



MIXERS



Sizing Your Mixing System

In order to ensure successful operation of mixer in a specific application, it is necessary to select the proper size mixer, operating speed and propeller. Our catalog offers numerous possibilities. Therefore, we have prepared a series of reference tables, as guides, to assist you in your selection process.

How To Use Our Tables

The models shown represent a minimum recommendation, and obviously, a mixer rated for higher torque values or viscosities can also be selected. Our tables are composed to reflect 80% of the individual unit's peak capacity. Find the viscosity you are mixing along the left-hand side of the charts; find the volume along the top. The model numbers designated in the box where the two parameters intersect represent our base recommendations. Depending on your exact needs, several possibilities exist.

Laboratory Mixers

For Smaller Volumes (Less than 1 Gallon)

Any of our Laboratory Mixers will provide superior mixing in volumes less than 1 gallon, and depending upon the model selected, operating speed and prop selection, will mix viscosities up to 2000 centipoise and higher. For processing fluids with viscosities less than 100 cps, all of our direct drive, high speed mixers will provide satisfactory results. For viscosities above 100 cps we generally recommend a high torque, lower speed mixer.

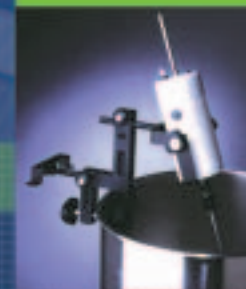
For Larger Volumes

Use the table below to select the appropriate model.

Typical Materials to be Mixed		Viscosity (cps)	Vessel Volume Range (gallons)				
			Less than 1 gallon	1-5	6-10	11-25	26-35
Water Sulfuric Kerosene	Citric acid Blood Toluene	1.0	All mixers	All mixers	All mixers	750-0240 745-5034	750-0240 745-5034
SAE 10 Oil SAE 20 Oil	Starch solution Olive Oil	100	All mixers	700-5410 750-0240 745-5034	750-5410 750-0230 745-5033	750-0230 745-5033	
SAE 40 Oil Cough syrup	Spar varnish	250	700-5410 750-0240 745-5034	700-5410 750-0230 745-5033	750-0230 745-5033	750-0230 745-5033	
Latex paint SAE 50 Oil	Glucose	500	700-5410 750-0230 745-5033	700-5410 750-0230	750-0220 745-5032		
Caster oil SAE 70 Oil	Yogurt Glycerine	1000	750-5410 750-0230	750-0220 745-5032			
Catsup White glue	Molasses (A)	2000	750-0210 50003-10				

Sizing Guide - Guide to Selecting Proper Mixing Impeller

Viscosity (centipoise)	Type of Material (ambient temp)	Type of impeller
1.0 cps	Water, Kerosene, Gasoline, Blood, Citric Acid, Sulfuric Acid	Propellers, Pitched Blade Turbine
100 cps	SAE 10 Oil, SAE 20 Oil, Starch Solution, Olive Oil	Propellers, Pitched Blade Turbine
250 cps	SAE 40 Oil, Cough Syrup, Spar Varnish	Propellers, Pitched Blade Turbine, Disc Radial Turbine
500 cps	Glucose, Latex Paint, SAE 50 Oil, Peanut/corn Oil	Propeller, Disc Blade Turbine, Chain Paddle
1000 cps	Castor Oil, Catsup, Glycerine, Yogurt, SAE 70 Oil	Disc Blade Turbine, Chain Paddle, Zig-Zag Paddle



Mixing Accessories

316 Stainless Steel Paddle Assemblies

Catalog No.	Description	Shaft Dimensions	Use with Mixer Models
4352-00	Three-bladed paddles	5/16" dia. x 10"L	700-5400, -5410
4449-08	(For general-purpose stirring; 2" max paddle diameter)	5/16" dia. x 18"L	
4356-00	Chain paddles (For medium-viscosity fluids; Approx. 3" max paddle diameter)	5/16" dia. x 10"L	700-5400, -5410
4358-00	Zig-zag paddles (For medium to high-viscosity fluids; Approx. 2-1/2" max paddle diameter)	5/16" dia. x 10"L	700-5400, -5410
4361-00	Swivel paddles (For use in narrow-necked vessels; Approx. 2" max paddle diameter)	5/16" dia. x 10"L	700-5400, -5410
4541-20	High-efficiency paddle assembly (For mixing highly viscous liquids and semisolids; Approx. 3-3/4" max paddle diameter)	3/8" dia. x 21"L	All

316 Stainless Steel Propellers

Catalog No.	Description	Bore Diameter	Paddle Diameter
4553-60	Three-bladed propellers	5/16"	1"
4553-62	(For general-purpose stirring. Use alone	5/16"	1-1/2"
4553-64	or mount several on a single shaft	5/16"	2"
4553-65	for thorough agitation)	3/8"	2"
4553-68		5/16"	3"
4543-00	Folding propellers (For use in narrow-necked vessels)	5/16"	2" max (11/16" folded)
4544-00	Turbine propellers	5/16"	2"
4544-10	(For airless stirring in deep containers.	3/8"	
4545-00	Ring guard propellers (Protects dip tubes or sensors located in your stirring vessel)	5/16"	2"

316 Stainless Steel Shafts

Catalog No.	Description	Shaft Dimensions	Use with Mixer Models
4553-50	Stirring shafts	5/16" dia. x 12" L	700-5400, -5410
4553-52	(The 3/8" diameter shafts are machined	3/8" dia. x 12" L	All
4553-55	on one end to also accept	3/8" dia. x 18" L	700-5400, -5410
4553-57	5/16"-bore diameter propellers.)	3/8" dia. x 18" L	All
4537-10		3/8" dia. x 24" L	All
4538-10		3/8" dia. x 30" L	All

Clamps and Stands

750-0180 tank clamp. Mount your mixing system directly onto an open top tank or container. Clamp secures a mixer head and the 750-0182 pivot mount controller support sold below. Mounts to containers with wall thicknesses up to 1-1/2".

Controller Supports

Controller supports let you mount your controller adjacent to the mixer head. Use the dual rod clamp (included in the 745-5090) to secure your controller to the 704-3440 support stand. Or mount our 750-0182 pivot mount support directly to the 750-0180 tank clamp.

745-5090 support platform, rack mount controller adjacent to the mixer head.

750-0182 pivot mount controller support, bolts controller to the support for additional security. Features a hinged rod – lets you adjust controller angle for easy access.

Support Stand and Clamps

704-3440 support stand, has a corrosion-resistant electro-polished cast steel base and a 303 stainless steel rod measuring 5/8" diameter x 28" high. Order dual rod clamps to support mixer heads. Both legs of base accept extra screw-in support rod.

704-3450 Extra screw-in support rod.

4560-24 Heavy duty dual rod clamp, 316 stainless steel construction.

8047-20 aluminum construction dual rod clamp.

Stir-Pak Mixers



Product Description General-Purpose Mixer

- Mixes low-viscosity fluids at high speeds – up to 10,000 rpm

Use our general-purpose mixer for your routine, low-viscosity, laboratory mixing. This direct-drive mixer delivers speeds from 500 to 10,000 rpm. (NOTE: Not recommended for fuming corrosive materials – use 700-5410 dual-shaft mixer instead.)

Fuse protected, universal type motor has a compact speed controller conveniently attached. This solid-state controller provides exact speed setting within its 20:1 speed adjustment range. Potentiometer controls both on/off and variable speed settings for single direction mixing.

Mixer accepts a 5/16 to 3/8" dia. stirring shaft. Mixer comes with shaft; propeller*; 6" L mounting rod; a Jacobs-type keyless hand chuck; and a six foot, three-wire cord with grounded plug.

* 12" L x 3/8" dia stainless steel shaft and 1-3/8" dia stainless steel propeller.

Dual-Shaft Mixer

- Direct-drive shaft offers high-speeds from 50 to 5000 rpm
- Gear-reduction shaft provides high 140 in-oz torque from 3 to 250 rpm

Our versatile, dual-shaft mixer allows both high-speed and high-torque mixing either small or large volumes. Use the direct-drive shaft for your high-speed, low-viscosity mixing, or just switch to the gear-reduction shaft for your high-viscosity mixing needs.

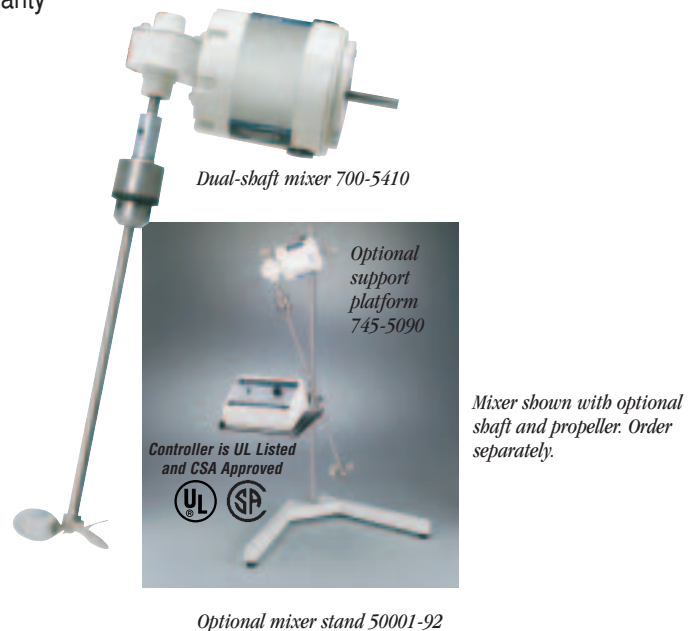
Rugged, permanent-magnet TENV gear motor has permanently lubricated ball bearings. Gear reduction ratio is 20:1.

ACCESSORIES

Model #	Description	Voltage
1578-05	Transformer	230 VAC to 115 VAC

High-Quality, Variable-Speed Mixers

- Full-range performance characteristics
- Convenient, general-purpose and dual-shaft mixers accept a wide variety of propellers, shafts, and other accessories.
- Two-year warranty



Solid-state controller offers precise speed control with a 100:1 adjustment range. Separate forward/off/reversing switch and speed dial provide repeatable speed settings. Controller maintains a constant speed under changing loads (critical for materials that change viscosity and mix progresses). A six foot cord connects the motor and controller; locate the controller away from corrosive spills or splashes.

Accepts 5/16 to 3/8" stirring shaft; order shaft, propeller, and other accessories separately. Mixer comes supplied with a 6" L mounting rod; a Jacobs-type keyless hand chuck; and six foot, three-wire cord with grounded plug.

ORDERING INFORMATION

Model #	700-5400	700-5410
Type	General-Purpose Mixer	Dual-Shaft Mixer
Speed Range	500-10,000	50-5000 (Direct-drive shaft) 3-250 (Gear-shaft)
Max Torque	9.5 in-oz (up to 5000rpm)	7 in-oz (Direct-drive shaft) 140 in-oz (Gear-shaft)
Motor	1/20 hp	1/25 hp
Shaft Size	5/16" to 3/8"	5/16" to 3/8"
Dimensions	5-5/8"W x 4-1/4"H x 3-3/8"D	Motor: 5-3/4"H x 3-1/2" dia Controller: 7"W x 3-3/16"H x 4-7/8"D
Power	115 VAC, 50/60 Hz	115 VAC, 50/60 Hz
Shipping Weight	5 lbs. (2.3 kg)	7 lbs. (3.2 kg)

Stir-Pak Mixer Systems



We've made the Barnant Heavy-duty mixer even better! Our modular Heavy-duty mixer system allows you the flexibility to create the best system for your mixing applications. System components are sold separately so you can tailor your system to meet your mixing needs. Simply start with a solid-state speed controller, add one more of the four mixing heads depending on your speed and torque requirements, and select a shaft and propeller depending on your vessel and fluid. For our full line of shafts and propellers, see page 207.

Speed Controller

Solid-state controller offers precise speed control with a 100:1 adjustment range. A separate "forward / off / reverse" switch works independently from the speed control dial – allowing you to repeat mixer speed settings from one run to the next. An LED indicates when power is on. Motor speed is maintained within 10% despite changes in line power or torque load conditions. Speed stability is critical for materials that change viscosity as mixing progresses.

Remote controller is connected to the mixer head via a six foot three-wire cord – keeps electronics away from hazardous spills or splashes. Controller measures 7"W x 3-3/16"H x 4-7/8"D. Choose a controller depending on your power supply; each includes a six foot power cord (with grounded plug for 115 VAC model).

Mixer Heads

These rugged mixer heads feature TENV, permanent magnet DC motors with permanently lubricated ball bearing construction. Choose from four models depending on your desired speed range.

The low-speed, high-torque models feature a Jacobs-type chuck that accepts mixing shafts from 5/8" to 3/8" dia.

The high-speed, low-torque models incorporate a hollow through shaft and a precision, stainless steel hand-tightened collet. This design lets you quickly position the mixing propeller at any depth within the container – without moving the mixer head. Plus, it minimizes shaft "wobble" at higher speeds or with longer shaft lengths.

All mixer heads are equipped with an integral adjustable-tilt mounting assembly; permits the rotation of the mixer head from 0° to 30° for proper placement of shaft and propeller. Heads measure approximately 11-1/2"H x 3-5/8" dia. Each model comes supplied with appropriate chuck and six foot, three-wire cord with grounded plug.

Modular Mixing Systems

- Modular system offers full mixing versatility
- Mixing speeds from 2 rpm up to 6000 rpm
- Low-speed, high-torque mixer heads have Jacobs type keyless hand chuck
- Adapt four mixing heads to a single speed controller
- High-speed, low-torque mixer heads have through-shaft precision collet (see photos)
- Two-year warranty



- Through shaft design lets you position the propeller at any depth within the vessel without having to move the mixer head

750-0210/50002-15 High-torque mixer head provides a speed range of 2 to 180 rpm with 1/15 hp PMDC gear motor. Maximum torque is 340 in-oz. Includes Jacobs type chuck that accepts mixing shafts up to 3/8" dia.

750-0220/50002-25 General-purpose high-torque mixer head has a speed range of 9 to 900 rpm with 1/15 hp PMDC gear motor. Maximum torque is 70 in-oz. Includes Jacobs type chuck that accepts mixing shafts up to 3/8" dia.

750-0230/50002-35 General-purpose/through shaft mixer head offers a speed range of 23 to 2300 rpm with 1/10 hp PMDC motor. Through shaft design lets you position the propeller without moving the mixer head. Maximum torque is 45 in-oz. Accepts only 3/8" dia.

750-0240/50002-45 High speed-high shear/through shaft mixer head delivers speeds from 60 to 6000 rpm with 1/10 hp PMDC motor. Through shaft lets you position the propeller without moving the mixer head. Maximum torque is 17 in-oz. Accepts only 3/8" dia shafts.

ORDERING INFORMATION

Model #	Voltage	Shipping Weight
750-0202	115 VAC, 50/60 Hz	4 lb. (1.8 kg)
50002-07	230 VAC, 50/60 Hz	4 lb. (1.8 kg)

Model #	Voltage (50/60 Hz)	Speed Range	Maximum Torque	Shipping Weight
750-0210	115 VAC	2-180 rpm	340 in-oz	8 lbs. (3.6 kg)
50002-15	230 VAC	2-180 rpm	340 in-oz	8 lbs. (3.6 kg)
750-0220	115 VAC	2-180 rpm	70 in-oz	8 lbs. (3.6 kg)
50002-25	230 VAC	2-180 rpm	70 in-oz	8 lbs. (3.6 kg)
750-0230	115 VAC	23-2300 rpm	45 in-oz	8 lbs. (3.6 kg)
50002-35	230 VAC	23-2300 rpm	45 in-oz	8 lbs. (3.6 kg)
750-0240	115 VAC	23-2300 rpm	17 in-oz	8 lbs. (3.6 kg)
50002-45	230 VAC	23-2300 rpm	17 in-oz	8 lbs. (3.6 kg)

Servodyne Microprocessor Mixing Systems



Control our new Microprocessor mixer system from the electronic-controller or directly from your computer

Product Description

Advance your mixing technology with our new Microprocessor mixer system. Our mixers are completely microprocessor-controlled, computer-compatible, and packed with features you won't find anywhere else.

This modular system allows you the flexibility to create the best system for your applications. Mixer components are sold separately so you can tailor a system to meet your mixing needs. Simply start with the new mixer controller, add one of the four mixing heads depending on your speed and torque requirements, and select a shaft and propeller depending on your vessel and fluid.

For your advanced mixing applications, team your computer with our Microprocessor mixer system. Our 7550-70 software and 7550-64 RS-232-C interface cable, allows you to directly control and view mixing parameters through your computer. For technical details, call us at 1-800-637-3739. Ask for our Mixer specialist.

Advance your Mixing Technology!

- Process control – local or remote via RS232
- Modular design for full mixing versatility
- Precise control of mixing speed within $\pm 0.2\%$ – despite changes in viscosity, temperature and power
- Two-year warranty

Order mixing shaft, propeller and stand separately.

About the Microprocessor Controller

The membrane keypad provides precise control of mixing speed within $\pm 0.2\%$ – despite changes in viscosity, temperature, or power line voltage. This is especially advantageous when mixing dilatant or thixotropic fluids. Monitor torque, set high and low torque limits, or measure and control differential torque with the torque zero function. The convenient timer allows you to reproduce mixer runs of up to 100 minutes. All set points and actual values are displayed on the four digit vacuum fluorescent readout. Set parameters are stored in memory as long as line power is maintained.

The controller is connected to the mixer head by a six foot cable – out of reach of spills or splashes. Microprocessor circuitry automatically identifies the particular mixing head in operation, and sets the appropriate limits for that motor. Controller operates on 115 VAC, 50/60 Hz; includes a six foot power cord with grounded plug.

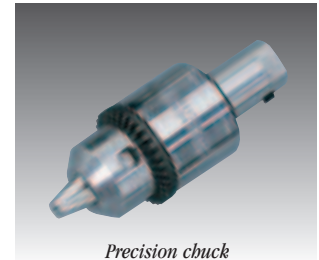
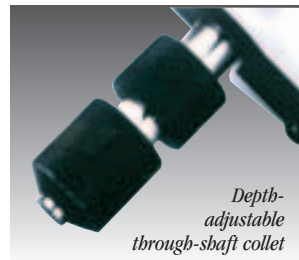


750-4530 Microprocessor mixer controller.

Measures 6-1/2"W x 3-1/2"H x 7-3/4"D. Shipping weight 3 lbs (1.4 kg)

50003-05 Microprocessor Mixer controller for 230 VAC 50/60 Hz.

Servodyne Microprocessor Mixing Systems



Choose from four versatile mixer heads. Each features a TENV, permanent magnet DC motor with permanently lubricated ball bearing construction and optical encoder that transmits motor speed data to the controller.

The low-speed, high-torque models feature a new Jacobs-type keyless precision chuck.

The high-speed, low-torque models incorporate a hollow through shaft and precision stainless steel hand-tightened collet. Simply loosen the collet and adjust the mixing shaft to change propeller depth. Through shaft design also minimizes shaft wobble that occurs at higher speeds.

All mixer heads are equipped with an adjustable-tilt mounting assembly; permitting rotation of mixer head from 0° to 30°. Order shafts, propellers and accessories separately. Heads measure 11-1/2" H x 3-5/8" dia.

745-5031 High-torque mixer head provides a speed range of 3 to 180 rpm with 1/15 hp PMDC gear motor. Maximum continuous torque is 70 in-oz. Includes Jacobs type keyless precision chuck that accepts mixing shafts up to 3/8" dia.

745-5032/50003-25 General-purpose high-torque mixer head has a speed range of 20 to 900 rpm with 1/15 hp PMDC gear motor. Maximum continuous torque is 70 in-oz. Includes new Jacobs type keyless precision chuck that accepts mixing shafts up to 3/8" dia.

745-5033/50003-35 General-purpose/through shaft mixer head offers a speed range of 60 to 2300 rpm with 1/10 hp PMDC gear motor. Through shaft design lets you position shaft/propeller without moving the mixer head. Maximum continuous torque is 45 in-oz. Accepts only 3/8" dia. shafts.

745-5034 High speed-high shear/through shaft mixer head delivers speeds from 150 to 6000 rpm with a 1/10 hp PMDC motor. Through shaft lets you position shaft/propeller without moving the mixer head. Maximum continuous torque is 17 in-oz. Accepts only 3/8" dia. shafts.

Let Your Computer Run the System

Monitor and control from one to sixteen mixing systems remotely from your PC. Use our 7550-64 RS-232-C interface cable and 7550-70 system software program to interface your mixing system to a host computer.

Execute mixing commands, perform sequential/control processes, receive and store report completion data directly through your computer.

For your combination mixing and pumping applications—call us for details on how you can link your mixer to our Masterflex computerized pump drives.

Software program and interface cables sold separately below.

7550-72 Software, mixer control; works with WINDOWS v3.1 or later. 3-1/2" disk format. Requires RS-232 cable below.

7550-64 Servodyne RS-232-C interface cable, connects mixer system to an IBM PC/XT/AT or 100% compatible.

7550-66 Satellite cable, for daisy-chaining mixer to mixer or mixer to Masterflex® drive system.

ORDERING INFORMATION

Model #	Voltage (50/60 Hz)	Speed Range (rpm)	Torque (Cont./Inter.)	Shipping Weight lbs. (kg)
1/15 hp gear motor with new Jacobs type precision chuck				
50003-10	115 VAC	3-180	340/510 in-oz	10.5 (4.5)
745-5032	115 VAC	20-900	70/105 in-oz	10.5 (4.5)
50003-25	230 VAC	20-900	70/105 in-oz	10.5 (4.5)
1/10 hp gear motor with adjustable through-shaft precision collet				
745-5033	115 VAC	60-2300	45/65 in-oz	10.5 (4.5)
50003-35	230 VAC	60-2300	45/65 in-oz	10.5 (4.5)
745-5034	115 VAC	150-6000	17/25 in-oz	10.5 (4.5)