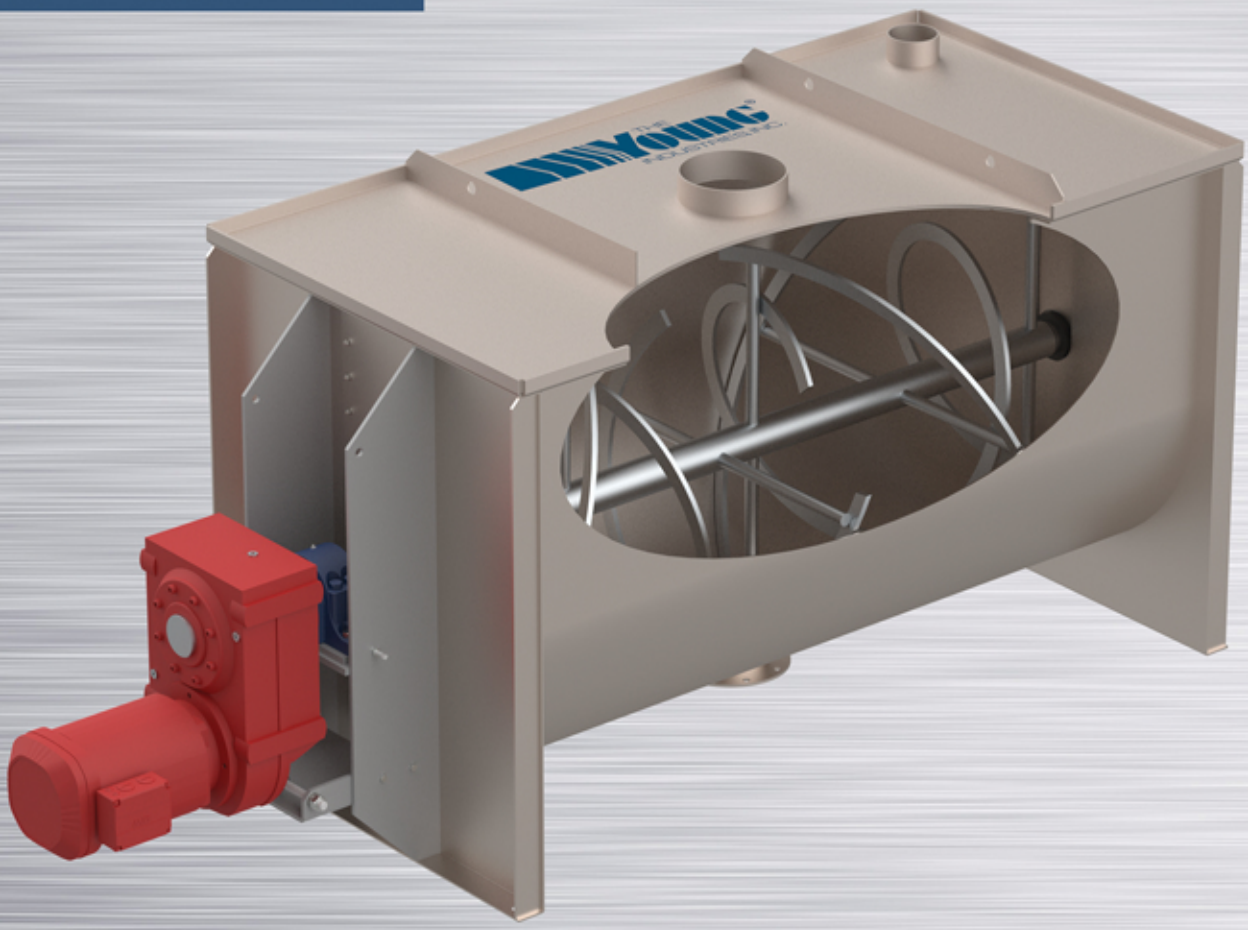
HORIZONTAL RIBBON MIXERS

THE YOUNG® INDUSTRIES, INC.

WWW.YOUNGINDS.COM

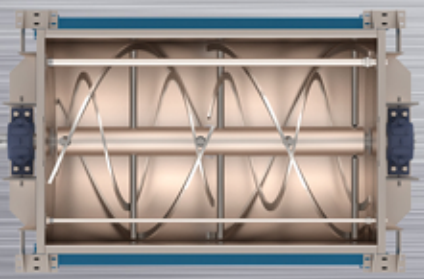


FAST-EFFICIENT MIXING

Young Industries has been manufacturing Ribbon Mixers since our founding in 1947. We offer the most complete line of mixers available to industrial users. Models range from one-half cubic foot laboratory mixers to production units with batch capacity up to 1500 cubic feet. Young Industries has ASME U & UM certifications for those mixing applications that require high pressure bodies or heating/cooling jackets. Our ability to custom design and manufacture mixers makes us a leader in mixing of powders.

ADVANCED TECHNOLOGY PROVEN DESIGN





HORIZONTAL RIBBON MIXERS

Young Industries Horizontal Mixers are in use throughout industry in a wide variety of process applications. These mixers provide fast, thorough and accurate blending of dry, paste and liquid ingredients, including: chemicals, plastics, drugs, foods, insecticides, fertilizers, cosmetics, adhesives, pigments, and numerous other products.

Many of our Mixers are purchased based on the quality and uniformity of product blend that our mixers are able to achieve. The robust body and agitator design assures many years of service life for complete customer satisfaction. Our mixers have earned a reputation for being manufactured of the highest quality while offering long life with virtually maintenance-free operation.

MOST COMPLETE LINE OF RIBBON MIXERS

Young Industries offers a complete line of Horizontal Ribbon Mixers for batch mixing applications. We offer over 115 basic sizes, with the broadest range of options available. Each mixer we supply is designed and manufactured to meet the exact needs of the mixing requirement. When needed, Young Industries designs and manufactures Mixers per the ASME code. ASME code stamped heating and cooling jackets are also available for our complete line of mixers.

CONSTRUCTION FOR LONG SERVICE LIFE

Our Mixers are designed and manufactured with quality materials with long service life. The standard models are designed for starting under full load. They are fabricated from carbon steel, stainless steel, Inconel, aluminum titanium or other special materials as needed by the process requirement. Construction is of heavy material, with the thickness depending on mixer size and process conditions. The extra rugged construction of Young Industries Mixers assures long life under hard, continuous operating conditions.

Our Mixers are constructed to the highest standards and this allows us to maintain close tolerances between the mixer body and agitator during full load operation. All mixers agitators are designed with minimal shaft deflection for trouble-free operation. ASME Pressure vessel construction is used when pressure exceeds 15 PSIG. This applies to the body of the mixer or the heating/cooling jacket if it is required. Young Industries welders are certified to ASME weld procedures and we maintain traceability and certifications of materials. Our Quality Control Program meets requirements of the National Board Inspection Code.

THREE SIZE CONFIGURATIONS

Young Horizontal Mixers of a given capacity are available in three configurations – standard, short and long – to meet floor space and headroom, requirements. Short models are designated by an “S” in the dimension table, and long models by an “L”. The Mixer capacity listed in this bulletin is the actual mixing capacity in cubic feet of material. The total interior volume of a Young Industries Ribbon Mixer is greater than the mixing volume of the mixer. The three sizes for each mixer capacity give our customers the flexibility of how best to use the available floor space.

BODY DESIGNS FOR ATMOSPHERIC, PRESSURE OR VACUUM SERVICE:

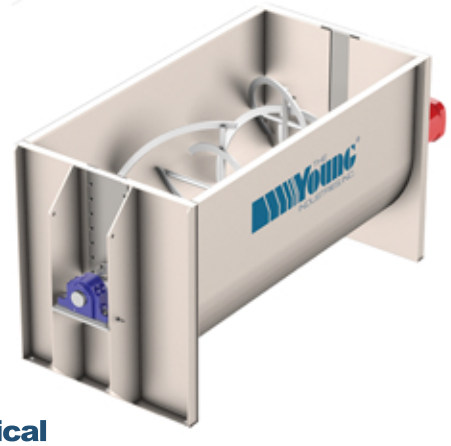
Young Industries designs mixers specifically for the application. Whether the need is for an atmospheric pressure condition, pressure, or vacuum service we design the mixer to meet the requirements. We design and manufacture ASME code mixers or mixer jackets when pressures exceed 15 PSIG.



HORIZONTAL RIBBON MIXERS

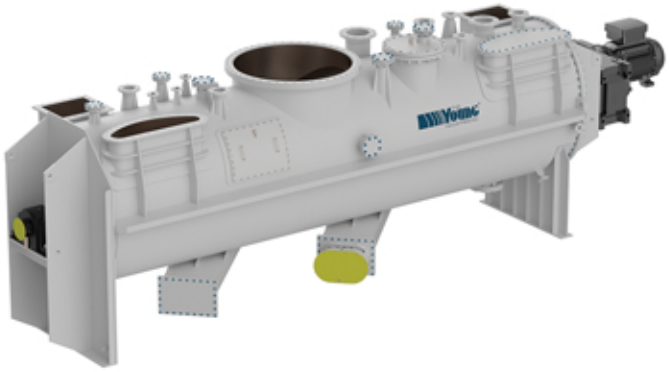
"U" Trough

The standard Ribbon Mixer is a "U"-Trough design. This design is used for ambient conditions or low pressure/vacuum mixing applications and utilizes a flat top cover. The cover can be supplied with inlet nozzles as needed and provisions for dry powder addition. This design allows agitator removal from either the top or end.



Obround

The Obround body has short vertical straight wall with top and bottom being semicircular. This design is used when extra volume is required for high pressure and vacuum service applications. This type of body is also used for those applications that may require an ASME code stamp. This design allows agitator removal from the end only.



Cylindrical

For higher pressure or vacuum service Young Industries custom designs and manufactures Cylindrical body design. This type of body offers the strength needed for those applications that need an ASME code stamp. Our engineers design the body specifically for the application. This design allows agitator removal from the end only.



JACKETS

Young Horizontal Mixers are equipped with jackets when the blending process requires heating, cooling, or drying of liquid ingredients. All jackets over 15 PSI are manufactured to ASME requirements. The specific construction depends on the heating or cooling medium. Flow bars are used for uniform temperature control.



HORIZONTAL RIBBON MIXERS

AGITATORS

DOUBLE RIBBON AGITATORS

Young Double Ribbon Agitators provide fast, efficient mixing action for most types of blending of solid-to- solid, and liquid-to-solid ingredients.

Two spiral ribbons are supported from the mixer shaft. The outside ribbons direct the flow toward the outlet, usually in the center. The inner ribbons direct the flow in an opposing direction away from the outlet.
This results in multiple mixing actions, the ribbons cut through the ingredients radially setting up a tumbling action. The difference in pitch direction, from the outer to inner ribbons, carries the product back and forth, end-to-end of the mixer. Turbulence at the ends and between the outer and inner ribbons, aids in the rapid mixing process.



Double Ribbon

The double ribbon agitator is widely used because it rapidly blends, without damaging ingredients of different characteristics such as size, weight and shape. Additives as small as 1% are distributed and mixed throughout the blend.

Mixer shafts are usually solid in smaller mixers, and heavy tubing in larger models. Construction depends on specific applications, the radial arms are inserted through the shaft, then shaft, arms, and spiral ribbons are welded into a rugged integral assembly. Inner and outer ribbons are proportioned to insure a level load in the mixer.



Multi Pitch

MULTI-PITCH DOUBLE RIBBON AGITATORS

The Multi-pitch agitator has two outer ribbons and a single inner ribbon. For every pitch of the outer ribbon, there are three pitches of the inner ribbon. This design produces an intense dynamic mixing action. The Multi-pitch agitator can typically blend products having different characteristics in size, weight and shape to a uniform blend. Additives less than 1% are disturbed and mixed throughout in less than 10 minutes. The Multi-pitch agitator is proven to provide the most efficient mixing of powders in the least amount of time.



Paddle

PADDLE AGITATORS

Paddle Agitators use either outer paddles or outer spiral ribbon, with a series of back mixing paddles replacing the inner spiral. This design is sometimes preferred when blending in liquid additives.

TROWEL AGITATORS

This type of agitator is similar to the ribbon and paddle type but incorporates special spatula-like trowels set very close to the mixer' s Inner wall. These trowels rub out lumps or agglomerates in the mix, such as occur when hard shortening is added to ready-mix cake flour.



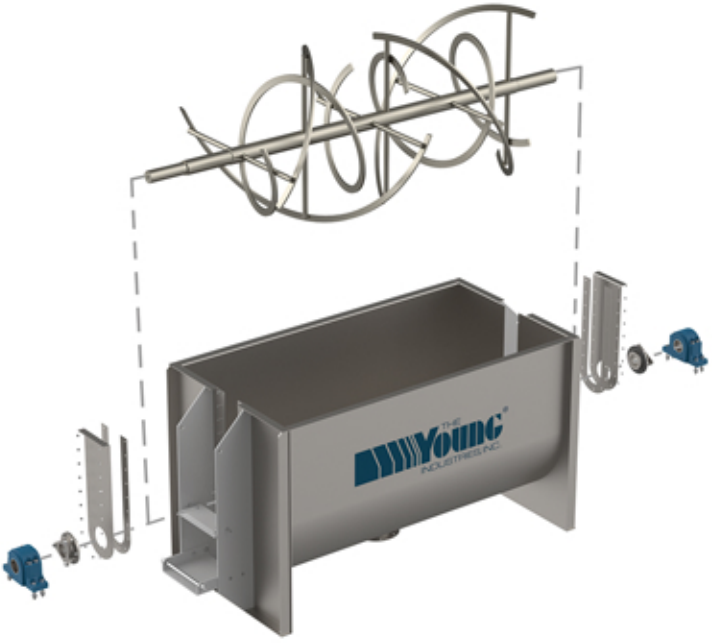
Trowel

HORIZONTAL RIBBON MIXERS

MIXER END DESIGN

Young Industries standard end design for U-Trough body style mixers is a slotted end that allows for easy agitator removal if ever required. A small section of the end directly above the shaft has a removable/bolted in place section. This allows for the agitator to be removed from the top of the mixer. As options the ends are available with the complete end being removable, so the agitator could be completely removed from the end of the mixer. For sanitary applications the agitator is non-removable, and the ends are completely welded to the body.





Slotted End Design



Removable End Design

HORIZONTAL RIBBON MIXERS

MIXER COVERS

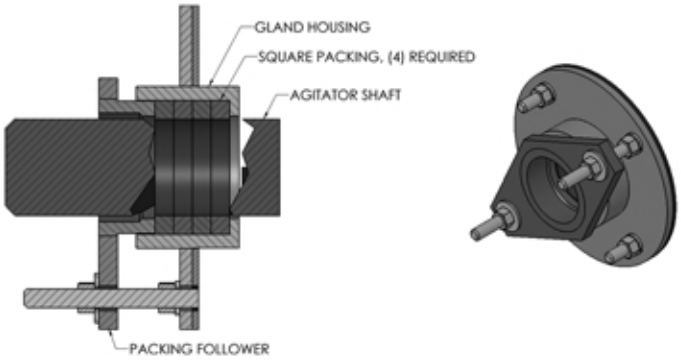
Mixer covers are designed based on the needs of the application. Covers are available with provisions for access and cleaning when needed. Nozzles for additions of solids or liquids can be located as needed. When required the mixer can be supplied with equipment for loading with paper bags or bulk bags. For higher pressure or vacuum rated units domed covers can be supplied.



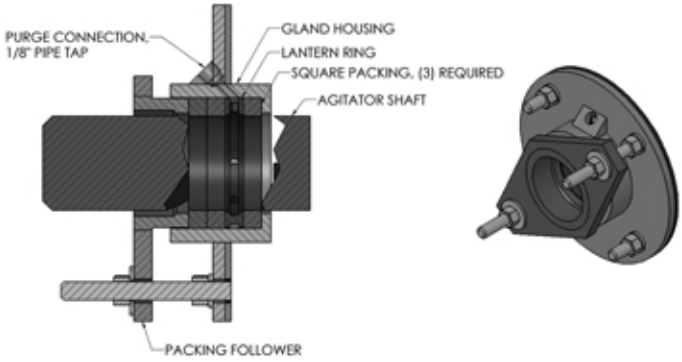
BEARINGS AND SEALS

Outboard mounted, precision bearings assure free-running operation and easy access to the seal. Double row, ball bearings are typical on smaller units; double-row, spherical roller bearings on larger mixers. Young Industries standard shaft seal utilizes a packing gland arrangement. As a standard, the gland utilizes four (4) rings of packing with a packing follower to offer a reliable seal. This seal is also available with a purge connection with lantern ring for those applications where purging the gland with compressed gas is needed. Our mixers are also available with mechanical seals for those customers that prefer it. Custom seals are supplied as needed for higher pressure applications.

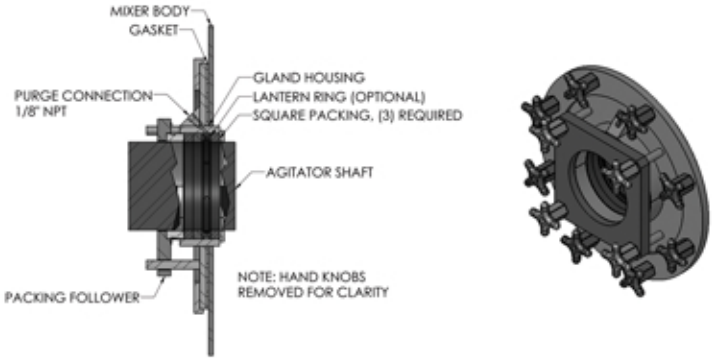
Shaft Seals



Packing Gland W/ 4 - Rings of Packing



Packing Gland W/ Purge Connection & Lantern Ring



Sanitary Packing Gland

HORIZONTAL RIBBON MIXERS

SANITARY FEATURES

Young Industries has been supplying mixers for the food processing, baking, and pharmaceutical industries since our founding in 1947. These mixers are generally 300 series stainless steel construction where product contacts and, in many cases having exterior components of stainless steel. We design these mixers based on the level of cleanability required by the application. Some of our design features may include interior with a uniform finish having welds free from cracks. crevices and pin holes, ground to a smooth finish (up to 180 grit). Our Mixer end design can be provided with uniform radius welds where the sides and ends join. Mixer body is welded into one integral unit. The same precision, sanitary construction can be used on agitators. Covers are dust tight with access provisions as needed. Provisions for clean in place with liquid spray nozzles is also available.

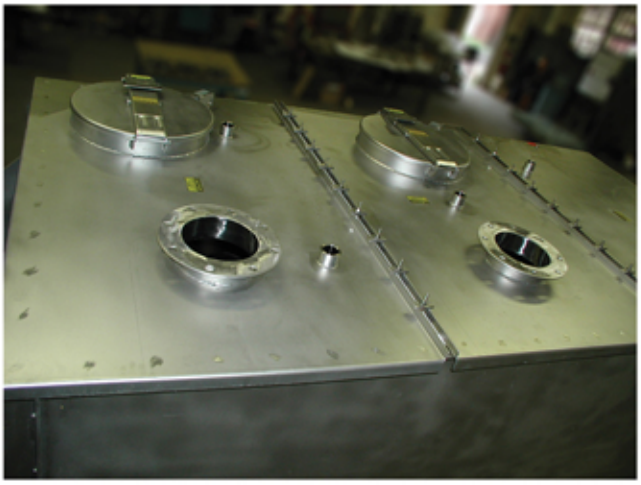


Multi-Pitch Agitator Sanitary Finish



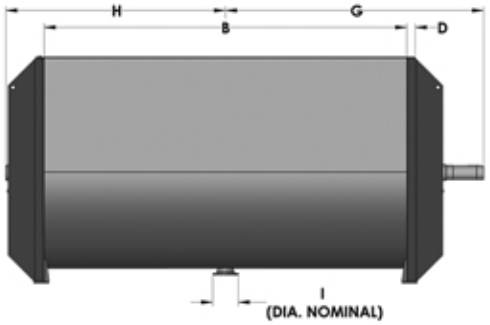
Sanitary Shaft Seal

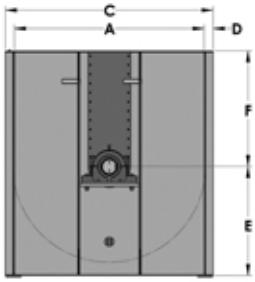
Young's special sanitary seal provides space around the agitator shaft for ease of cleaning. Hand knobs are used so that the entire seal assembly can be taken apart for cleaning without tools.



Mixer Cover

HORIZONTAL RIBBON MIXERS

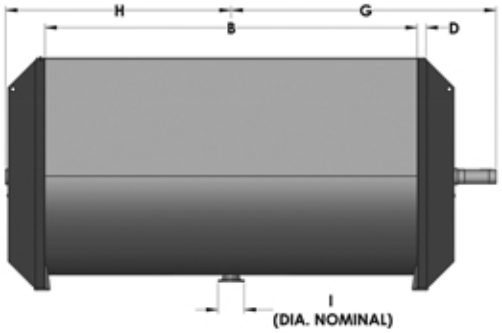


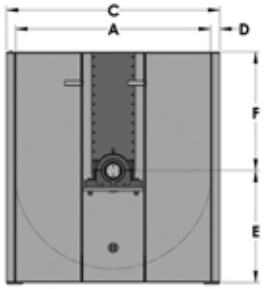


Specifications - Horizontal Mixers

Mixer Designation (Size in cu. Ft.)	Overall Dimensions (Inches)									Std. Speed (RPM)	Std. HP	Shipping Weight Less Drive (lbs.)
	A	B	C	D	E	F	G	H	I			
5	16	36	22	2	16	12	28 1/2	24 1/2	4	70	1 1/2	650
7 1/2	20	42	24	2 1/2	17	13	32	28	4	63	2	830
10	22	46	27	2 1/2	18	14	36 1/2	32	4	57	3	960
12 1/2L	22	60	27	2 1/2	18	14	42 1/2	38	4	57	3	1200
12 1/2	24	48	29	2 1/2	19	15	36 1/2	32	4	52	3	1020
12 1/2S	28	36	33	2 1/2	21	16	30 1/2	36	4	44	3	900
15L	24	60	29	2 1/2	19	15	43 1/4	38 3/4	6	52	5	1295
15	26	54	31	2 1/2	20	17	40 1/4	35 3/4	6	48	5	1100
15S	28	42	33	2 1/2	21	18	34 1/4	29 1/2	6	44	5	970
20L	26	66	31	2 1/2	20	17	48 1/4	41 3/4	6	48	5	1345
20	28	60	33	2 1/2	21	18	45 1/4	38 3/4	6	44	5	1145
20S	30	48	35	2 1/2	22	19	39 1/4	32 3/4	6	41	5	1010
25L	28	72	33	2 1/2	21	18	51 1/2	45	6	44	7 1/2	1405
25	30	60	35	2 1/2	22	19	45 1/2	39	6	41	7 1/2	1195
25S	32	54	37	2 1/2	23	20	42 1/2	38	6	39	7 1/2	1055
30L	30	78	35	2 1/2	22	19	54 1/2	48	6	41	7 1/2	1555
30	32	66	37	2 1/2	23	20	48 1/2	42	6	39	7 1/2	1320
30S	34	60	39	2 1/2	24	21	45 1/2	39	6	36	7 1/2	1160
40L	32	84	37	2 1/2	23	20	57 1/2	51	8	39	7 1/2	1880
40	36	72	41	2 1/2	25	22	51 1/2	45	8	34	7 1/2	1430
40S	38	60	43	2 1/2	26	23	45 1/2	39	8	32	7 1/2	1260
50L	34	96	39	2 1/2	24	21	64 1/2	58	8	36	10	2095
50	38	78	43	2 1/2	26	23	55 1/2	49	8	32	10	1780
50S	40	66	45	2 1/2	27	24	49 1/2	43	8	31	10	1570
60L	36	102	41	2 1/2	25	22	67 1/2	61	8	34	10	2350
60	40	84	45	2 1/2	27	24	58 1/2	52	8	31	10	200
60S	42	72	47	2 1/2	28	25	52 1/2	46	8	29	10	1765
75L	40	102	45	2 1/2	27	24	69 3/4	62 3/4	8	31	15	2580
75	42	96	47	2 1/2	28	25	66 3/4	59 3/4	8	29	15	2320
75S	48	72	53	2 1/2	30	29	54 3/4	47 3/4	8	26	15	2065
100L	42	120	47	2 1/2	28	25	79	72	8	29	20	3030
100	48	96	53	2 1/2	31	29	67	60	8	26	20	2880
100S	54	72	59	2 1/2	34	33	55	48	8	23	20	2575
150L	48	144	53	2 1/2	31	29	92 1/4	85 1/4	10	26	25	4685
150	54	114	59	2 1/2	34	33	77 1/4	70 1/4	10	23	25	4450
150S	60	90	65	2 1/2	37	36	65 1/4	58 1/4	10	20	25	3980
200L	54	150	60	3	34	33	96	88 1/2	10	23	30	6425
200	60	120	66	3	37	36	81	73 1/2	10	20	30	5785
200S	66	102	72	3	40	40	72	64 1/2	10	18	30	5140
250L	60	156	66	3	36	36	101 3/4	93 1/4	10	20	40	7805
250	66	126	72	3	40	40	86 3/4	78 1/4	10	18	40	7025
250S	72	108	78	3	43	43	77 3/4	69 1/4	10	17	40	6245
300L	66	156	72	3	40	40	101 3/4	93 1/4	10	19	40	8700
300	72	132	78	3	43	43	89 3/4	81 1/4	10	17	40	8265
300S	78	108	84	3	46	47	77 3/4	69 1/4	10	16	40	7395
350L	66	174	72	3	40	40	113 1/4	104 1/4	10	19	50	10245
350	72	150	78	3	43	43	101 3/4	92 1/4	10	17	50	9735
350S	78	128	84	3	46	47	89 1/4	80 1/4	10	16	50	8710

HORIZONTAL RIBBON MIXERS



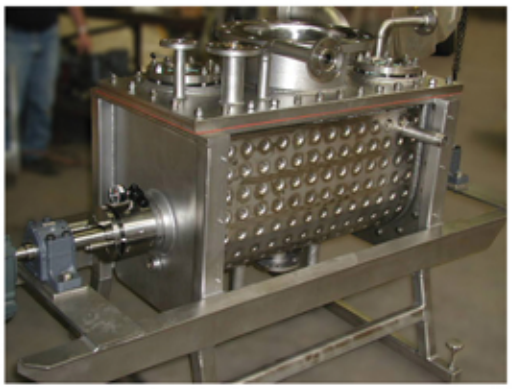


Specifications - Horizontal Mixers (Cont.)

Mixer Designation (Size in cu. Ft.)	Overall Dimensions (Inches)									Std. Speed (RPM)	Std. HP	Shipping Weight Less Drive (lbs.)
	A	B	C	D	E	F	G	H	I			
400	78	144	84	3	46	47	100 1/2	89 1/4	10	16	60	10360
400S	84	126	90	3	49	50	91 1/2	80 1/4	10	14	60	9270
450L	72	192	78	3	43	43	124	113 1/4	10	17	60	12465
450	78	162	84	3	46	46	109 1/2	98 1/4	10	16	60	11840
450S	84	138	90	3	49	49	97 1/2	86 1/4	10	14	60	10595
500L	78	180	84	3	46	47	119 1/2	108 1/4	12	16	75	14150
500	84	156	90	3	49	50	107 1/2	96 1/4	12	14	75	13445
500S	90	138	96	3	52	54	98 1/2	87 1/4	12	13	75	12030
550L	78	198	86	4	46	47	128 1/2	117 1/4	12	16	75	15565
550	84	174	92	4	49	50	116 1/2	105 1/4	12	14	75	14785
550S	90	150	98	4	52	54	104 1/2	93 1/4	12	13	75	13230
600L	84	186	92	4	49	50	125 3/4	114	12	14	100	16925
600	90	162	98	4	52	54	113 3/4	102	12	13	100	16080
600S	96	144	104	4	55	58	104 3/4	93	12	12 1/2	100	14385
650L	84	204	92	4	49	50	134 3/4	123	12	14	100	18565
650	90	180	98	4	52	54	122 3/4	111	12	13	100	17635
650S	96	156	104	4	55	58	110 3/4	99	12	12 1/2	100	15780
700L	84	210	92	4	49	50	137 3/4	126	12	14	100	19110
700	90	192	98	4	52	54	128 3/4	117	12	13	100	17635
700S	96	168	104	4	55	58	116 3/4	105	12	12 1/2	100	15780
750L	90	198	98	4	52	54	131 3/4	120	12	13	100	19275
750	96	180	104	4	55	58	122 3/4	11	12	12 1/2	100	18315
750S	102	162	110	4	58	61	113 3/4	102	12	12	100	16385
800L	90	216	98	4	52	54	141	128	12	13	125	22040
800	96	192	104	4	55	58	129	116	12	12 1/2	125	10940
800S	102	168	110	4	58	61	117	104	12	12	125	18735
850L	96	204	104	4	55	58	135	122	12	12 1/2	125	22250
850	102	180	110	4	58	61	123	110	12	12	125	21135
850S	108	162	116	4	61	65	114	101	12	11	125	18915
900L	96	216	104	4	55	58	141	128	12	12 1/2	125	23560
900	102	192	110	4	58	61	129	116	12	12	125	22380
900S	108	168	116	4	61	65	117	104	12	11	125	20025
1000L	90	240	102	6	52	54	157	141	14	13	150	25405
1000	102	210	114	6	58	61	142	126	14	12	150	24135
1000S	114	168	126	6	64	68	121	105	14	10 1/2	150	21595
1100L	102	234	114	6	58	61	154	138	14	12	150	26895
1100	108	204	120	6	61	65	139	123	14	11	150	25550
1100S	114	186	126	6	64	68	130	114	14	10 1/2	150	22860
1200L	102	252	114	6	55	61	163	147	14	12	150	28965
1200	108	228	120	6	61	65	151	135	14	11	150	27515
1200S	114	204	126	6	64	68	139	123	14	10 1/2	150	24620

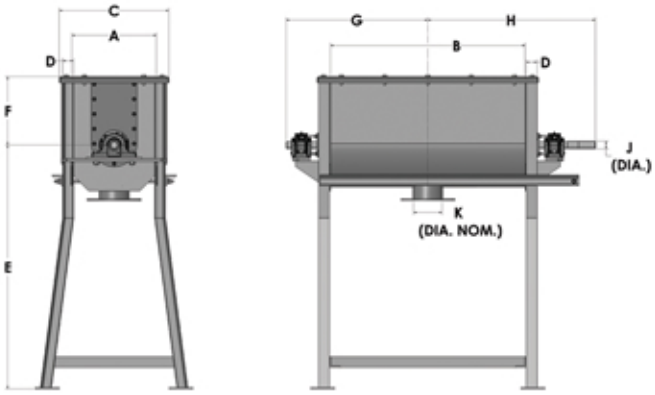
Notes:
1. Standard Horsepower and Speed figures given are sized for mixing free-flowing products weighing 45 lbs. per cubic foot.
2. Mixer Designation is based on size in cubic feet. Standard mixers have no letter designation - "S" desingaiton is for "short" configuration - "L" designaiton is for "long" configuration.

LABORATORY SIZE HORIZONTAL RIBBON MIXERS





Young Industries offers a complete line of Laboratory Size Ribbon Mixers. The sizes range from ½ cubic. foot to 5 cubic foot capacity. These mixers are offered with all the same features and options as our production size mixers. These Mixers are designed to have the same mixing efficiencies as the larger production size Ribbon mixers.
The small volume of these mixers makes them an excellent choice for small scale, or pilot plant operations. These mixers can be supplied as stationary units with support legs, or portable units complete with casters. The rugged design of these mixers assures long service life.



Specifications - Laboratory Mixers

Mixer Designation (size in cu. Ft.)	Overall Dimenstions (inches)									Std. Speed (RPM)	Std. HP	Shipping Weight less Drive (lbs.)
	A	B	C	D	E	F	G	H	I			
1/2	8	18	10 1/2	1 1/4	33	7	16 3/8	13 3/8	2	150	1/2	375
1	12	18	15	1 1/2	35	9	16 3/8	13 3/8	4	100	3/4	450
2	12	36	15	1 1/2	35	9	25 3/8	22 3/8	4	100	1	500
3	14	36	17 1/2	1 3/4	36	10	25 3/8	22 3/8	4	85	1	580
4	16	36	19 1/2	1 3/4	37	11	25 3/8	22 3/8	4	75	1 1/2	675
5	18	36	22	2	38	12	28 1/2	24 1/2	4	70	1 1/2	725

Notes: 1. Standard Horsepower and Speed figures given are sized for mixing free-flowing products weighing 45 lbs. per cubic foot.
2. Clearance under gate is approximately 28".