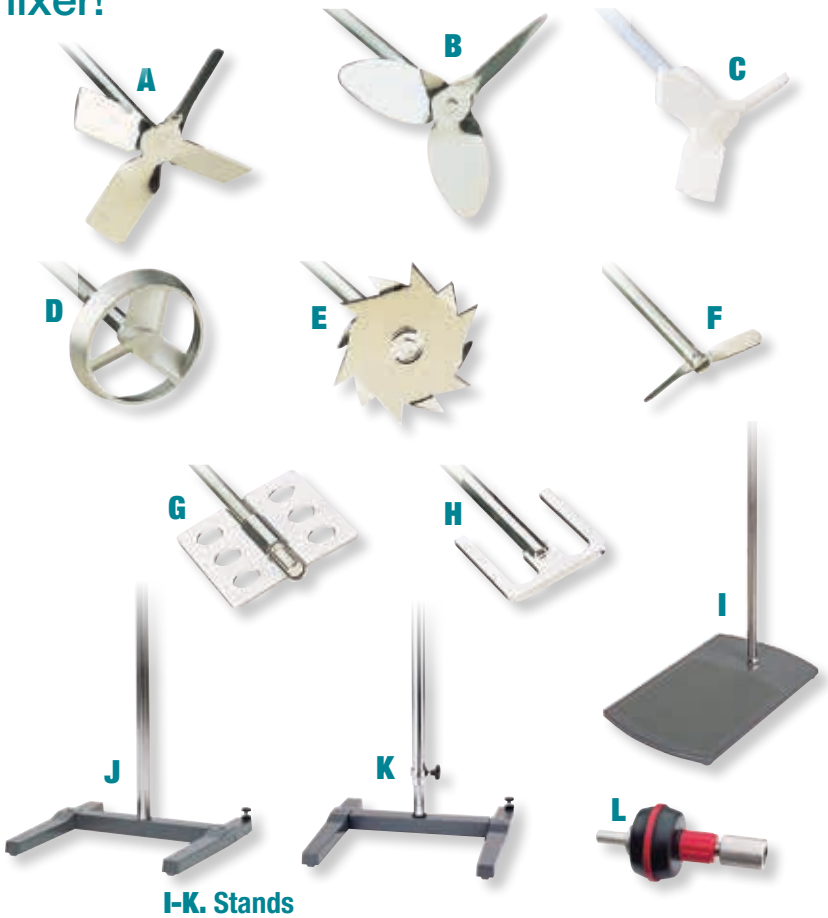
VV. Flexible Couplings

Flexible couplings are for use with glass mixing shafts. Rubber-bodied sleeve lets you make connections without a rubber hose—absorbs shock and reduces mixer noise and vibration. Couplings measure 102 mm long.

Fits mixing shaft OD	Fits motor shaft OD	Catalog number	Price
10 mm	¼" (6 mm)	GY-50401-50	
	5⁄16" (8 mm)	GY-50401-53	
	⅜" (10 mm)	GY-50401-51	
	½" (13 mm)	GY-50401-54	
19 mm	⅜" (10 mm)	GY-50401-52	
	½" (13 mm)	GY-50401-55	

Mixer Accessories for Digital Mixers on pages 525–528

Get the most out of your mixer!



A-H. Propellers and Stirrers

A. Four-Blade Propellers draw the material to be mixed from the top to the bottom. Create local shearing forces and axial flow in the vessel. Use at medium to high speeds.

B-C. Three-Blade Propellers draw material to be mixed from the top and the bottom while creating minimum shearing forces. Use at medium to high speed.

D. Turbine Propellers are used for drawing the material to be mixed from above while generating axial flow within the vessel. Minimum danger of injury when contact is made with the vessel. Create minimal shearing forces. Use at medium to high speeds.

E. Dissolver Propellers are for drawing the material to be mixed from the top and the bottom while creating high turbulence and high shearing forces for particle reduction. Use at medium to high speeds.

F. Folding Propellers are two-bladed, and the blades open with increasing speed, perfect for stirring in round vessels with narrow necks. Medium to high speeds are required.

G. Paddle Stirrers create tangential flow, minimum turbulence, good heat exchange, and gentle treatment of product. Use at low to medium speeds.

H. Anchor Stirrers create tangential flow, high shearing rate at edges, minimum deposits on the vessel wall, making them great for polymer reactions and even distribution of high mineral contents in liquids. Ideal for medium to highly viscous fluids. Use at low speeds.

Key	Material	Shaft, dia x L, in. (mm)	Paddle dia, in. (mm)	Catalog number	Price
A	316 SS	11/32 x 13¾ (8 x 350)	2 (50)	GY-50703-25	
	316 SS	11/32 x 21¼ (8 x 540)	4 (102)	GY-50703-26	
B	316 SS	11/32 x 13¾ (8 x 350)	1¾ (45)	GY-50703-30	
	316 SS	11/32 x 13¾ (8 x 350)	2 7/32 (56)	GY-50703-31	
	316 SS	13/32 x 21 21/32 (10 x 550)	5½ (140)	GY-50703-32	
	316 SS	13/32 x 31½ (10 x 800)	5½ (140)	GY-50703-33	
C	PTFE-coated SS	11/32 x 13¾ (8 x 350)	3 (75)	GY-50703-34	
D	316 SS	11/32 x 13¾ (8 x 350)	1 7/32 (31)	GY-50703-35	
	316 SS	11/32 x 13¾ (8 x 350)	2 (50)	GY-50703-36	
	316 SS	13/32 x 15¾ (10 x 400)	2¾ (70)	GY-50703-37	
E	316 SS	11/32 x 13¾ (8 x 350)	3 7/32 (83)	GY-50703-40	
	316 SS	13/32 x 13¾ (10 x 350)	4 (102)	GY-50703-41	
	316 SS	11/32 x 13¾ (8 x 350)	2 21/32 (68)	GY-50703-42	
F	316 SS	11/32 x 13¾ (8 x 350)	19/32 to 2 13/32 (15 to 61)	GY-50703-45	
	316 SS	11/32 x 21 21/32 (8 x 550)	1 to 4 (24 to 100)	GY-50703-46	
G	316 SS	11/32 x 21 21/32 (8 x 550)	2¾ (70)	GY-50703-51	
	316 SS	13/32 x 21 21/32 (10 x 550)	5⅞ (150)	GY-50703-52	
H	316 SS	11/32 x 13¾ (8 x 350)	1¾ (45)	GY-50703-55	
	316 SS	11/32 x 13¾ (8 x 350)	3½ (90)	GY-50703-56	
	316 SS	13/32 x 21 21/32 (10 x 550)	5⅞ (150)	GY-50703-58	

I-K. Stands

I. Mixer Plate Stand comes with slip-resistant foil and a support rod with diameter of 5/8" (16 mm).

Key	Height, in. (mm)	Catalog number	Price
I	22 (560)	GY-50703-90	
	31½ (800)	GY-50703-91	
	39 13/32 (1000)	GY-50703-92	

J-K. Mixer H-Stands. Particularly stable stand with "H"-shaped base prevents the stand from tipping backwards. Model K is spring loaded to allow for height adjustment from 24 13/32" to 39¾" (620 mm to 1010 mm).

Key	Height, in. (mm)	Catalog number	Price
J	39¾ (1010)	GY-50703-93	
K	24 13/32 to 39¾ (620 to 1010)	GY-50703-94	

GY-50703-70 **Mixer strap clamp,** fits vessels from 1½" to 11¾" (40 to 300 mm)

GY-50703-71 **Mixer strap clamp with Boss head clamps,** fits vessels from 1½" to 11¾" (40 to 300 mm)

GY-50703-96 **Boss head clamp,** clamping range ¼" to 5/8" (6 to 16 mm)

GY-50703-97 **Boss head clamp,** fits stands 1" to 1½" (25 to 36 mm) dia and accommodates mounting rods 3/16" to ¾" (5 to 21 mm) dia

GY-50703-98 **Boss head clamp,** fits stands 1¼" (34 mm) dia and accessory rods 21/32" (16 mm) dia

L. Mixer Flexible Coupling

Required for stirring tasks utilizing glass stirring rods, compensating for any structural variances. Clamping range is ¼" to 3/8" (6 to 10 mm).

Key	Description	Catalog number	Price
L	Mixer flexible coupling	GY-50703-75	

In-Line Static Mixers

Mix fluids as you pump them through a pipe line

- These economical, long-lasting, in-line mixers are more convenient than most motorized mixers
- In-line mixers prevent overmixing and undermixing, and resist fouling in your pipes or tubes
- Virtually maintenance free and need no spare parts

In-line mixers are efficient and can withstand large pressure changes—up to 1500 psi with smallest sizes. Mixing elements in pipe and tube mixers are securely attached to the mixer walls, so internal pressure changes cannot collapse elements and stop flow.

Teky's Tips

With in-line static mixers, the mixer does not move through the fluid—the fluid moves through the mixer. As this illustration shows, mixing takes place around the centerline and in the direction of flow.

1. Pump pushes a stream of liquid into the mixer.
2. The stream of liquid is then split and forced to the opposite outside walls.
3. A vortex is created along the centerline axis of the pipe.
4. The vortex is sheared and the process recurs with the opposite rotation. This clockwise/counterclockwise motion mixes the liquid to ensure a homogeneous end product.

Reynolds equation: $Re = \frac{3157QS}{\mu D}$

Re = Reynolds number
- Q = Flow rate (gallons per minute)
- S = Specific gravity
- μ = Viscosity (centipoise)
- D = Inside pipe diameter (inches)

Reynolds number	Elements required
>1000	6
500 to 1000	12

Note: If the Reynolds number is less than 500, contact your local representative for assistance.

Disposable In-Line Mixers

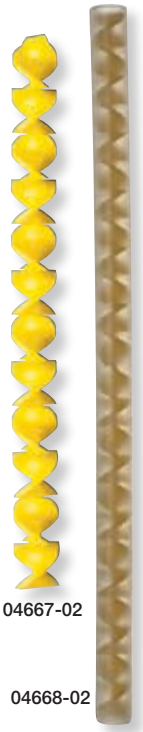
Ideal for your one-time mixing applications, these disposable polyacetal mixers are available unmounted or mounted in polypropylene tubing. Adjust unmounted mixer length to get optimal mixing action—shorten by cutting or extend by using more than one mixer.

Unmounted Mixers can be used with any standard tubing having the same tubing ID as the element OD given in the table. They work well with flexible tubing.

Element OD/ tubing ID, in. (mm)	Number of elements	Mixer length, in. (mm)	Catalog number	Price/ pk of 10
3/16 (5)	12	2⅜ (60)	GY-04667-02	
	24	4⅝ (118)	GY-04667-12	
¼ (6)	12	3 (76)	GY-04667-04	
	24	6 (152)	GY-04667-14	
⅜ (10)	12	4¾ (121)	GY-04667-06	
	24	9½ (241)	GY-04667-16	
½ (13)	12	5 (127)	GY-04667-08	
	24	10 (254)	GY-04667-18	

Mounted Mixers can be used with any compression fitting with the same tubing OD.

Tubing OD, in. (mm)	Number of elements	Mixer length, in. (mm)	Catalog number	Price/ pk of 10
5/16 (8)	12	3½ (89)	GY-04668-02	
	24	5¾ (146)	GY-04668-12	
⅜ (10)	12	4¼ (108)	GY-04668-04	
	24	7¼ (184)	GY-04668-14	
½ (13)	12	6½ (165)	GY-04668-06	
	24	11¼ (286)	GY-04668-16	
⅝ (16)	12	8½ (216)	GY-04668-08	
	24	14½ (368)	GY-04668-18	

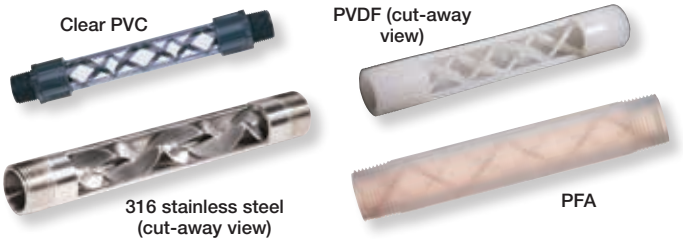


04667-02

04668-02

Pipe Mixers

Install these mixers directly into your process line to achieve a 100% mixed output—mixing elements are welded inside the pipe. All mixers have threaded ends. Choose PVC, 316 stainless steel, PVDF, or PFA. The clear PVC mixers are ideal for a visual check of your mixing processes. Models with removable elements are available on request—contact your local representative for details.



NPT(M)	Pipe ID, in. (mm)	No. of elements	Mixer length, in. (mm)	Catalog number	Price
Clear PVC schedule 40 pipe mixers					
⅜"	0.473 (12)	6	6½ (165)	GY-04669-85	
		12	11 (279)	GY-04669-87	
½"	0.602 (15.3)	6	7 (178)	GY-04669-89	
		12	12 (305)	GY-04669-91	
¾"	0.804 (20.4)	6	9 (229)	GY-04669-92	
		12	15 (381)	GY-04669-93	
1"	1.029 (26.1)	6	11 (279)	GY-04669-94	
		12	18 (457)	GY-04669-95	
1½"	1.590 (40.4)	6	15 (381)	GY-04669-96	
		12	28 (711)	GY-04669-97	
2"	2.047 (52)	6	19 (483)	GY-04669-98	
		12	35 (889)	GY-04669-99	
Standard PVC schedule 80 pipe mixers					
½"	0.62 (15.7)	6	5 (127)	GY-04669-00	
		12	10 (254)	GY-04669-06	
¾"	0.742 (18.8)	6	7 (178)	GY-04669-02	
		12	14 (356)	GY-04669-08	
"	0.957 (243)	6	10 (254)	GY-04669-04	
		12	19 (483)	GY-04669-10	
1½"	1.50 (38.1)	6	15 (381)	GY-04669-78	
		12	26 (660)	GY-04669-79	
2"	1.939 (49.2)	6	18 (457)	GY-04669-83	
		12	33 (838)	GY-04669-81	
316 stainless steel schedule 40 pipe mixers					
¼"	0.364 (9.2)	6	3 (76.2)	GY-04669-05	
		12	6 (152)	GY-04669-07	
⅜"	0.493 (12.5)	6	4 (101)	GY-04669-09	
		12	8 (203)	GY-04669-11	
½"	0.62 (15.7)	6	5 (127)	GY-04669-12	
		12	10 (254)	GY-04669-18	
¾"	0.82 (20.8)	6	7 (178)	GY-04669-14	
		12	13 (330)	GY-04669-20	
1"	1.05 (26.7)	6	9 (229)	GY-04669-16	
		12	17 (439)	GY-04669-22	
1½"	1.61 (40.9)	6	13 (330)	GY-04669-23	
		12	26 (660)	GY-04669-24	
2"	2.067 (52.5)	6	17 (432)	GY-04669-25	
		12	33 (838)	GY-04669-26	
PVDF schedule 80 pipe mixers					
½"	0.546 (13.9)	6	5 (127)	GY-04669-28	
		12	9 (229)	GY-04669-29	
¾"	0.742 (18.8)	6	6 (152)	GY-04669-30	
		12	12 (305)	GY-04669-34	
1"	0.957 (243)	6	8 (203)	GY-04669-32	
		12	15 (381)	GY-04669-36	
1½"	1.50 (38.1)	6	12 (305)	GY-04669-38	
		12	24 (610)	GY-04669-40	
2"	1.939 (49.2)	6	16 (406)	GY-04669-42	
		12	31 (787)	GY-04669-44	
PFA schedule 80 pipe mixers					
½"	0.546 (13.9)	6	5 (127)	GY-04668-20	
		12	9 (229)	GY-04668-22	
¾"	0.742 (18.8)	6	6 (152)	GY-04668-24	
		12	12 (305)	GY-04668-26	
1	0.957 (24.3)	6	8 (203)	GY-04668-27	
		12	15 (381)	GY-04668-29	

In-Line Static Mixers (continued)

PVC Mixers

PVC Mixers with Injection Port are designed for blending light-viscosity chemicals into a water stream. Each mixer is constructed of schedule 80 PVC and has four fixed mixing elements. Connections are 150 lb raised face flanged ends. **Note:** these mixers are designed for high flow rates. They use four elements instead of six to minimize pressure loss.

PVC In-Line Mixers without Injection Port are designed for blending light-viscosity treatment chemicals into a water stream. Each mixer is constructed of schedule 80 PVC and has four fixed, solid PVC mixing elements. Maximum working pressure is 150 psi. Connections are 150 lb raised face flanged ends.

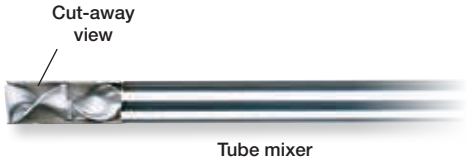
PVC mixer with injection port 04668-66

PVC mixer without injection port 04668-63

Line size, in. (mm)	Injection port NPT(F)	Mixer length, in. (mm)	Flow range (GPM)	Pressure loss (psi)	Catalog number	Price
PVC mixers with injection port						
1 (25)	½"	12 (305)	5 to 15	0.75 to 6.7	GY-04668-60	
1½ (38)	½"	16 (406)	15 to 35	1.1 to 6.2	GY-04668-62	
2 (51)	¾"	19 (483)	25 to 60	1.1 to 6.2	GY-04668-64	
2½ (64)	¾"	22 (559)	35 to 100	0.8 to 6.4	GY-04668-66	
3 (76)	¾"	27 (686)	60 to 150	0.9 to 5.7	GY-04668-68	
4 (102)	¾"	32 (813)	90 to 250	0.7 to 5.3	GY-04668-70	
6 (152)	1"	41 (1041)	175 to 500	0.6 to 4.8	GY-04668-72	
PVC mixers without injection port						
1 (25)	—	7 (178)	5 to 15	0.75 to 6.7	GY-04668-61	
1½ (38)	—	10 (254)	15 to 35	1.1 to 6.2	GY-04668-63	
2 (51)	—	12 (305)	25 to 60	1.1 to 6.2	GY-04668-65	
2½ (64)	—	14 (356)	35 to 100	0.8 to 6.4	GY-04668-67	
3 (76)	—	18 (457)	60 to 150	0.9 to 5.7	GY-04668-69	
4 (102)	—	23 (584)	90 to 250	0.7 to 5.3	GY-04668-71	
6 (152)	—	33 (836)	175 to 500	0.6 to 4.8	GY-04668-73	

Tube Mixers

These mixers consist of a series of fixed right- and left-hand elements. Tube and mixing elements are made of 316 stainless steel—ideal for mixing high-viscosity fluids such as epoxies. Mixers have plain ends and accept standard tube fittings (see pages 311–315 for compression fittings).



Tube mixer

Tube OD, in. (mm)	No. of elements	Tube ID, in. (mm)	Mixer length, in. (mm)	Viscosity (cps)	Catalog number	Price
3/16 (5)	17	0.13 (3.3)	4⅞ (124)	0 to 200	GY-04669-50	
	21		6 (152)	0 to 200	GY-04669-52	
	27		7½ (190)	200 to 750	GY-04669-54	
¼ (6)	21	0.19 (4.8)	7 (178)	0 to 200	GY-04669-56	
	27		9¼ (235)	200 to 750	GY-04669-58	
	34		11½ (292)	750 and up	GY-04669-60	
⅜ (10)	21	0.32 (8.1)	11 (279)	0 to 200	GY-04669-62	
	27		14 (356)	200 to 750	GY-04669-64	
	32		17 (438)	750 and up	GY-04669-66	
½ (13)	15	0.43 (10.9)	11⅞ (302)	0 to 200	GY-04669-68	
	21		16⅜ (416)	0 to 200	GY-04669-70	
	32		24¾ (629)	750 and up	GY-04669-72	

Sanitary Mixers

These mixers are made of 316 stainless steel for low- or high-viscosity food processing. All internal surfaces are ground and polished to a sanitary (#4) finish and have removable elements for cleaning and visual inspection.

Blade Design Mixers are best for low viscosity (<1500 cps) fluids. The faster the fluid moves, the faster (and more thorough) the mixing. Great for mixing products into water or water-like fluids.

Helical Design Mixers are best for high-viscosity (>1500 cps) fluids, and when fluids are moving more slowly through the mixer. Excellent for combining products into fluids such as yogurt, mayonnaise, and ice cream.

Removable mixing element for thorough cleaning.

Tri-Clamp® size, in. (mm)	Number of elements	Pipe ID, in. (mm)	Helical design			Blade design		
			Catalog number	Length, in. (mm)	Price	Catalog number	Length, in. (mm)	Price
½ (13)	6	0.37	GY-04668-75	5½ (140)		GY-04668-28	4 (102)	
	12	(9.4)	GY-04668-76	10½ (267)		GY-04668-30	8 (203)	
¾ (19)	6	0.62	GY-04668-77	7 (178)		GY-04668-32	6½ (165)	
	12	(15.7)	GY-04668-78	13 (330)		GY-04668-34	11 (279)	
1 (25)	6	0.87	GY-04668-79	9 (229)		GY-04668-36	7 (178)	
	12	(22.1)	GY-04668-80	18 (457)		GY-04668-38	14 (356)	
1½ (38)	6	1.37	GY-04668-81	14 (356)		GY-04668-40	12 (305)	
	12	(34.8)	GY-04668-82	27 (686)		GY-04668-42	24 (610)	
2 (51)	6	1.87	GY-04668-83	18 (457)		GY-04668-44	15 (381)	
	12	(47.5)	GY-04668-84	36 (914)		GY-04668-46	30 (762)	

Accessories

GY-30800-74 **Sanitary clamp** for ½" (13 mm) or ¾" (19 mm) sizes

GY-30800-75 **Sanitary clamp** for 1" (25 mm) or 1½" (38 mm) sizes

GY-30800-76 **Sanitary clamp** for 2" (51 mm) size