



RICHTER

Process Pumps & Valves

ENGINEERED
IN
GERMANY
BUILT & SERVICED
IN THE
UNITED STATES







RMA, RMA-B



NEW
EXTENDED PERFORMANCE RANGE
4x3x10"H

LINED MAG-DRIVE ASME B73.3 PUMPS

Corrosive, solids laden and high-purity fluids

-  Performance to 1320 GPM and 500 ft. TDH
-  Dry-Run Protection
-  Superior Solids Handling
-  Temperatures to 300°F (150°C)
-  Balanced Operation Under Critical Load Conditions
-  Quality, FDA Approved Pure PFA/PTFE Lining

IDEX



Made to Handle Critical Fluids Safely, Without Compromise

WORLD-CLASS IN DEMANDING CHEMICAL PROCESSING APPLICATIONS FOR DECADES

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Pure PFA lining without carbon or carbon fiber fillers – guaranteed quality and even lining thickness

- High chemical and permeation resistance
- Temperatures to 300°F (150°C)
- Full FDA conformity
- Vacuum-proof anchored



SAFEGLIDE® PLUS technology protects against dry-run

- Utilizing proprietary surface impregnation, SAFEGLIDE® PLUS silicon carbide (SSiC) sleeve bearings are extremely wear and chemical resistant



Axially thrust-optimized rotating unit – runs smoothly under critical load conditions

- Well-balanced rotating unit supported both in the containment shell and in the suction-side SSiC spider
- Designed for no shaft deflection, for less stress on components
- Wide space between SSiC bearing sleeves for best distribution of radial forces
- Engineered closed impeller design, thrust-balancing circulation holes and defined internal circulation flow path ensure minimum thrust loads



Minimum life cycle cost and ease of maintenance

- High efficiency design, no energy-wasting eddy currents
- Universal corrosion resistance provides high flexibility
- Virtually maintenance-free
- Double “back pull-out” design for easy maintenance of motor and anti-friction bearings without releasing system pressure
- Few components for servicing ease



Robust design for dimensional stability even at high temperatures

- Full-surface ductile cast iron ASTM A395
- Impeller magnet assembly with large metal core
- Highest grade SSiC components

Non-metallic double containment shell system

- Wetted: thick-walled pure PTFE
- Pressure-bearing carbon fiber



Patented, high performance permanent magnet technology

- Consistent energy density even at high temperatures



Capable of handling liquids containing solids

- Solids restriction ring prevents particles from entering rear containment shell chamber
- SSiC suction-sided spider resists wear and tear



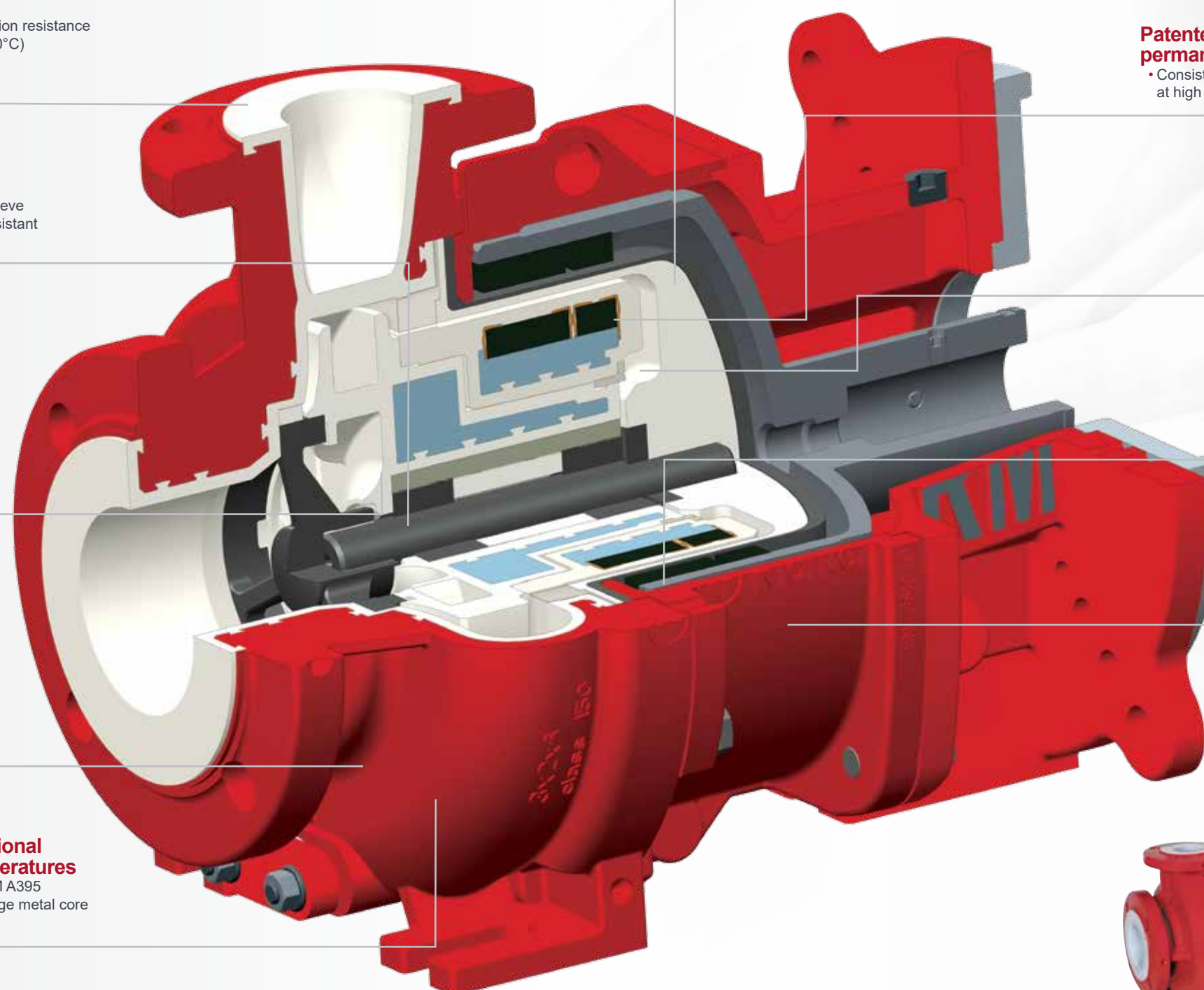
Drive magnet assembly with bump ring

- Protects containment shell from contact with tumbling drive magnet assembly in event of ball bearing failure



High quality external corrosion protection

- Thick 2-component outside epoxy coating
- Stainless steel screws, with additional grades also available



Bare shaft pump RMA-B
All sizes are available both in compact close-coupled design for a flange motor and in frame-mounted design.

SULPHURIC ACID
 HIGH PURITY CHEMICALS
HYDROCHLORIC ACID
 leaching +
 electrowinning of metals
WASTE CHEMICAL INCINERATION
CHLORINATED SOLVENTS
CHLOR-ALKALI ELECTROLYSIS
 vessel loading + unloading
BASE CHEMICALS
 semiconductors
CAUSTIC SODA brine
MONOCHLOROACETIC ACID
 gas scrubbing
 chlorobenzene
 chemical waste water
ACID PRODUCTION AND RECOVERY
 hydrobromic acid acetic
MINING
 ROAD + RAIL TRANSPORTATION
PHOSPHORIC ACID ANOLYTE
 pulp bleaching
BROMINE
SODIUM HYPOCHLORITE
 UHP water metal recycling
HYDROFLUORIC ACID
 CONCENTRATION +
 PURIFICATION PROCESSES
NITRIC ACID
 ACTIVE PHARMACEUTICAL INGREDIENTS
AGROCHEMICALS

Designed for corrosive, hazardous, pure and ultrapure fluid processing

Complex processes, together with growing demands on plant flexibility and safety, require the use of highly advanced and universally resistant plant components.

With a complete range of lined, chemical process and specialty pumps, shut-off, control and safety valves, Richter offers a product spectrum to satisfy the most demanding needs.

Many years of experience enables control of additional challenges, such as high and very low temperatures, solids contamination or the risk of dry-running. Richter is renowned for its solutions in extremely demanding applications.

RMA pumps are diverse in ability, and are especially common in fine/specialty chemical, chlor-alkali, and other base chemical transfer applications.

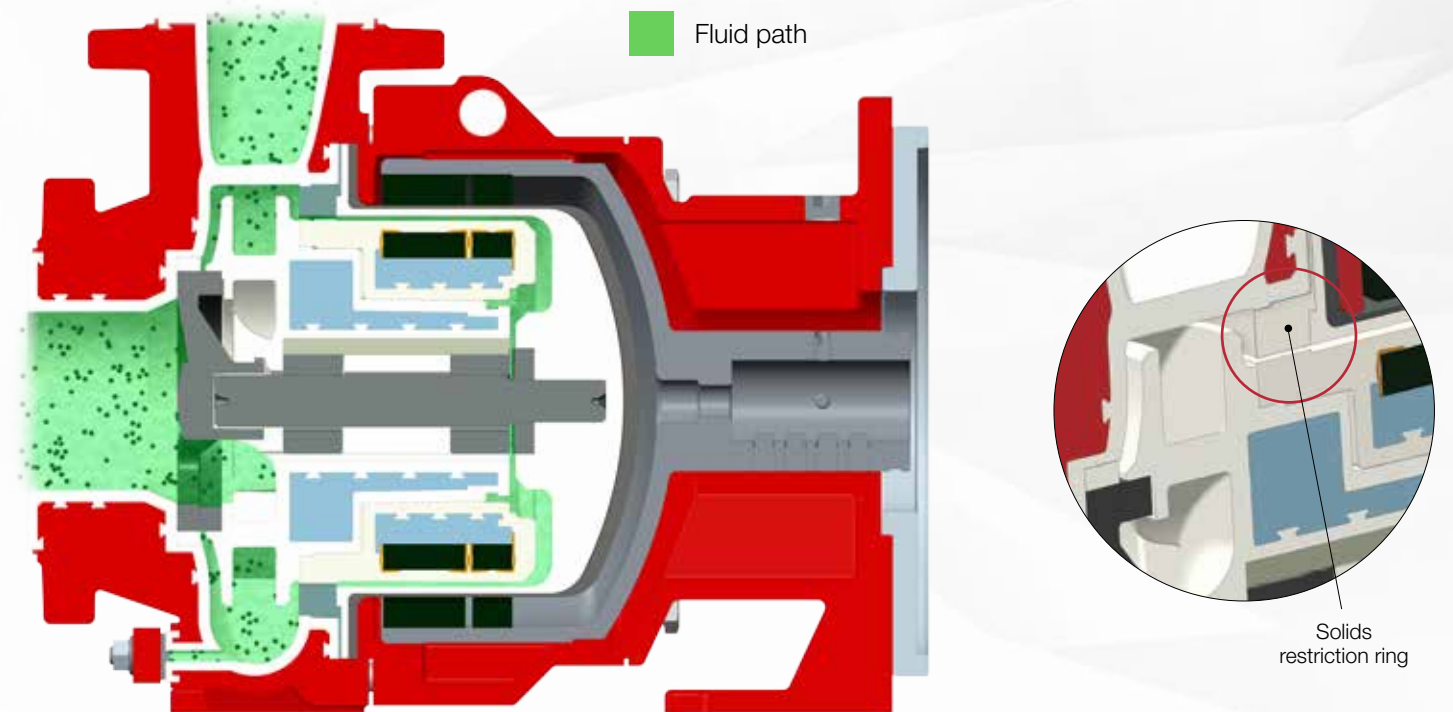
Parts and materials



Materials used
 Casing: ductile iron ASTM 395
 Lining: PFA
 Plain bearings, pure SSiC
 Eddy current free double can, PTFE/CFK

Superior solids handling

The Richter range of lined pumps can handle solids laden fluids even with a higher percentage of contents. The allowable percentage of solids very much depends on the particle size, shape and hardness. Your Richter representative can provide a case-by-case review, including the ability to create curves and data sheets customized to your specific application.



Strategic pioneer in the development of high performance pumps and valves

Headquartered in Kempen and situated on the Lower Rhine in Germany, Richter has comprehensive expertise in sensitive fields of application. The 250+ highly qualified Richter employees place great importance on the level of quality production in our company. With growing demands on safety and environmental protection, customers can be certain of staff expertise, and extensive experience at Richter.

Founded in 1957, Richter manufactures and markets lined magnetic drive and mechanical seal pumps, strainers, shut-off, control and safety valves. Richter process pumps, valves and control equipment are used for handling corrosive, environmentally critical, high-purity and other difficult media.

RICHTER
 Process Pumps & Valves

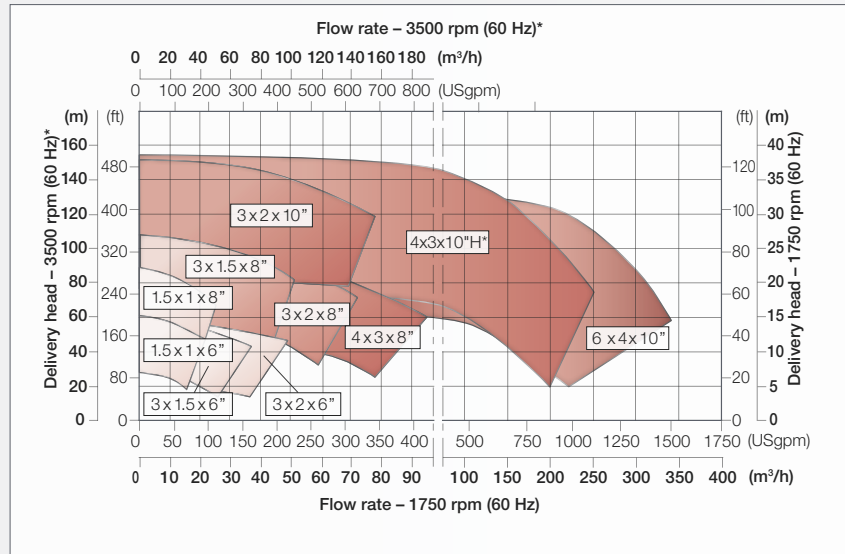
Scan for a complete list of markets
RICHTER-CT.COM/MARKETS
 Find out more applications for Richter pumps and valves.

Performance

Richter magnetic drive pumps RMA and RMA-B are available for a performance range of up to 1320 US gpm (300 m³/h) and up to 500 ft (155 m) LC at 60 Hz speeds, 1100 US gpm (250 m³/h) and up to 360 ft (110 m) LC at 50 Hz speeds. Flow rates and delivery heads outside this performance range can be covered by the Richter magnetic drive pump series MNK/MNKA up to 2650 US gpm (600 m³/h).

With its design, the good hydraulics, the containment shell free of eddy currents and the overall monetary value, the RMA/RMA-B series is one of the most economic pumps of its kind. The 9 well graduated pump sizes from 1.5x1x6" to 6x4x10" allow for a tailor-made pump selection.

Performance curve

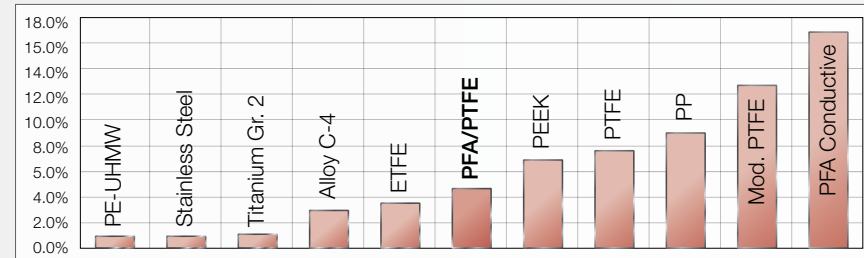


* 6x4x10" and 4x3x10H" only for speeds up to 1750 rpm

Material quality

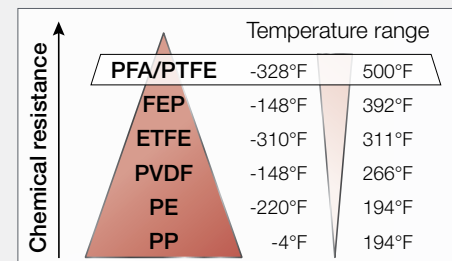
Richter pumps are a reliable solution, providing more flexibility as pumps lined with pure PFA/PTFE can operate as multi-purpose pumps with higher temperature ranges.

Abrasion percentage by material type



Testing conditions: 2kg arenaceous quartz, 3.6kg blasting abrasive, 2.4 L water, 1450 rpm, 72 hours

Temperature range by material type



Data published by resin manufacturers, different from pump operating range

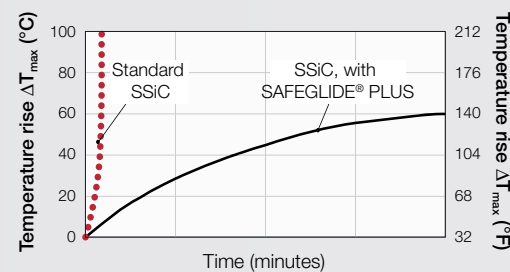
To further meet your requirements, **OUR PRODUCT LINE CONTINUES TO EXPAND**. Ask your sales representative for more information on this product.

SAFEGLIDE® PLUS dry-run optimized silicon carbide (SSiC) bearing system

SSiC and SAFEGLIDE® PLUS are extremely corrosion and abrasion resistant. The SSiC radial sleeve bearings are positively locked in the impeller/magnet assembly and rotate on the SSiC shaft. The SSiC impeller thrust ring controls axial thrust.

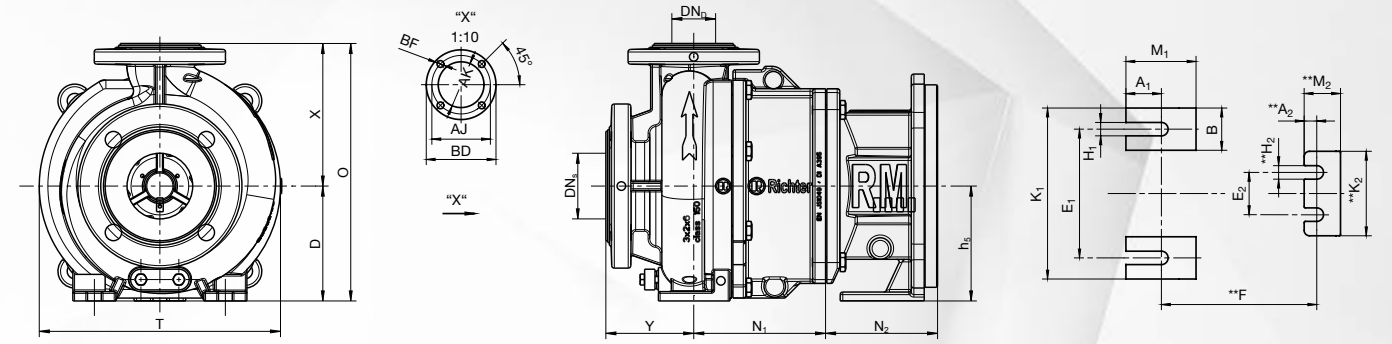
SAFEGLIDE® PLUS offers unique dry-run properties protecting against dry-run damage for a reasonable period should lubricating fluid be absent.

Temperature rise



Dimensions

for close-coupled pumps with NEMA motors



Pump dimensions - inch (mm)

Group	ANSI B73.3 Designation	Pump Size	DN _s	DN _d	D	N ₁	O	T	X	Y	h _s
1	AA	1.5 x 1 x 6"	1.5 (38.1)	1 (25.4)	5.25 (133)	6.02 (152.9)	11.75 (298)	11.02 (280)	6.5 (165)	4.02 (102)	5.25 (133)
	AB	3 x 1.5 x 6"	3 (76.2)	1.5 (38.1)				11.4 (290)			
	AC	3 x 2 x 6"	2 (50.8)	1 (25.4)							
2	AA	1.5 x 1 x 6"	1.5 (38.1)	1 (25.4)	8.25 (210)	6.69 (169.9)	17.75 (450)	16.7 (425)	9.5 (242)	4.02 (102)	8.25 (210)
	A50	3 x 1.5 x 8"	3 (76.2)	1.5 (38.1)				13 (330)			
	A60	3 x 2 x 8"	2 (50.8)	1 (25.4)				19.3 (490)			
	A70	4 x 3 x 8"	4 (101.6)	3 (76.2)				15 (380)			
	A60	3 x 2 x 10"	3 (76.2)	2 (50.8)				19.3 (490)			
	A70	4 x 3 x 10"	6 (152.4)	3 (76.2)				15.4 (391)			
A80	6 x 4 x 10"	4 (101.6)	10 (254)	23.5 (597)	16.7 (424)	13.5 (343)					

Foot dimensions - inch (mm)

Group	Pump Size	B	M ₁	A ₁	M ₂	A ₂	K ₁	E ₁	E ₂	K ₂	H ₁	H ₂	F
1	1.5 x 1 x 6"	1.97 (50)	3.07 (78)	1.42 (36)	3.84 (97.5)	0.55 (14)	7.97 (202.4)	6 (152.4)	0	2.36 (60)	0.63 (16)	0.63 (16)	7.24 (184)
	3 x 1.5 x 6"		3.27 (83)	1.61 (41)									
	3 x 2 x 6"		3.07 (78)	1.42 (36)									
	1.5 x 1 x 8"		3.07 (78)	1.42 (36)									
2	3 x 1.5 x 8"	1.97 (50)	3.27 (83)	1.61 (41)	1.89 (48)	0.98 (25)	11.7 (298)	9.76 (248)	7.24 (184)	8.98 (228)	0.63 (16)	0.63 (16)	12.5 (318)
	3 x 2 x 8"		3.54 (90)	1.77 (45)									
	4 x 3 x 8"		3.27 (83)	1.61 (41)									
	3 x 2 x 10"		3.27 (83)	1.61 (41)									
	4 x 3 x 10"		3.27 (83)	1.61 (41)									
	6 x 4 x 10"		3.15 (80)	4.33 (110)									

Support bracket dimensions - inch (mm)

Group	NEMA motor	N ₂	BD	AK	AJ	BF			
1	140 TC	4.50 (114.5)	10.24 (260)	4.5 (114.3)	5.88 (149.23)	7/16 (11.1)			
	180 TC	5.12 (130)	9.5 (235)	8.5 (215.9)	7.25 (184.2)	9/16 (14.3)			
	210 TC								
	250 TC								
	280 TC	5.71 (145)	11.2 (285)	10.5 (266.7)	9 (228.6)				
280 TSC	5.31 (135)	13.19 (335)	12.5 (317.5)	11 (279.4)	11/16 (17.5)				
2	180 TC	6.79 (172.5)	13.19 (335)	8.5 (215.9)	7.25 (184.2)	9/16 (14.3)			
	210 TC								
	250 TC								
	280 TC						10.5 (266.7)	9 (228.6)	
	280 TSC						12.5 (317.5)	11 (279.4)	11/16 (17.5)
	320 TC								
	320 TSC								
360 TSC	7.38 (187.5)								
400 TSC	6.79 (172.5)								

Contact your sales representative for **CUSTOMIZED CURVES AND DATA SHEETS**

Your Richter representative can provide a case-by-case review including the ability to create curves and data sheets customized to your specific application.

Richter RMA, RMA-B Pumps

DIMENSIONALLY INTERCHANGEABLE WITH ASME B73.3 PUMPS



**Dry-Run
Protection**



**Superior Solids
Handling**



**Temperatures
to 300°F (150°C)**



**Balanced
Operation**



**Quality, FDA Approved
Pure PFA/PTFE Lining**



Save money and maintain reliability
WITHOUT CHANGING YOUR ENTIRE SYSTEM

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