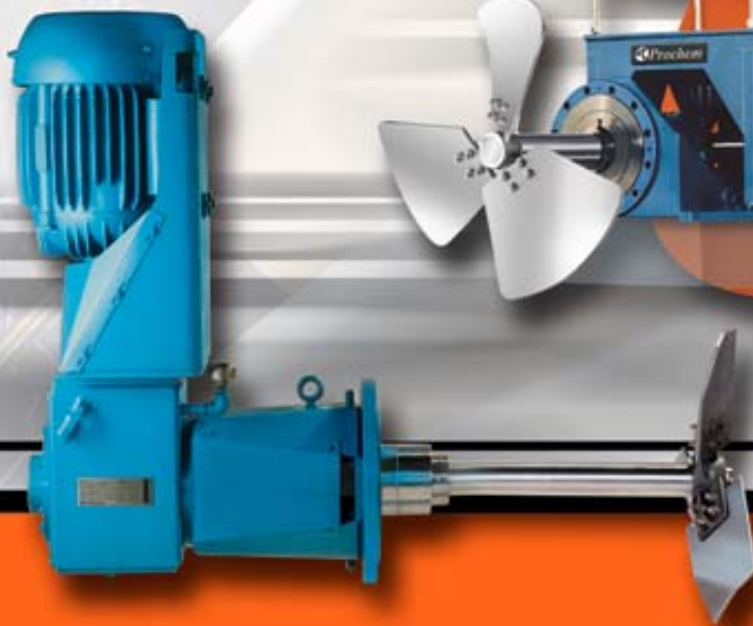


Chemineer *Prochem*

Side Entering Agitators

Reliable Performance

and Dependability



The Proof is in the Performance

Innovative Solutions to Satisfy Your Needs

Chemineer, Inc. is part of the Process Solutions Group of Robbins & Myers, Inc., the most effective, single-source, integrated global provider of innovative process solutions. The Process Solutions Group consists of industry-leading Pfaudler Reactor Systems, Chemineer agitators, TyconTechnoglass glass-lined vessels and Edlon fluoropolymer products. Chemineer, Inc. markets its side entering agitators under the Chemineer® and Prochem® brand names.

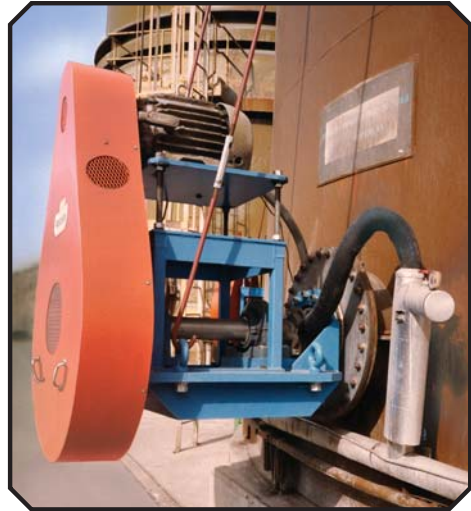
As part of the Process Solutions Group, Chemineer has the capabilities, knowledge and experience to effectively evaluate application requirements and apply and/or customize its high quality mixing equipment to provide innovative mixing solutions that:

- **Perform consistently**
- **Minimize maintenance costs and downtime**
- **Provide long service life**
- **Optimize total cost of ownership**

The Chemineer Difference

The extensive line of Chemineer and Prochem side entering agitators offers numerous benefits to the customer not often found in competitive equipment including:

- **Application versatility** – proprietary ChemScale® method for effective agitator selection with both gear- or belt-driven configurations
- **Proven performance and extended service life** - heavy-duty bearings and shafts
- **Optimal mixing efficiency** - high performance impeller options
- **Ease of maintenance** - tank shut-off devices and multiple sealing options



Prochem side entering agitators satisfy critical mixing applications worldwide.

Drive Choices for Application Versatility

Chemineer, Inc. manufactures and markets both gear-driven and belt-driven, side entering agitators with over 40 years of field proven performance. Designed for demanding applications in pulp and paper, flue gas desulphurization (FGD), biofuel, petroleum blending and storage, BS&W and CPI vessels to name but a few, these agitators provide rugged dependability, application versatility and easy, economical maintenance.

Chemineer, Inc. offers three side entering agitator designs to meet the specific requirements of your applications. The Chemineer® HS agitators feature a spiral bevel gear-driven design for demanding applications that include significant fluctuations in load. The Prochem® PB agitators feature a belt-driven design that incorporates a pillow block bearing configuration for economical performance and easy maintenance. The Prochem® MD agitators also feature a belt-driven design but incorporate an innovative bearing cartridge configuration that protects the bearings from the process fluids.

Chemineer® Gear-Driven Agitator Advantages

The Chemineer® HS gear-driven, side entering agitators offer ruggedness and dependability in an extensive range of applications. Designed for maximum

service life, the HS agitators use precision machined, surface hardened spiral bevel gear sets, high-capacity tapered roller bearings and heavy-duty output shafts.

Design Parameters

Features

- Four standard sizes ranging from 1 to 75 hp
- Custom designs available for higher hp applications
- Two standard output speeds
 - 350 and 230 RPM for 60 Hz designs
 - 290 and 190 RPM for 50 Hz designs

Benefits

- Extensive power options to satisfy a variety of applications
- Application versatility to meet specific requirements

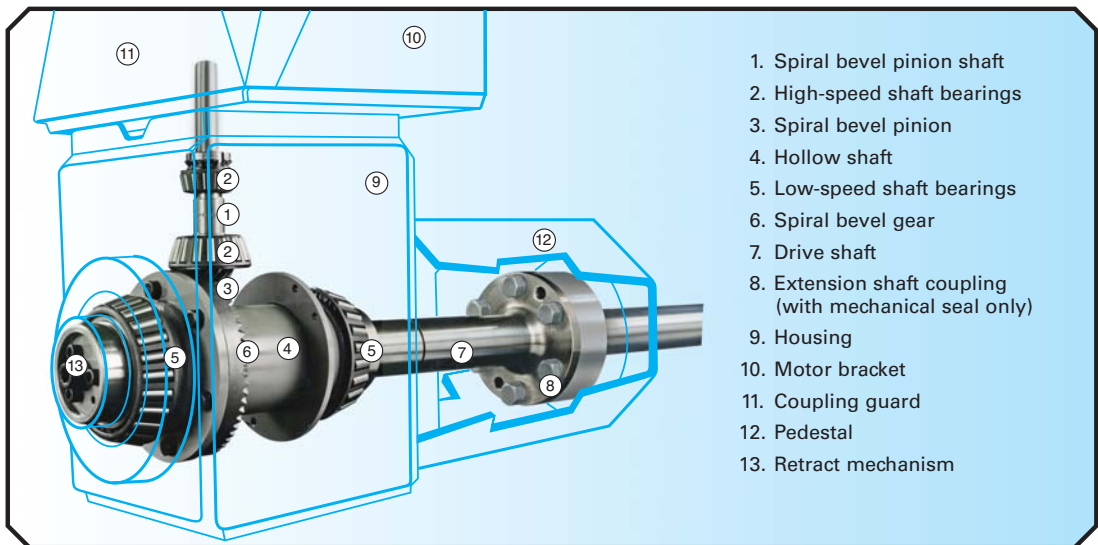
Gearing and Bearings

Features

- Hardened spiral bevel gearing
- All gears load-rated per AGMA Standards and inspected to AGMA Quality 10 levels
- High capacity, tapered roller bearings used throughout

Benefits

- Higher power transfer efficiency than other types of gearing for heavy duty performance
- Generates less heat for long service life
- High quality ensures performance to meet all demands
- Exceptional wear resistance and long service life
- Rated at a minimum of 30,000 hour L10 bearing life
- All bearings mounted on carriers for easy maintenance



Shafts and Seals

Features

- Large low speed shaft
- Rugged, high quality extension shaft
- Output shafts available in carbon steel, 304 Stainless Steel, 316 Stainless Steel and other alloys
- Packed stuffing box and single, split or double mechanical seals and slurry seal are available
- Easy seal change out

Benefits

- Resists deflection and prevents gear misalignment
- Minimizes deflection for excellent sealing and extended seal life
- Application versatility to meet a wide range of applications
- Shaft sealing options provide versatility to cost-effectively meet customer preferences
- Eliminates need for seal flush

Housing and Lubrication

Features

- Drive housing, motor bracket and pedestals are all fabricated from steel plate, machine welded and precision machined
- Compact, right angle configuration
- Splash lubricated
- Double lip seals on drive shafting

Benefits

- Reduces noise level
- Rugged protection of gearing for long service life
- Accurate bearing alignment
- Takes up less space
- Minimizes overhung load and reduces nozzle reinforcement requirements
- Ensures vital lubrication to gears and bearings at all operating speeds for long service life
- Prevent oil loss or contaminant infiltration for long service life

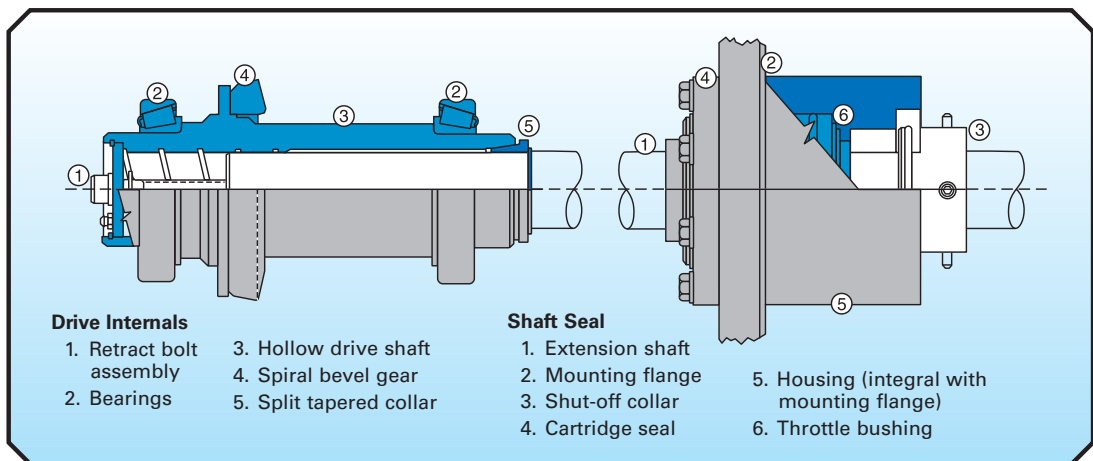
Tank Shut Off

Features

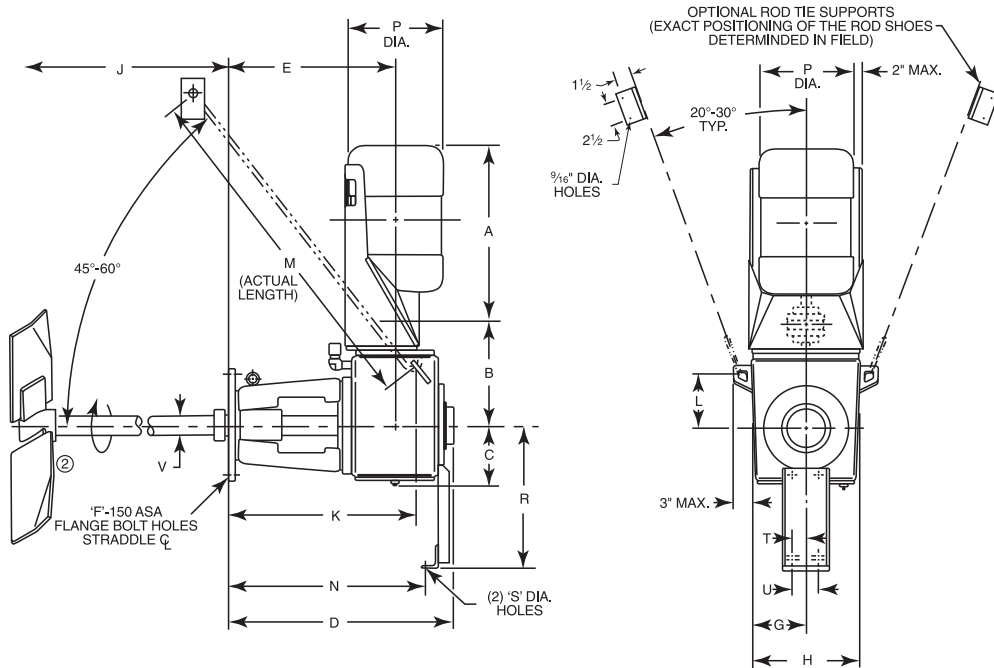
- A standard tank shut off device contains vessel contents during routine maintenance

Benefits

- No need to disassemble the agitator for routine maintenance to minimize downtime and cost



Gear-Driven Agitator Dimensions



Dimensions Chart				
Case Size	1	2	3	4
B	11"	11"	14"	17.25"
C	6.5"	6.5"	8.5"	10.5"
D	25.5"	25.5"	32.125"	38.5"
E	19.75"	19.75"	25"	28.75"
F	8"	8"	12"	12"
G	5.125"	5.125"	7.0625"	9.3125"
H	10.25"	10.25"	14.125"	18.625"
J	26"	26"	33"	38"
V	2"	2"	3"	3.5"

Motor Dimensions (for totally enclosed and explosion-proof motors)				
H.P. ①	Frame		A	P DIA.
	1150 RPM	1750 RPM		
1	1	143T	12.25"	7.75"
	1.5, 2	145T	13"	
1.5	3	182T	14.375"	9.25"
	2	184T	15.375"	
3	7.5	213T	18"	11"
	5	10	215T	
7.5	15	254T	22.875"	12.75"
	10	256T	24.625"	
15	25	284T	26.625"	14.5"
	20	30	286T	
25	40	324T	29.625"	16.875"
	30	50	326T	
40	60	364T	32.5"	18.5"
	50	75	365T	

Mounting Dimensions				
Case Size	1	2	3	4
K	20.75"	20.75"	27.125"	31.625"
L	6.25"	6.25"	7.75"	9.875"
M	66"-72"	66"-72"	78"-84"	90"-96"
N	21.375"	21.375"	27.6875"	33.5"
R	27"	27"	34"	37"
S	0.4375"	0.4375"	0.5625"	0.6875"
T	2"	2"	2.25"	2.5"
U	4"	4"	4.5"	5"

① 230 RPM units use 1150 RPM motors; 350 RPM units use 1750 RPM motors

② Impeller diameter and other options to suit application

Prochem® Belt-Driven Agitator Advantages

The Prochem PB and MD belt-driven, side entering agitators provide easy-to-maintain configurations that minimize downtime and maintenance costs.

Field-proven performance for over 40 years makes Prochem agitators the ideal choice for a broad range of applications.

Design Parameters

Features

- Standard belt drive service factor is 1.3 with optional 1.5 and 2.0 available
- Up to 300 hp as standard with designs up to 400 hp available (PB); up to 250 hp as standard with designs up to 500 hp available (MD)
- Wetted parts available in many highly corrosion-resistant materials including 316 Stainless Steel, 317L Stainless Steel, Hastelloy C or Titanium and other alloys available as needed

Benefits

- Aligns with customers' equipment specification requirements
- Extensive power options to satisfy a variety of applications
- Corrosive and abrasive environments can be easily handled
- Extends service life of wetted parts
- Can meet a wide range of application requirements

Bearings

Features

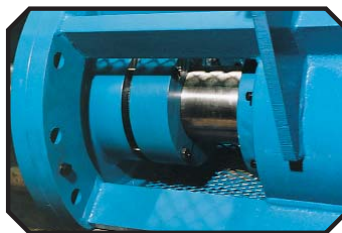
- Pillow block bearing configuration (PB)
- Enclosed bearing cartridge configuration (MD)
- Minimum B-10 bearing life of 100,000 hours
- Bearing shields and slingers are standard

Benefits

- No field alignment of bearings or packing needed due to pre-alignment on integral mounting base
- Easily accessible bearings access for economical maintenance
- Innovative design allows quick and easy replacement of bearings as a unit to reduce downtime
- Long bearing life for low cost of ownership
- Protects bearings from the process fluid for long bearing life



Pillow Block Assembly



Bearing Cartridge

Shafts and Seals

Features

- Shaft diameters up to 7 inches
- Shafts designed to handle up to 10 times the normal operating load at full torque
- Packed stuffing box and single, split or double mechanical seals are available
- Chrome plated shaft sleeves are available

Benefits

- Wide range of shaft options increases application versatility
- Optimal performance and long service life in the most difficult applications
- Shaft sealing options provide versatility to cost-effectively meet customer preferences
- Extends shaft life in highly corrosive or abrasive applications to minimize costs

Belt Drives and Guards

Features

- Ultra VX belts and sheaves are used on both the PB and MD agitators
- Made to OSHA standards
- Ample ventilation regulates temperature
- Guards on units with 3-inch or larger shafts contain access holes for adjusting belts

Benefits

- Provides economical power transmission with shock absorbing capability for optimal performance and long life
- Ensures operational safety of belt-driven equipment
- Cooler running agitators extend service life for low total cost of ownership
- Quick and easy maintenance reduces costs

Housing and Mounts

Features

- Designed to withstand severe loads many times that of typical application requirements

Benefits

- Quality construction extends service life

Tank Shut Off

Features

- Optional tank shut off device contains vessel contents during routine maintenance

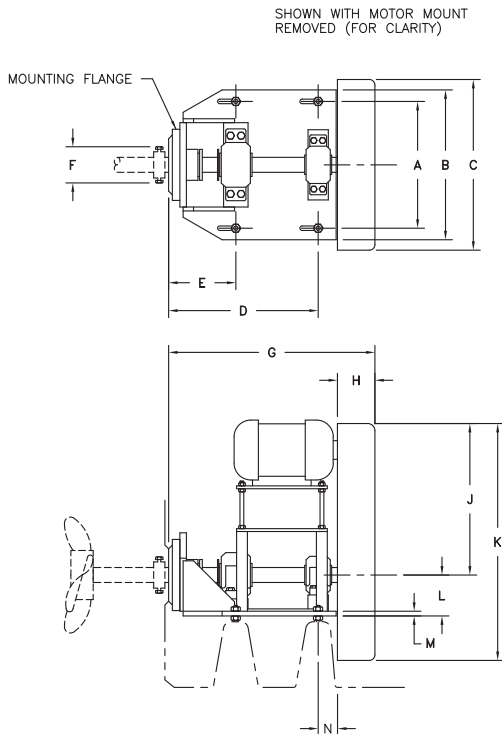
Benefits

- No need to disassemble the agitator for routine maintenance to minimize downtime and cost

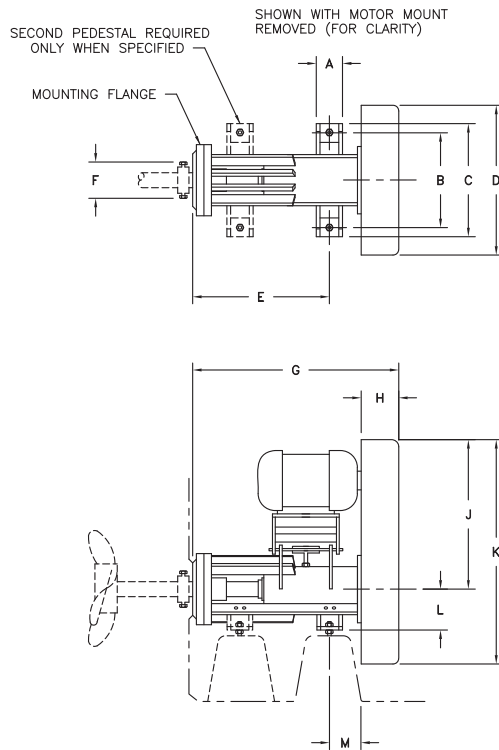


Tank Shut Off

Belt-Driven Agitator Dimensions



Prochem® PB Series
S Configuration Shown
C & Z Configurations Available



Prochem® MD Series
S Configuration Shown
C & Z Configurations Available

Dimensions Chart

Model	A	B	C	D	E	F	G	H	J	K	L	M	N	Net Weight*
20PB1S	20.5"	23.0"	23.0"	22.3"	8.6"	5.8"	34.3"	8.0"	20.3"	31.8"	4.9"	1.0"	3.8"	400
30PB1S	25.0"	29.0"	32.3"	25.2"	10.5"	6.8"	37.3"	8.0"	28.1"	44.3"	6.6"	1.3"	3.8"	890
40PB1S	30.0"	34.0"	43.8"	33.8"	12.8"	7.3"	48.8"	10.0"	41.9"	63.8"	8.5"	1.3"	4.8"	2000
50PB1S	39.0"	43.0"	56.3"	35.9"	15.4"	9.0"	55.9"	15.0"	50.1"	78.3"	10.3"	1.5"	4.8"	2530
60PB1S	43.0"	47.0"	56.3"	39.8"	15.7"	11.0"	59.8"	15.0"	50.1"	78.3"	13.3"	1.8"	4.8"	3240
20MD1S	4.0"	12.0"	15.0"	23.0"	20.1"	5.8"	32.1"	7.0"	20.3"	31.8"	5.0"	4.8"		350
25/30MD1S	5.0"	14.0"	18.0"	32.3"	23.4"	6.8"	34.3"	7.0"	28.1"	44.3"	7.0"	3.7"		770
35/40MD1S	6.0"	18.0"	22.0"	43.8"	28.1"	7.3"	45.6"	10.0"	41.9"	63.8"	8.6"	7.4"		1740
45/50MD1S	7.0"	24.0"	30.0"	56.3"	36.1"	9.0"	57.1"	15.0"	50.1"	78.3"	10.0"	5.8"		2200
55/60/65MD1S	10.3"	23.8"	28.8"	56.3"	34.0"	11.0"	57.5"	15.0"	50.1"	78.3"	11.0"	8.3"		2820

* Net weight does not include motor, impeller or shafting beyond mounting surface, all weights are in pounds and are approximate.

Advanced Impeller Technology

The premier side entering impeller for the Chemineer HS is the HE-3s which provides high pumping and low shear rates. The Prochem MD and PB agitators utilize the Maxflo WSE, the result of over four decades of research and application performance. This proven performer offers:

- Reduced wear through lower tip speeds
- Hydrodynamic design for greater cavitation resistance than other impeller designs

- Easier maintenance with bolted blade construction
- High efficiency for maximum pumping action resulting from its hydrofoil design

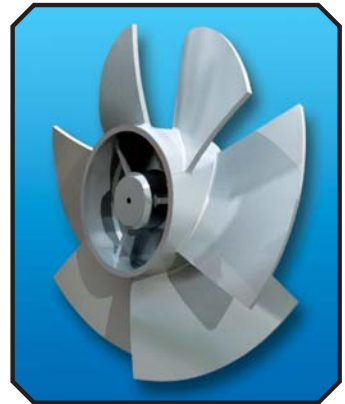
In addition to the HE-3s and Maxflo WSE impellers, Chemineer also offers the Maxflo Mark III impeller upon request. Each impeller offers unique performance characteristics for specific application requirements.



HE-3s Impeller



Maxflo WSE Impeller



Mark III Impeller

Industry-Leading Aftermarket and Technical Support

Features

- Extensive network of factory trained field sales representatives and in-house application engineers
- Superior field technical support and an extensive inventory of replacement parts available from Robbins & Myers Process Solutions Group's dedicated GPS aftermarket services organization
- 24/7 hotline available

Benefits

- Experienced application specialists provide effective fluid mixing solutions
- Installation, maintenance and troubleshooting support reduces downtime and costs
- Call (585) 235-1010



Fluid Management Group

Chemineer, Inc. is part of the family of businesses that comprise the Fluid Management Group of Robbins & Myers, Inc. The Robbins & Myers Fluid Management Group is a leading provider of innovative fluid management solutions that deliver superior performance, long service life and exceptional value. The Group brings together its global resources — engineering, manufacturing, application expertise and cutting-edge, proprietary technology — to deliver high quality, dependable products, effective system solutions and responsive support services to benefit customers worldwide.

Satisfying a broad range of application needs, the Fluid Management Group focuses its resources on the oil and gas discovery and recovery, chemical process, water and wastewater, food, biofuels, pulp and paper, pharmaceutical and numerous other industries.

The Fluid Management Group's parent company, Robbins & Myers, Inc., supplies highly-engineered, critical equipment and systems for global energy, industrial, municipal, chemical and pharmaceutical markets. Robbins & Myers provides innovative products, application engineering expertise, customer support and a competitive cost structure that create value for its customers.



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