



TECHNICAL DATA SHEET

SK1ROSS Mixing Equipment

► DESCRIPTION

ROSS Mixers can be used in any industrial field where there is a need for mixing, blending and dispersion of liquid, highly viscous, dry or high-density materials.

► DOUBLE PLANETARY MIXER

The Double Planetary Mixer includes two blades that rotate on their own axes, while they orbit the mix vessel on a common axis. The blades continuously advance along the periphery of the vessel, removing material from the vessel wall and transporting it to the interior. After one revolution the blades have passed through the entire vessel, after three revolutions most materials have been mixed and after only 36 revolutions, the blades have contacted virtually the entire batch.

LABORATORY MODELS

Standard features:

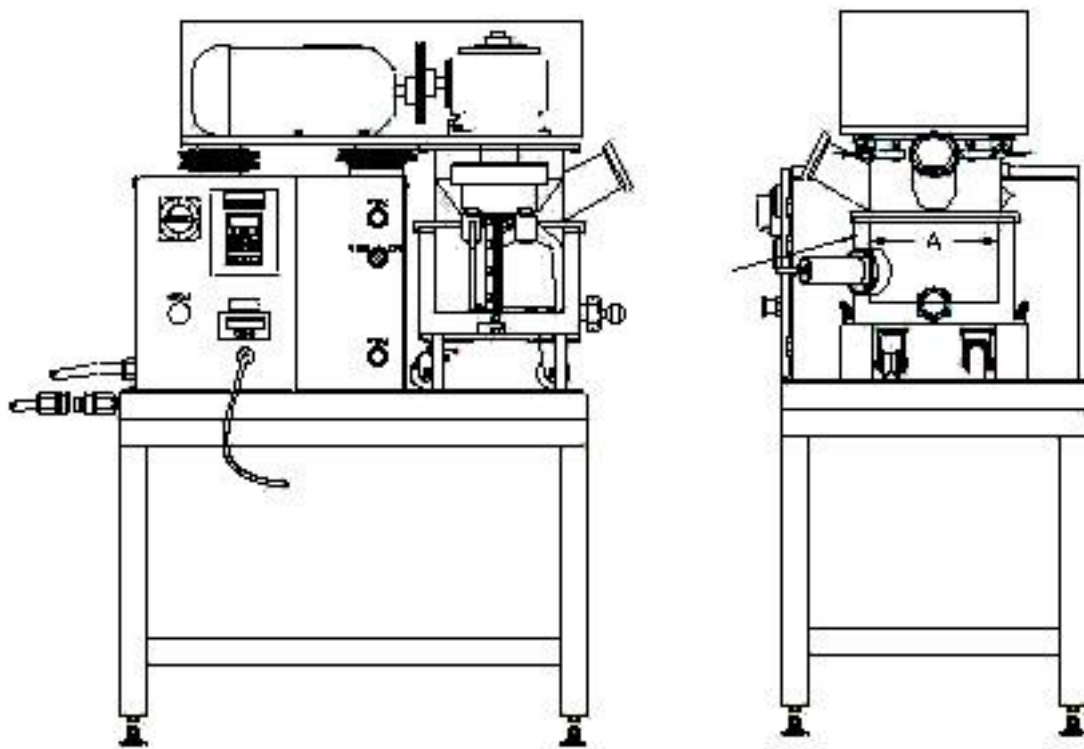
- Materials of construction:
- Stainless Steel type 304 wetted parts polished to an 80 grit finish. All non- stainless steel exterior surfaces are coated with a high quality two-component paint.
- Change Can Design: Change can design for use with multiple mix cans and Discharge Systems.
- Raise/lower: Vertical lift design with air/oil hydraulic lift.
- Drive/electrical: Agitators are driven by an explosion- proof inverter-duty motor. VFD drive provides variable speed operation and on/off operation of motor.
- Gearbox and seals: Stainless steel gearbox. Viton sealing O'Rings and Lip seals on stirrer shaft.
- Agitator: Rectangular stirrer blades are provided.
- Mixing environment: Vacuum hood is easily removed providing access to upper gearbox area for simple maintenance and cleaning.
- Safety features: Explosion proof limit switches to prevent operation of the mixer when in the raised position or when the mix can is removed from the mixing position.





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DPM 1/2 Pt - 4 Gal Specifications and Dimensions

Model	DPM 1/2 Pt	DPM 1 Pt	DPM 1 Qt	DPM 1 Gal	DPM 2 Gal	DPM 4 Gal
Mixing Capacity	1/4 - 1/2 Pt	1/2 - 1 Pt	1/2 Pt - 1 Qt	1 Pt - 3 1/2 Qt	1 Qt - 1 1/2 Gal	1 Qt - 4 Gal
Full Capacity	0.1 Gal	0.25 Gal	0.45 Gal	1 Gal	2 Gal	5 1/4 Gal
HP	1/3	1/2	1/2	1-1.5	1-1.5	2
Orbital Speed	10-30	20-72	20-86	5-100	5-100	4-80
Stirrer Speed	30-90	24-78	22-98	9-180	6-120	4-80
Weight	165	190	200	390	450	520
Mix Can I.D.	3 1/2	4 3/4	5 7/8	8 1/4	9 5/8	14
Mix Can Depth	2 1/2	3 1/4	4	5	6 1/2	8



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Model	DPM 1/2 Pt	DPM 1 Pt	DPM 1 Qt	DPM 1 Gal	DPM 2 Gal	DPM 4 Gal
Mix Can OAH	3	4 1/4	5	6 1/2	8	9 5/8
Base Height	2	1 1/2	1 1/2	2 1/4	2 1/4	2 1/4
Overall length	16	20	21 3/8	33 1/4	35 1/4	43 1/4
Overall Width	12	12	13 1/2	23	23	23
Raised OAH	23	23	15 3/4	31 1/4	32 1/4	41 1/4
Lowered OAH	20	20	25 1/4	24 1/4	24 7/8	32 1/4

All dimensions are in inches

Optional features:

- Special designs: Equipment designed to meet vacuum, sanitary, explosive, internal pressure, or any other special processing environment. Vacuum drying and solvent recovery systems are available.
- Materials of construction: Carbon steel, stainless steel, hastelloy, titanium or aluminum.
- Hydraulic lift: Motorized hydraulic lift with a self contained hydraulic pump/motor and raise/lower controls.
- Reverse lift design: Reverse lift design in which upper bonnet is stationary and the mix can is raised into the mixing position.
- Drive configurations: Mechanical variable speed motor drive, higher horsepower and special drive configurations to satisfy high torque requirements.
- Gearbox: Fabricated in stainless steel with your choice of polished finishes and sealing arrangements. Additional dust and liquid seal arrangements available
- Stirrer blades: "HV" blades, finger type blades, augers, flight bars, custom designed agitators.
- Scrapers: Bottom scraper and self adjusting side wall scraper arm, supplied with replaceable scraper blades.
- Mix can: Jacketed vessels for heating or cooling, thermocouples for monitoring product temperature, discharge valves
- Polishing and coatings: Hard chrome plating, electropolish and high polish finishes up to mirror finish. Coatings of teflon, nylon, kynar, tungsten carbide, aluminum oxide and hastelloy.
- Sight and charge ports: Choice of any size charge/sight port, supplied with a solid end cap, pyrex sight glass, or a light for viewing. Hinged charging ports are also available.
- Mixer base: Raised bases are available to suit special filling and discharge requirements. Extended benches for mounting both a mixer and discharge system. Bases can be sheathed or made in stainless steel, aluminum, or other special materials.



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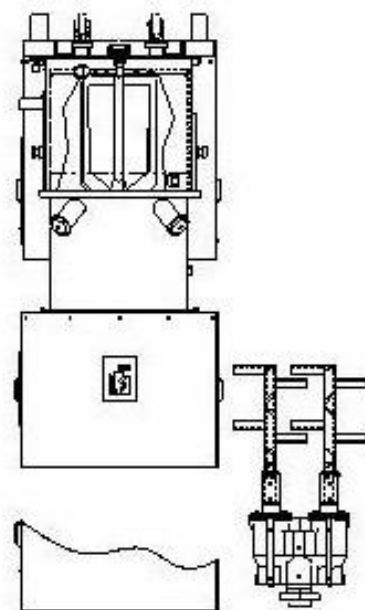
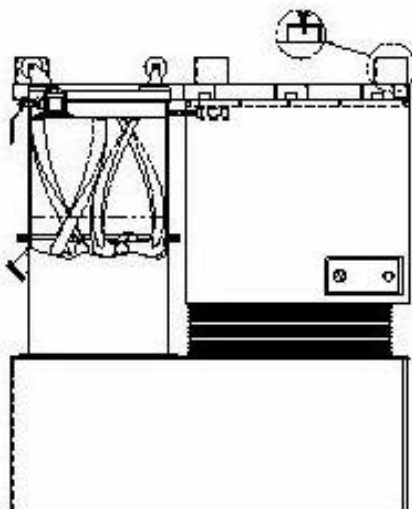
SK1ROSS Mixing Equipment

- Operator controls: Choice of all nema enclosure ratings including explosion-proof, and intrinsically safe. Custom designed plc control systems are available.
- Discharge systems: Discharge systems provide complete "hands-free" discharge of product, directly from the mix can. Floor mounted and elevated designs are available for discharge into your choice of container, drums, cartridges or small syringes.
- Automated mixing and discharge systems: completely automated turntable system, featuring filling, mixing and discharge stations with plc controls.
- Auxiliary equipment: Vacuum pumps, vent condensers, temperature control systems, load cells, pump & metering systems, etc.

PRODUCTION MODELS

Standard features

- Materials of construction: Stainless steel type 304 wetted parts polished to an 80 grit finish. All non- stainless steel exterior surfaces are coated with a high quality two-component paint.
- Change can design: Change can design for use with multiple mix cans and discharge systems.
- Raise/lower: Vertical lift design with air/oil hydraulic lift.
- Drive/electrical: Agitators driven by an explosion-proof inverter-duty motor. Vfd drive provides variable speed operation and on/off operation of motor.
- Gearbox and seals: Cast iron gearbox. Viton sealing o'rings and lip seals on stirrer shaft.
- Agitator: Rectangular stirrer blades are provided.
- Mixing environment: Dust tight hood isolates product from outside contaminants. Hood is easily removed providing access to upper gearbox area for simple maintenance and cleaning.
- Safety features: Explosion proof limit switches prevent operation of the mixer when in the raised position or when the mix can is removed from the mixing position.





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DPM 10-750 Gal Specifications and Dimensions

Model	DPM 10	DPM 25	DPM 40	DPM 75	DPM 100	DPM 150
Mixing Capacity Gals.	2-12	5-25	5-40	10-75	10-100	20-150
Full Capacity Gals.	15	34	47	91	115	184
HP	3-5	5-15	5-15	10-30	10-30	20-40
Orbital Speed	9-37	9-37	9-37	8-30	8-30	6-24
Stirrer Speed	10-39	10-39	10-39	9-34	9-34	7-28
Weight	2500	4200	4200	9000	9000	13500
Mix Can ID	18	25	25	34 1/2	34 1/2	44
Mix can Depth	13 1/2	16	22	22 1/2	28 1/2	28
Mix Can OAH	16.3	25.4	25.4	31.8	31.8	37
Base Height	8	8	8	12	12	15
Overall Length	62	74	74	96	96	115
Overall Width	32 1/2	35 1/2	35 1/2	44	44	50
Raised OAH	80	107	107	149	149	166
Lowered OAH	65	84	84	115	115	132

Apart from listed above there are following models available: DPM 200, 300, 400, 500 и 750.

Optional features

- Special designs: Equipment designed to meet vacuum, sanitary, explosive, internal pressure, or any other special processing environment. Vacuum drying and solvent recovery systems are available.
- Materials of construction: Carbon steel, stainless steel, hastelloy, titanium or aluminum.
- Hydraulic lift: Motorized hydraulic lift with a self contained hydraulic pump/motor and raise/lower controls.



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- Reverse lift design: Reverse lift design in which upper bonnet is stationary and the mix can is raised into the mixing position.
- Drive configurations: Mechanical variable speed motor drive, higher horsepower and special drive configurations to satisfy high torque requirements.
- Gearbox: Fabricated in stainless steel with your choice of polished finishes and sealing arrangements. Additional dust and liquid seal arrangements available
- Stirrer blades: "HV" blades, finger type blades, augers, flight bars, custom designed agitators.
- Scrapers: Bottom scraper and self adjusting side wall scraper arm, supplied with replaceable scraper blades.
- Mix can: Jacketed vessels for heating or cooling, thermocouples for monitoring product temperature, discharge valves
- Polishing and coatings: Hard chrome plating, electropolish and high polish finishes up to mirror finish. Coatings of teflon, nylon, kynar, tungsten carbide, aluminum oxide and hastelloy.
- Sight and charge ports: Choice of any size charge/sight port, supplied with a solid end cap, pyrex sight glass, or a light for viewing. Hinged charging ports are also available.
- Mixer base: Raised bases are available to suit special filling and discharge requirements. Extended benches for mounting both a mixer and discharge system. Bases can be sheathed or made in stainless steel, aluminum, or other special materials.
- Operator controls: Choice of all nema enclosure ratings including explosion-proof, and intrinsically safe. Custom designed plc control systems are available.
- Discharge systems: Discharge systems provide complete "hands-free" discharge of product, directly from the mix can. Floor mounted and elevated designs are available for discharge into your choice of container, drums, cartridges or small syringes.
- Automated mixing and discharge systems: completely automated turntable system, featuring filling, mixing and discharge stations with plc controls.
- Auxiliary equipment: Vacuum pumps, vent condensers, temperature control systems, load cells, pump & metering systems, etc.

► POWERMIX

The patented PowerMix* combines a planetary blade and a high speed dispersion blade. Both agitators are in constant motion.

The planetary and the high speed disperser blades rotate on their own axes and also rotate continuously around the vessel. The planetary blade feeds materials directly into the high shear zone of the orbiting high speed disperser. This combination of unique mixing actions combine to eliminate the need for multiple mixers that this one machine can accomplish.

Both agitators are independently variable speed to permit users to fine tune the speeds to the process at hand. The PowerMix is available in sizes from 1/2 through 750 gallons and can be supplied with many options such as vacuum/pressure, jacketed vessels, etc.





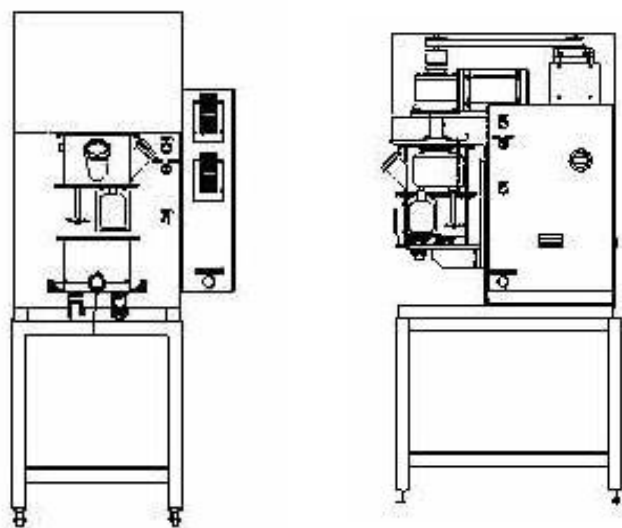
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LABORATORY MODELS

Standard features

- Materials of construction: Stainless steel type 304 wetted parts polished to an 80 grit finish. All non- stainless steel exterior surfaces are coated with a high quality two-component paint.
- Change can design: Change can design for use with multiple mix cans and discharge systems.
- Raise/lower: Vertical lift design with air/oil hydraulic lift.
- Drive/electrical: Agitators are driven by independently driven by explosion-proof inverter-duty motors. VFD drives provide variable speed operation for both agitators and on/off operation of motors.
- Gearbox and seals: Stainless steel gearbox. Viton sealing O'rings and lip seals on stirrer shaft and disperser shaft.
- Agitators: One rectangular stirrer blade, and a high speed disperser blade which is removable and replaceable with a high speed chopper blade.
- Mixing environment: Vacuum hood is easily removed providing access to upper gearbox area for simple maintenance and cleaning.
- Safety features: Explosion proof limit switches prevent operation of the mixer when in the raised position or when the mix can is removed from the mixing position.



PDM 1/2 - 5 Gal Specifications and Dimensions

Model	PDM 1/2	PDM 2	PDM 4	PDM 5
Mixing Capacity	0.17-0.50	0.78-1.5	2.25-4	2.25-5



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Model	PDM 1/2	PDM 2	PDM 4	PDM 5
Full Capacity	0.6	2	5-1/4	6
Planetary HP	1/2	1	1 1/2	2
Planetary Speed	135	112	104	104
Disperser HP	1	1-1/2	2	2
Disperser Speed	5400	3600	3600	3600
Weight	1000	1200	1400	1400
Mix can Depth	6 5/8	6 1/2	8	9
Mix Can I.D.	5 1/2	9 5/8	14	14
Mixer OAH	38 1/2	41	45	45
Mixer OAW	18	33	33	33
Mixer OAL	27 3/4	36	36	36

All dimensions are in inches

Optional features

- Special designs: Equipment designed to meet vacuum, sanitary, explosive, internal pressure, or any other special processing environment. Vacuum drying and solvent recovery systems are available.
- Materials of construction: Carbon steel, stainless steel, hastelloy, titanium or aluminum.
- Drive configurations: Mechanical variable speed motor drives, higher horsepowers and special drive configurations to satisfy high speed, low speed, and high torque requirements.
- Gearbox: Your choice of polished finishes and sealing arrangements. Additional dust and liquid seal arrangements available
- Stirrer blades: Rectangular stirrer blades, "hv" blades, finger type blades, augers, flight bars, custom designed agitators.
- High speed agitators: High speed disperser blades and chopper blades of different designs & materials of construction. Adjustable hubs and multiple blades can be positioned any where along the length of the high speed shaft.
- Scrapers: Bottom scraper and self adjusting side wall scraper arm, supplied with replaceable scraper blades.



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- Mix can: Jacketed vessels for heating or cooling, thermocouples for monitoring product temperature, discharge valves
- Polishing and coatings: Hard chrome plating, electropolish and high polish finishes up to mirror finish. Coatings of teflon, nylon, kynar, tungsten carbide, aluminum oxide and hastelloy.
- Sight and charge ports: Choice of any size charge/sight port, supplied with a solid end cap, pyrex sight glass, or a light for viewing. Hinged charging ports are also available.
- Mixer base: Raised bases are available to suit special filling and discharge requirements. Extended benches for mounting both a mixer and discharge system. Bases can be sheathed or made in stainless steel, aluminum, or other special materials.
- Operator controls: Choice of all nema enclosure ratings including explosion-proof, and intrinsically safe. Custom designed plc control systems are available.
- Discharge systems: Discharge systems provide complete "hands-free" discharge of product, directly from the mix can. Floor mounted and elevated designs are available for discharge into your choice of container, drums, cartridges or small syringes.
- Automated mixing and discharge systems: completely automated turntable system, featuring filling, mixing and discharge stations with plc controls.
- Auxiliary equipment: Vacuum pumps, vent condensers, temperature control systems, load cells, pump & metering systems, etc.

PRODUCTION MODELS

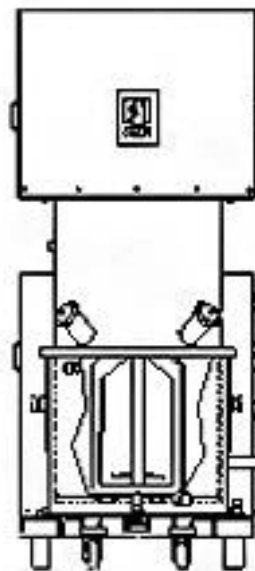
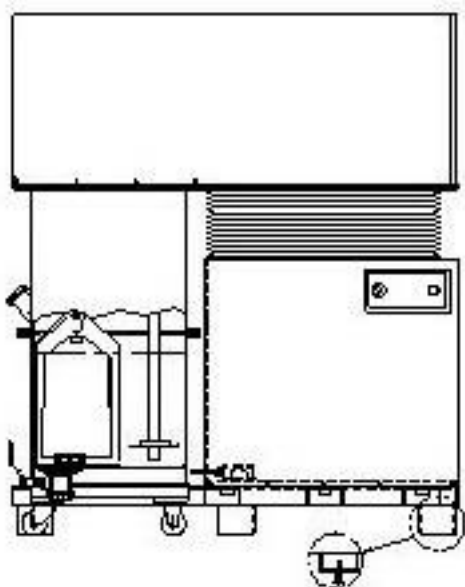
Standard features

- Materials of construction: Stainless steel type 304 wetted parts polished to an 80 grit finish. All non- stainless steel exterior surfaces are coated with a high quality two-component paint.
- Change can design: Change can design for use with multiple mix cans and discharge systems.
- Raise/lower: Vertical lift design with air/oil hydraulic lift.
- Drive/electrical: Agitators are independently driven by explosion-proof inverter-duty motors. Vfd drives provide variable speed operation for both agitators and on/off operation of motors.
- Gearbox and seals: Carbon steel gearbox. Viton sealing O'rings and lip seals on stirrer shaft and disperser shaft.
- Agitators: One rectangular stirrer blade, and a high speed disperser blade which is removable and replaceable with a high speed chopper blade.
- Mixing environment: Dust tight hood isolates product from outside contaminants. Hood is easily removed providing access to upper gearbox area for simple maintenance and cleaning.
- Safety features: Explosion proof limit switches prevent operation of the mixer when in the raised position or when the mix can is removed from the mixing position.



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PDM 10 - 750 Gal Specifications and Dimensions

Model	PDM 10	PDM 25	PDM 40	PDM 75	PDM 100	PDM 150
Mixing Capacity Gals.	4-12	10-25	10-40	30-75	30-100	66-150
Full Capacity Gals.	15	34	47	91	115	184
HP Stirrer	3	7 1/2-10	7 1/2-10	15-20	15-20	25
Stirrer Speed	10-39	10-39	10-39	9-34	9-34	7-28
HP Disperser	3-7 1/2	10-15	10-15	20-30	20-30	34-40
Disperser Speed	612-2450	462-1850	462-1850	350-1400	350-1400	263-1050
Orbital Speed Gearbox	9-37	9-37	9-37	8-30	8-30	6-24
Weight	2500	4200	4200	9000	9000	13500
Mix Can ID	18	25	25	34 1/2	34 1/2	44



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Model	PDM 10	PDM 25	PDM 40	PDM 75	PDM 100	PDM 150
Mix can Depth	13 1/2	16	22	22 1/2	28 1/2	28
Mix Can OAH	16.3	25.4	25.4	31.8	31.8	37
Base Height	8	8	8	12	12	15
Overall Length	62	74	74	96	96	115
Overall Width	32 1/2	35 1/2	35 1/2	44	44	50
Raised OAH	80	109	109	153	153	166
Lowered OAH	65	86	86	119	119	132

All dimensions are in inches, 1 inch = 25.4 mm

Optional features

- Special designs: Equipment designed to meet vacuum, sanitary, explosive, internal pressure, or any other special processing environment. Vacuum drying and solvent recovery systems are available.
- Materials of construction: Carbon steel, stainless steel, hastelloy, titanium or aluminum.
- Hydraulic lift: Motorized hydraulic lift with a self contained hydraulic pump/motor and raise/lower controls.
- Reverse lift design: Reverse lift design in which upper bonnet is stationary and the mix can is raised into the mixing position.
- Drive configurations: Mechanical variable speed motor drives, higher horsepowers and special drive configurations to satisfy high speed, low speed, and high torque requirements.
- Gearbox: Fabricated in stainless steel with your choice of polished finishes and sealing arrangements. Additional dust and liquid seal arrangements available
- Stirrer blades: Rectangular stirrer blades, "hv" blades, finger type blades, augers, flight bars, custom designed agitators.
- High speed agitators: High speed disperser blades and chopper blades of different designs & materials of construction. Adjustable hubs and multiple blades can be positioned any where along the length of the high speed shaft.
- Scrapers: Bottom scraper and self adjusting side wall scraper arm, supplied with replaceable scraper blades.
- Mix can: Jacketed vessels for heating or cooling, thermocouples for monitoring product temperature, discharge valves
- Polishing and coatings: Hard chrome plating, electropolish and high polish finishes up to mirror finish. Coatings of teflon, nylon, kynar, tungsten carbide, aluminum oxide and hastelloy.



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- Sight and charge ports: Choice of any size charge/sight port, supplied with a solid end cap, pyrex sight glass, or a light for viewing. Hinged charging ports are also available.
- Mixer base: Raised bases are available to suit special filling and discharge requirements. Extended benches for mounting both a mixer and discharge system. Bases can be sheathed or made in stainless steel, aluminum, or other special materials.
- Operator controls: Choice of all nema enclosure ratings including explosion-proof, and intrinsically safe. Custom designed plc control systems are also available.
- Discharge systems: Discharge systems provide complete "hands-free" discharge of product, directly from the mix can. Floor mounted and elevated designs are available for discharge into your choice of container, drums, cartridges or small syringes.
- Automated mixing and discharge systems: completely automated turntable system, featuring filling, mixing and discharge stations with plc controls.
- Auxiliary equipment: Vacuum pumps, vent condensers, temperature control systems, load cells, pump & metering systems, etc.

► HYBRID PLANETARY MIXERS PDDM

Ross has expanded its line of Planetary Dual Dispersers (PDDM), offering more sizes of this powerful mixing system designed for high-viscosity and high-solids applications. These hybrid planetary mixers are comprised of four agitators – two planetary stirrers and two high speed dispersers – all rotating on their own axes while orbiting the mix vessel on a common axis.

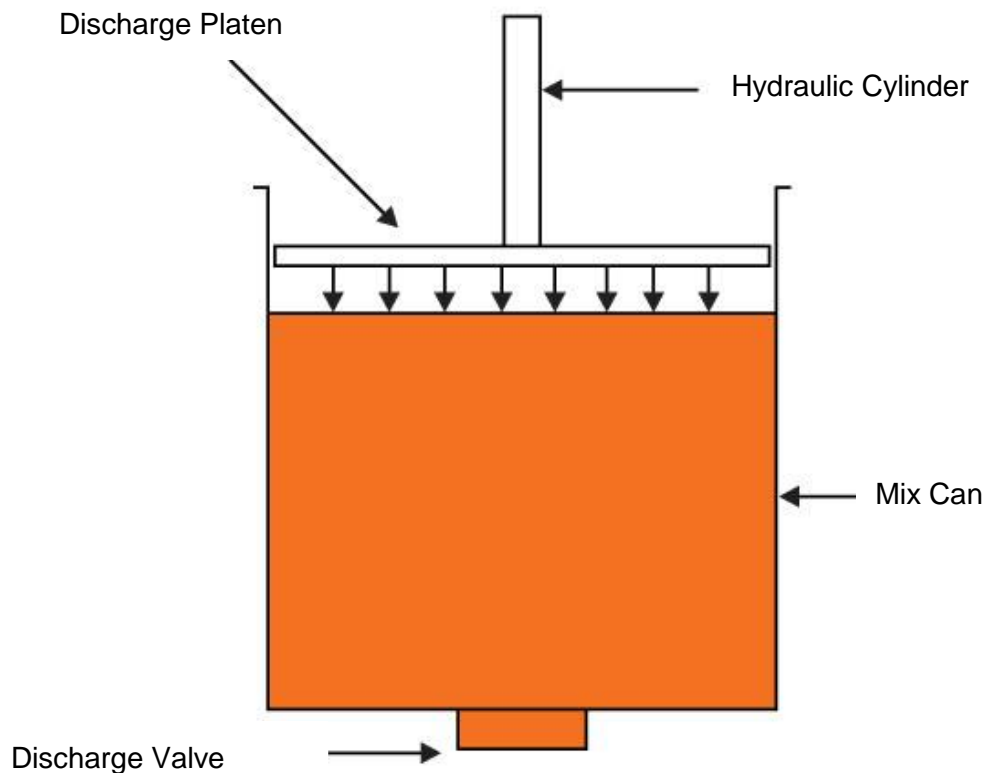
The saw-tooth blades on each high speed shaft provide an intensive shearing action ideal for rapid dispersion and particle size reduction. The planetary stirrers continually turnover batch material, feed fresh product to the high speed blades and promote heat transfer throughout the different areas of the mixing zone. The units shown include sidewall and bottom scrapers to further ensure superior uniformity of temperature and composition.

The PDDM offers precise control over shear levels and flow patterns because the agitators are independently driven and controlled. Compared to single-shaft dispersers and multi-shaft mixers consisting of agitators with a fixed axis of rotation, the PDDM operates over a wider viscosity range up to several million centipoise. Solids are quickly incorporated even into an already thick starting liquid and stubborn agglomerates are broken down effectively regardless of the product's flow characteristics.

► HYBRID PLANETARY MIXERS PDDM

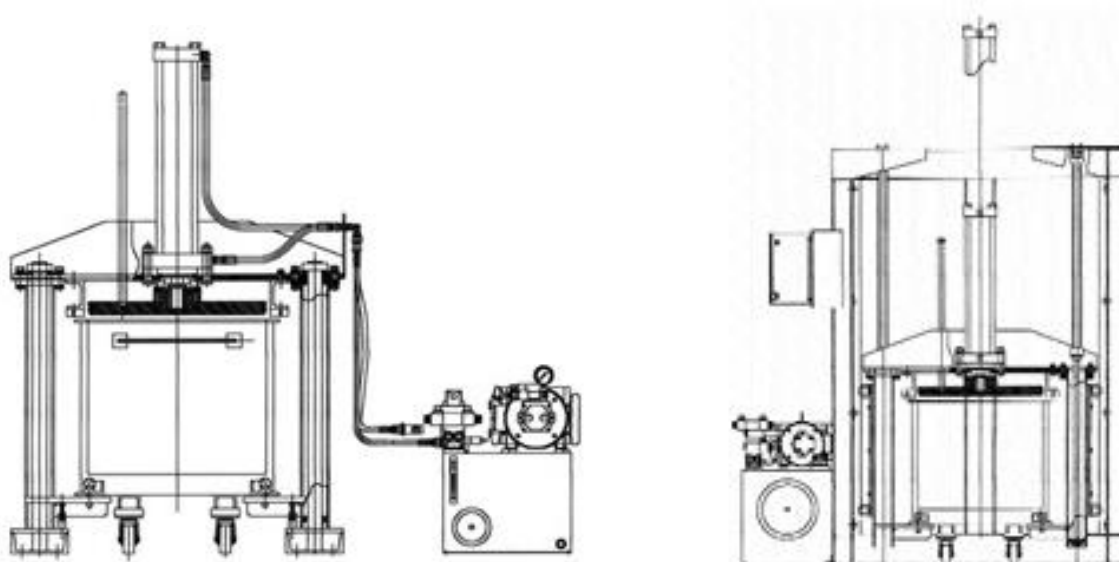
Follower Plate Discharge Systems are used to discharge viscous non-flowable materials from the vessel of a Change Can Mixer. A discharge platen, which is lowered by means of a hydraulic cylinder pushes out the contents of the vessel through a discharge valve which is normally located in the bottom of the mix vessel. The valve can also be located in the platen itself if desired.

Discharge Systems are built in either standard floor mount or raised designs. Designs are available from 1 pint through 500 gallons capacity. Special metering systems are available to assist in the accurate filling of small containers or cartridges. Sanitary models are built with stainless steel enclosures for use in critical operating environments.



Standard Features

- Rugged steel support frame
- Hydraulically operated platen for accurate discharge control
- Hydraulic power-pak which can be mounted and plumbed, or supplied for remote installation
- Stainless steel type 304 platen
- Mix can positioning devices



Specifications and Dimensions of Discharge systems

Model	HED-10 - Elevated Design	HED-40	HED-100	HED-200	DS-10 - Floor Design	DS-40
Base width	69	80 1/2	97	109	36	47
Base deep	36	36	54	54	20 1/2	27
Dimensional bade high	87	108 1/2	132	148	51	73

All dimensions in inches

Optional Features

- Platen of type 316 stainless steel, alternate materials and coatings available
- Jacketed platen
- Sanitary construction
- Metering systems for accurate filling of packaging containers
- A variety of elastomers to wipe mix can walls
- High pressure designs for highly viscous/dense materials
- Pressure compensating power units for continuous or extended use



► NOTE

Please contact us for more detailed information as well as for system development according to your technical specification.

Standard warranty period: 12 months.