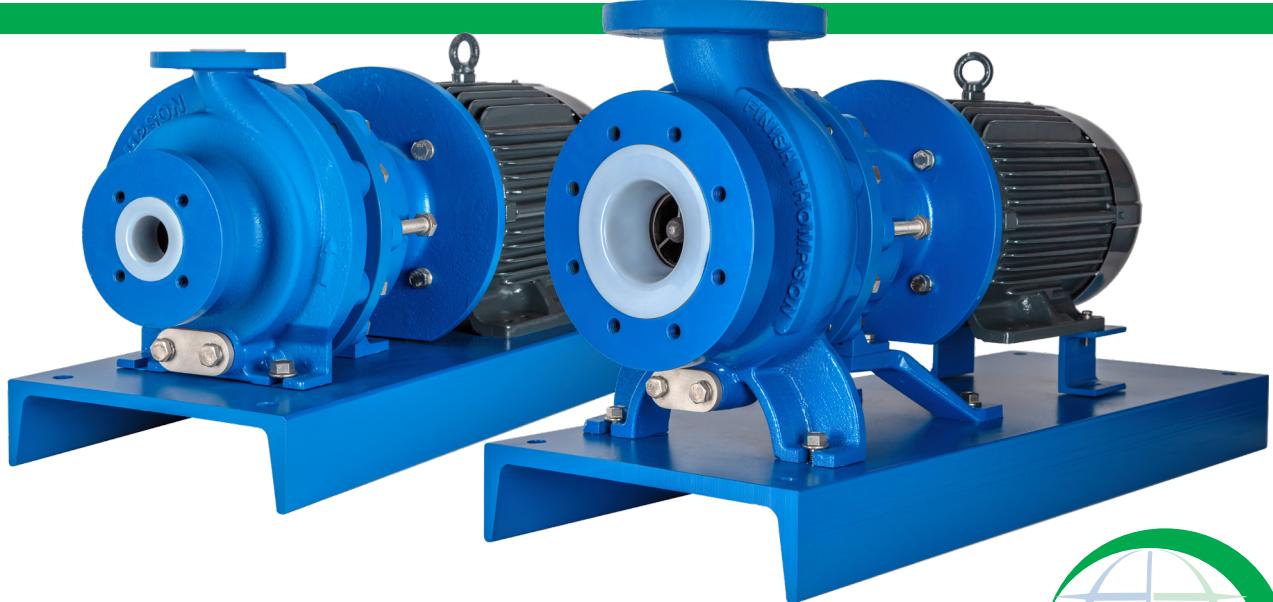


ANSI DIMENSIONAL MAGNETIC DRIVE PUMPS
ULTRACHEM® | UCR SERIES



PUMPING SOLUTIONS **AROUND THE WORLD**

FINISH THOMPSON INC.

finishtompson.com



FINISH THOMPSON INC.

Engineered for extreme reliability in the most challenging chemical applications.



ULTRA RELIABLE

- Sealless, magnetic drive, ANSI-dimensional centrifugal pump
- Constructed from tough ductile iron with pure, unfilled ETFE lining for superior corrosion resistance

ULTRA DURABLE

- Industry's lowest radial loads
- Fully supported, single geometry shaft
- Dual bushings reduce stress
- Careful design balances axial forces inside the pump, controlling thrust
- Complete encapsulation of inner magnets in pure, unfilled ETFE prevents permeation by aggressive chemistry
- Barrier is pure, unfilled ETFE liner for maximum protection against chemical permeation with carbon-fiber reinforced exterior for exceptional strength

ULTRA SAFE

- Powerful neodymium magnets drive the impeller through the barrier, eliminating the need for mechanical seals
- Prevents leakage of dangerous fluids
- Prevents fugitive emissions
- Improves workplace safety by eliminating exposure of direct liquid contact or vapors

UCR SERIES SPECIFICATIONS

- **Max. Working Pressure:** to 300 psi (20 Bar)
- **Max. Temp:** 250°F (121°C)
- **Max. Viscosity:** over 200 cP
- **Specific Gravity:** Over 1.8
- **Casing:** ANSI/ASME B73.1m & 73.3
- **Flanges:** ANSI, ISO PN20 or PN40/DIN
- **Certifications:** CE, UKCA, ATEX
- **Motor Frames:**
 - NEMA: 143 through 405
 - IEC: 90 through 280
 - Bearing frame
 - Gas engine



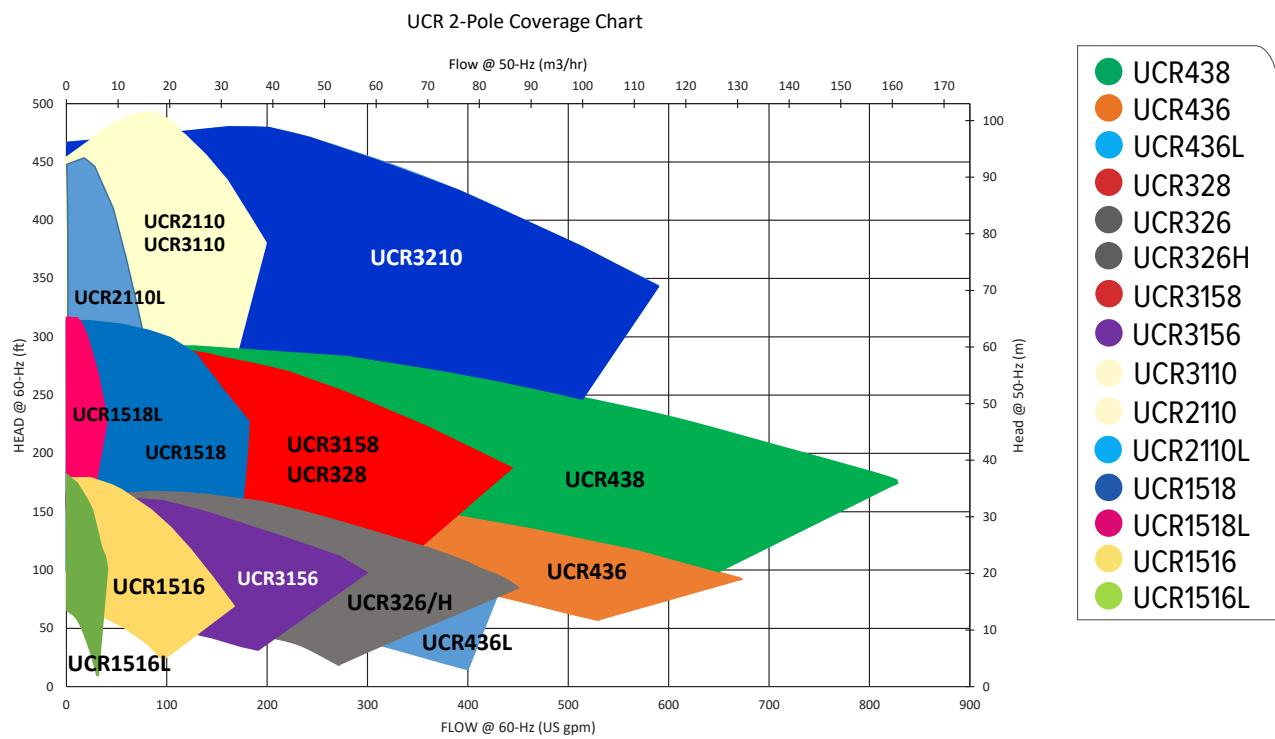
UCR SERIES APPLICATIONS

- Chemical processes
- Steel processing
- Water & wastewater
- Electronics manufacturing
- Surface finishing
- Paper mills
- Biofuels
- Fume scrubbing
- Metal plating
- Pharmaceutical

TYPICAL CHEMICALS:

Sodium hydroxide, sulfuric acid, hydrochloric acid, sodium hypochlorite, plating solutions, corrosive blends, wastewater and solvents.

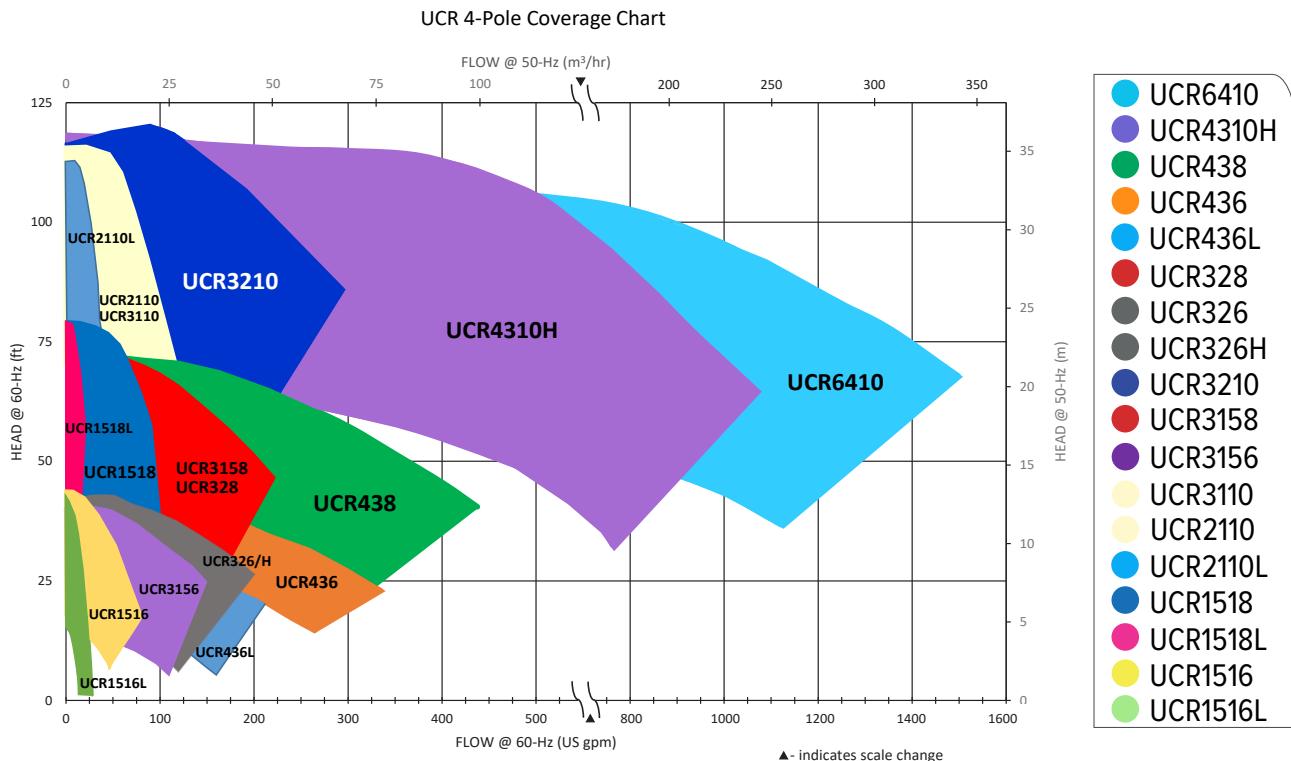
UCR COVERAGE CURVE 3500/2900 RPM



The pump selector program is designed to allow you to easily search Finish Thompson's collection of centrifugal pumps to find the products that most closely match your hydraulic and application criteria.



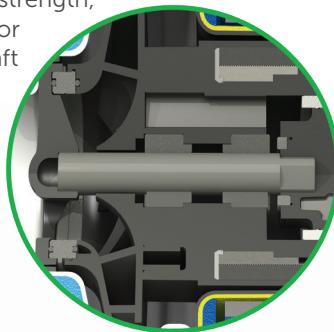
UCR COVERAGE CURVE 1750/1450 RPM



EXPLODED VIEW & MATERIAL OPTIONS

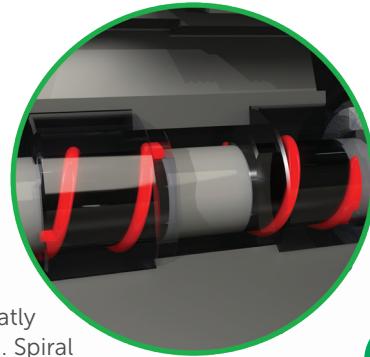
Rugged Shaft

A single geometry, high strength, simply supported shaft for maximum durability. Shaft is supported in both the front and the back of the pump, resulting in virtually no deflection, which can be found in cantilevered designs.

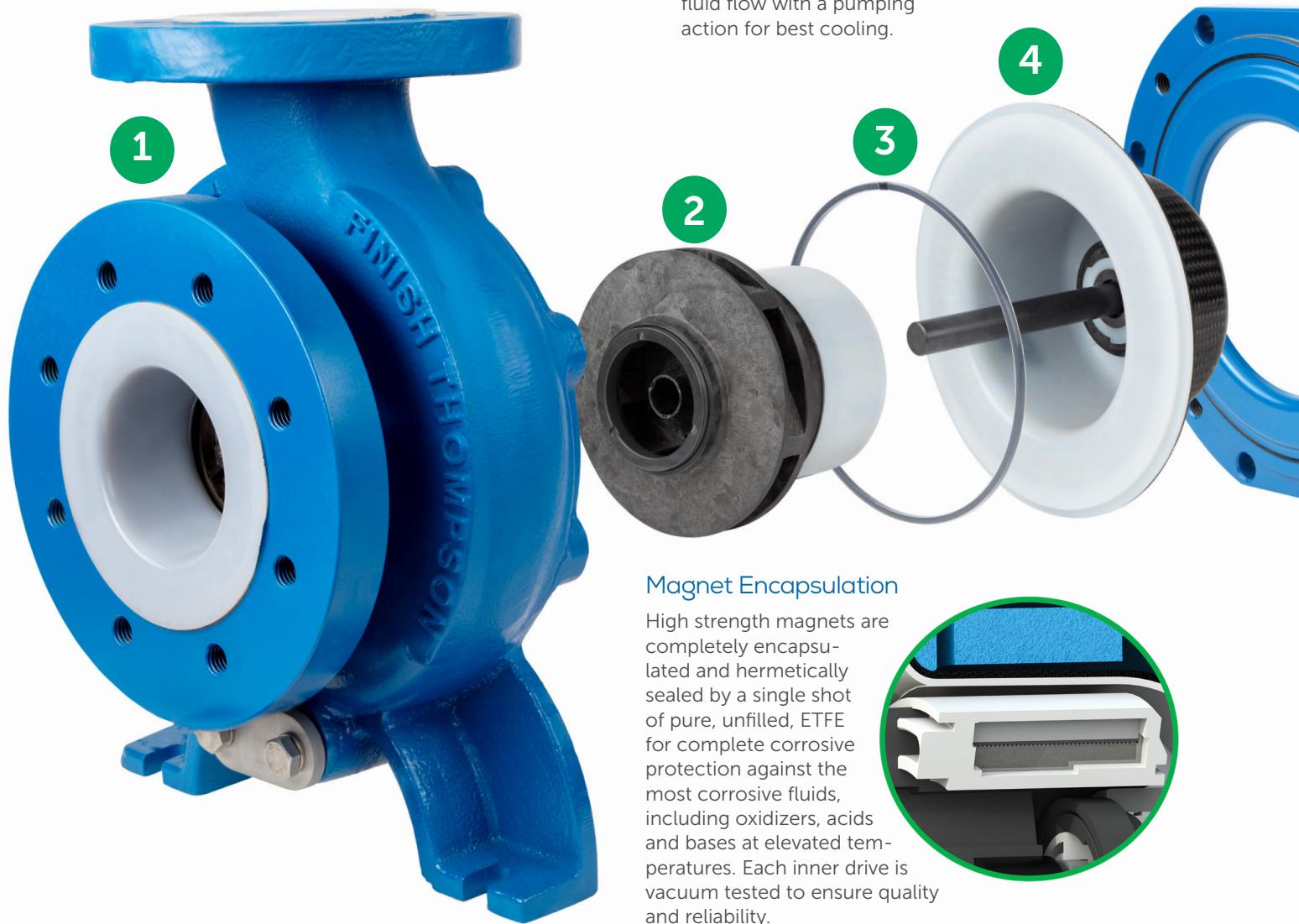


Dual Bushings

Dual bushings greatly reduces shaft load. Spiral groove pathway enhances fluid flow with a pumping action for best cooling.



5



Magnet Encapsulation

High strength magnets are completely encapsulated and hermetically sealed by a single shot of pure, unfilled, ETFE for complete corrosive protection against the most corrosive fluids, including oxidizers, acids and bases at elevated temperatures. Each inner drive is vacuum tested to ensure quality and reliability.



1 CASING, SHAFT SUPPORT, FRONT THRUST RING

Cast ductile iron with pure ETFE lining; carbon fiber reinforced ETFE (front shaft support); alpha sintered silicon carbide (thrust ring)

2 IMPELLER ASSEMBLY, IMPELLER THRUST RING, IMPELLER DRIVE HUB, BUSHINGS

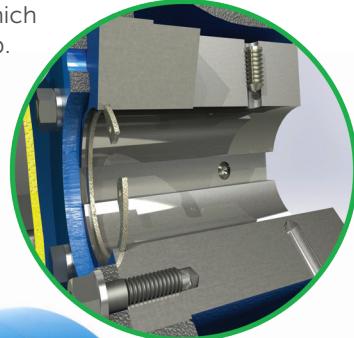
Carbon fiber reinforced ETFE (impeller); Fluorosint® or alpha sintered SiC (thrust ring); neodymium iron boron magnets (drive hub); carbon or alpha-sintered SiC [Dri-Coat DLC optional] (bushings)

3 SHAFT, HOUSING O-RING

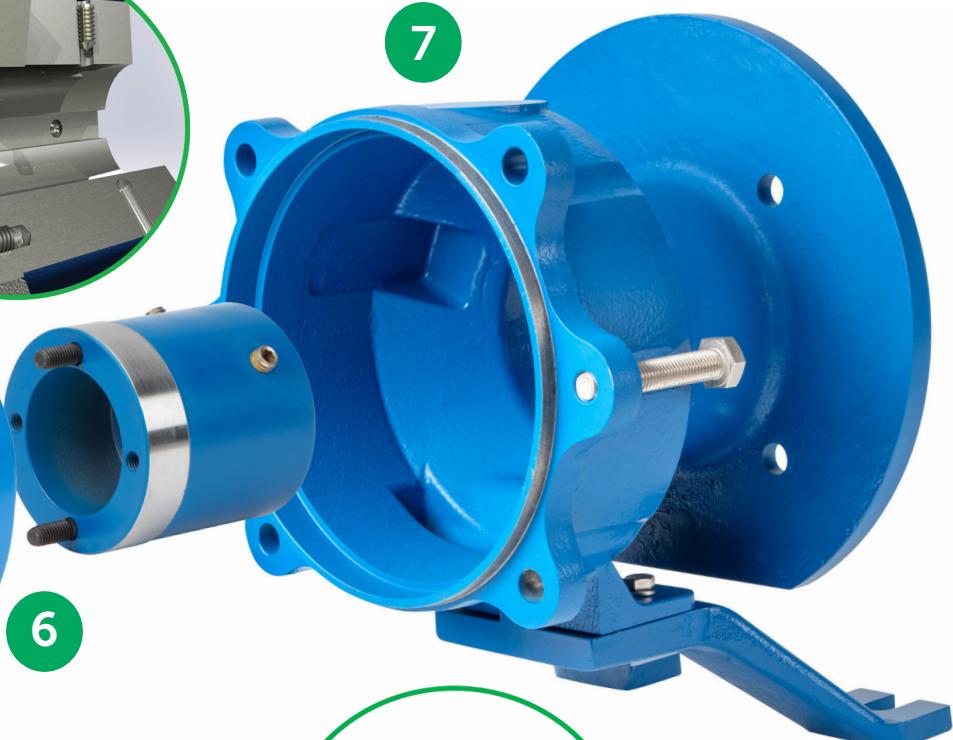
Alpha sintered SiC (Dri-Coat DLC optional) shaft; FEP encapsulated FKM (FKM, EPDM, FFKM, e.g., Kalrez®, Simriz® optional) o-ring

Easy Set Outer Drive

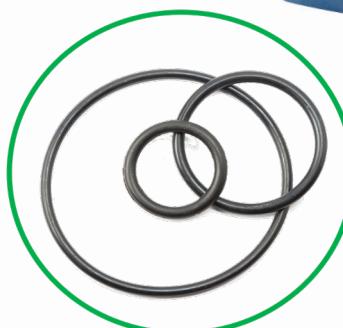
Shaft adapter has Easy Drive feature to ensure perfect magnet alignment for maximum transfer of power and easy installation. No measuring required. Simply slide the drive onto the motor shaft until it is against the locating ring, which acts as a pre-measured stop.



7

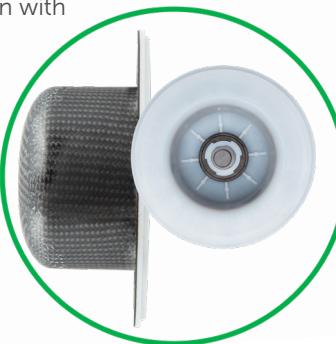


6



Vapor Protection Package

Three non-wetted O-rings help protect the outer drive and motor face from exposure to corrosive vapors.



4 REAR SEALING RING, BARRIER, REAR THRUST RING

Moly-filled PTFE (sealing ring), pure ETFE liner with carbon-fiber reinforced external shell (barrier), alpha sintered SiC (thrust ring)

Kalrez® is a registered trademark of DuPont Performance Elastomers.

Simriz® Perfluoroelastomer is a registered trademark of the Simrit® division of Freudenberg-NOK.

Fluorosint® is a registered trademark of Quadrant DSM Engineering Plastic Products.

5 CLAMP RING

Ductile iron

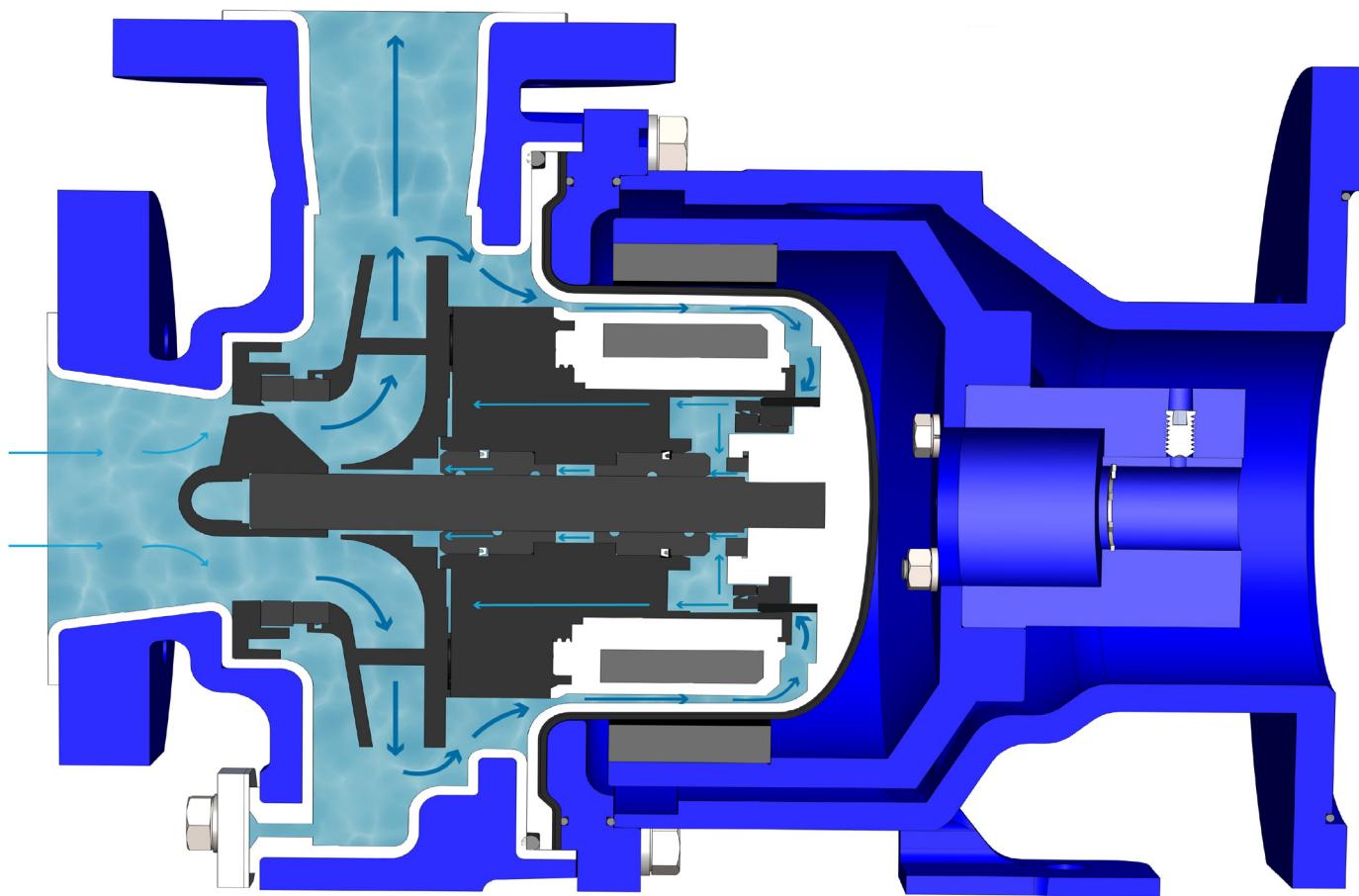
6 OUTER DRIVE, SHAFT ADAPTER

Nickel-plated neodymium iron boron magnets/ductile iron (drive); machined steel (adapter)

7 MOTOR ADAPTER

Heavy duty ductile iron with 1/2" (12.7mm) drain/instrumentation port with stainless steel plug and a flat on top for a vibration sensor

ULTRACHEM THRUST AND INTERNAL CIRCULATION



Unlike conventional sealed centrifugal pumps, the hydraulic radial and axial thrust loads must be absorbed internally by a magnetic drive pump. The UCR Series is engineered to reduce these radial and axial loads to a minimum, in order to maximize the wear life of components. Finish Thompson uses a variety of housing styles to help control radial load. The method chosen is dependent upon the pump's internal design and each work equally well.

The liquid enters the pump at suction pressure and is accelerated in the impeller. Some of the pressurized liquid flows to the rear of the impeller and proceeds through an annular orifice between the inner magnetic drive bore and a stationary sealing ring in the barrier.

After exiting the orifice, the flow splits, with some going through the bushing to the pump suction, keeping the bushing lubricated. The remainder flows through impeller balance holes (some models) to the pump suction.

This stabilized, forward-thrust design allows full curve reliability without compromising pump life.

MODULAR DESIGN



Single Piece, Removable Impeller

Impeller is molded as one piece and securely mounted to the inner drive magnet with a locking mechanism, which allows replacement in the field.

- Eliminates need to purchase expensive single-piece impeller magnet assembly.
- Allows impeller diameter to be changed at a lower cost.
- Impeller thrust ring is field replaceable.
- Allows a pump end to be converted to fit multiple applications.

Outer Drive Magnet/Shaft Adapters

- All frame sizes feature dynamically balanced outer drive assembly fitted securely to the shaft adapter with four bolts.
- Single drive fits multiple-motor shaft adapters.
- Adapters are machined to fit each motor shaft diameter.
- All shaft adapters feature Easy Set Drive and alignment studs for assembly.
- Easily identifiable, multiple pole drive magnets match strength to motor power, reducing cost.



Motor Adapter

Motor adapter fits multiple frame sizes.

- Eliminates the need for specialized individual motor adapter flanges.
- Simplifies installation and inventory.
- Optional bronze ring makes it suitable for hazardous areas and is ATEX-certified, providing maximum safety.
- Two jack screws facilitate assembly and disassembly.
- Top mounting pad allows for vibration/IOT monitor attachment.
- Standard 1/2" (12.7mm) NPT drain/instrument port with stainless steel plug. Allows for drainage/leak detection with customer-supplied conductivity probe.

REPLACEABLE WEAR PARTS

All service parts are made of highly corrosion-resistant materials. Individual components as well as spare parts kits containing key wear components. Ideal for preventative maintenance.



- **SHAFT**
Replaceable alpha sintered silicon carbide (Dri-coat DLC optional)
- **BUSHINGS**
Alpha sintered silicon carbide bushings (carbon or Dri-Coat SiC optional)
- **O-RING**
FEP encapsulated FKM (FKM, EPDM, FFKM, e.g., Kalrez®, Simriz® optional)

- **FRONT THRUST RING**
Alpha sintered silicon carbide
- **REAR SEALING RING**
Molybdenum disulfide filled PTFE
- **IMPELLER THRUST RING**
Alpha sintered silicon carbide or Fluorosint®

Dri-Coat (DLC)

Dri-Coat technology gives silicon carbide components the ability to run dry for brief periods.

- Especially helpful during installation, where the electrician may start the pump before it is flooded to check rotation.
- An advanced coating technique deposits a thin layer of specialized carbon over the silicon carbide bushings and shaft. The resulting diamond-like coating (DLC) is very hard, chemically inert, and has a very low coefficient of friction, which provides run dry protection.



Cartridge Kits

Cartridge kits make it easy to repair pumps in the field where the casting is in good condition, but other items are damaged beyond repair. Two options are available:

Wet End Without Housing

- Recommended when catastrophic pump failure occurs where the rear barrier has not been breached and the outer magnets and motor are in good condition.
- Includes wetted components, from shaft support to barrier plus clamp ring, drain cap, and gasket.



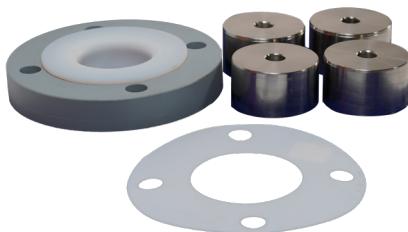
Complete Pump Without Housing or Motor

- Recommended where catastrophic pump failure occurs, where the wetted components have been damaged and the rear barrier has been breached, damaging the outer drive magnet.

ACCESSORIES

UCR438 & UCR4310H ANSI A70 to A40 Conversion Kit

Includes 1.75" foot riser, 1.5" PTFE armored flange spacer, and PTFE gasket to convert standard UCR438 and UCR4310H from A70 to A40 dimensions.



Thermowell Kit Option

Kit contains a silicon carbide thermowell, modified drain cap with 1/4" NPT threaded hole, two Gylon® expanded PTFE gaskets, and bayonet adapter to ensure the customer-supplied, spring-loaded thermocouple is pressing against the silicon carbide for the best accuracy and response time.



ACCESSORIES

Digital Power Monitor

The power monitor is designed to use the motor as a sensor to instantly sense a change in power when a pump is run dry or deadheaded and quickly shut the pump down before damage can occur.



- Monitors only the power used by the pump and eliminates losses from the motor.
- Ideal for tank unloading/emptying, vortexing, plugged stainers, startup errors, and system upset, all of which can result in run dry conditions or deadheading.



Long-Coupled Bearing Frame

Utilizes pump bearing frame and flexible coupling between the pump and motor.

- Cost-effective replacement for troublesome sealed pumps by allowing use of existing motors.
- ANSI dimensional design provides drop in replacement.
- Ideal when isolated pump from motor drive is desired.
- Allows use of alternative drives such as non-C face, DC, air, pulley, or hydraulic.
- Magnetic drain plug on flood oil unit.



Bronze Bump Ring Option for Hazardous Locations

Bronze ring is added to the motor adapter, providing a non-sparking surface.



- In the event of a motor bearing failure, prevents contact between the ductile iron outer drive and the ductile iron motor adapter.
- Option makes the pump ATEX-certified and meets the requirements of Group II, Category 2 equipment.



Base Plates

- Provides a sturdy mounting for the pump/motor.
- No layout and fabrications, simplifies site installation.
- Raises the pump off the floor to reduce exposure to corrosive liquids.
- Available in epoxy painted steel, 316 stainless steel, fiberglass, or polymer concrete.
- Polymer concrete baseplates feature superior flatness, 0.002"/foot (.05 mm/.03 meter), stainless steel cast in place threaded inserts, superior dampening, foundation bolt holes, standard grout hole, integrated sloping drip pan with drain port, and complies with most engineering specifications.
- Factory mounting includes stainless steel hardware and shims (if required).

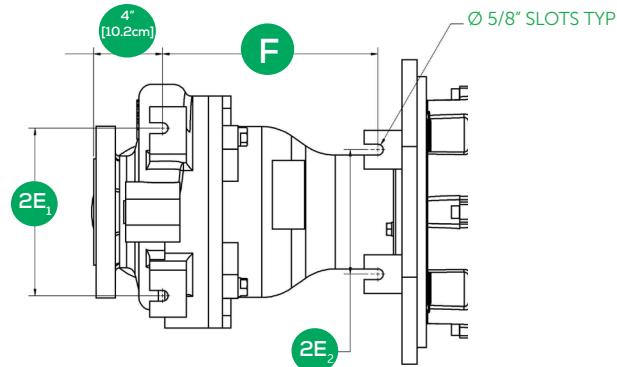
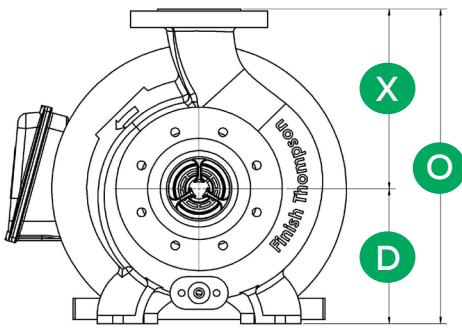
Gas Engine Option

- Gas engine option eliminates the need for electricity.
- Ideal for chemical delivery and hazmat trucks.
- Remote location railcar and tanker truck unloading.
- Emergency standby pump.
- Operates at 3500 rpm and runs about two hours on a tank of gas.
- High quality Honda engines.

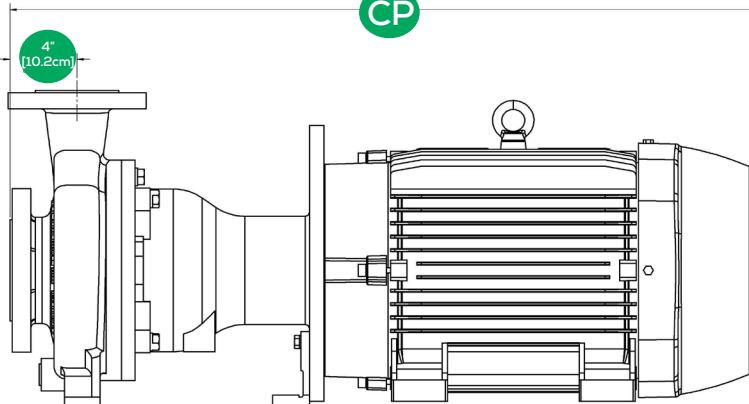
CONTACT FINISH THOMPSON FOR MORE INFORMATION

DIMENSIONS & HORSEPOWER

FRONT VIEW All models



SIDE VIEW All models



UCRI MODELS

UCR1516/1516L, UCR1518/1518L, UCR3156,
UCR326/326H, UCR436L

MOTOR FRAMES	CP (APPROX.)	
	(in)	(mm)
NEMA		
143/145TC	23-17/32	598
182/184TC	28-3/32	713
213/215TC	31-5/32	791
254/256TC	34-9/32	871
284/286TSC	36-11/16	932
IEC		
90 B14/B5	23-19/32	599
100/112 B14	25-1/32	636
132 B5	31-3/32	790
160 B5	34-27/32	885

MODEL	MAXIMUM POWER hp (kW)
UCR1516/1516L	30 (22)
UCR1518/UCR1518L	30 (22)
UCR2110/2110L	75 (55)
UCR3110	75 (55)
UCR3156	30 (22)
UCR3158	75 (55)
UCR326/326H	30 (22)
UCR328	75 (55)
UCR3210	100 (75)
UCR436	75 (55)
UCR436L	30 (22)
UCR438	100 (75)
UCR4310H	50 (37)*
UCR6410	50 (37)*

*4-pole motors only

Note: For additional dimensions, please refer to outline dimensional drawings for all models located on our website.

UCRII MODELS

UCR2110/2110L, UCR3110, UCR3158, UCR328,
UCR3210, UCR436, UCR438, UCR4310H, UCR6410

MOTOR FRAMES	CP (APPROX.)	
	(in)	(mm)
NEMA		
143-145TC	27-11/16	703
182/184TC	29-9/16	751
213/215TC	32-5/8	829
254/256TC	37-1/2	953
282/284TC/TSC	39-27/32	1012
324/326TC/TSC	44-21/32	1134
364/365TC/TSC	46-27/32	1190
404/405/TSC	50-5/16	1278
IEC		
90 B5	27-15/32	698
100/112 B5	28-29/32	734
132 B5	32-9/16	827
160 B5	38-9/32	972
180 B5	40-9/16	1030
200 B5	43-3/32	1095
225 B5	46-21/32	1185
250 B5	52-17/32	1334
280 B5	56-3/4	1441

DIMENSIONS

MODEL	SUCTION in (mm)	DISCHARGE in (mm)	ANSI NO.	O in (mm)	D in (mm)	X in (mm)	2E ₁ in (mm)	2E ₂ in (mm)	F in (mm)	SLOT QTY	SLOT DIAMETER in (mm)
UCR1516	1-1/2 (38)	1 (25)	AA	11-3/4 (298)	5-1/4 (133)	6-1/2 (165)	6 (152)	-	7-11/32 (186)	3	5/8 (16)
UCR1516L	1-1/2 (38)	1 (25)	AA	11-3/4 (298)	5-1/4 (133)	6-1/2 (165)	6 (152)	-	7-11/32 (186)	3	5/8 (16)
UCR1518	1-1/2 (38)	1 (25)	AA	11-3/4 (298)	5-1/4 (133)	6-1/2 (165)	6 (152)	-	7-11/32 (186)	3	5/8 (16)
UCR1518L	1-1/2 (38)	1 (25)	AA	11-3/4 (298)	5-1/4 (133)	6-1/2 (165)	6 (152)	-	7-11/32 (186)	3	5/8 (16)
UCR2110	2 (50)	1 (25)	A05	16-3/4 (425)	8-1/4 (210)	8-1/2 (216)	9-3/4 (248)	7-1/4 (184)	12-1/2 (318)	4	5/8 (16)
UCR2110L	2 (50)	1 (25)	A05	16-3/4 (425)	8-1/4 (210)	8-1/2 (216)	9-3/4 (248)	7-1/4 (184)	12-1/2 (318)	4	5/8 (16)
UCR3110	3 (76)	1 (25)	--	16-3/4 (425)	8-1/4 (210)	8-1/2 (216)	9-3/4 (248)	7-1/4 (184)	12-1/2 (318)	4	5/8 (16)
UCR3156	3 (76)	1-1/2 (38)	AA	11-3/4 (298)	5-1/4 (133)	6-1/2 (165)	6 (152)	-	7-9/16 (192)	3	5/8 (16)
UCR3158	3 (76)	1-1/2 (38)	A50	16-3/4 (425)	8-1/4 (210)	8-1/2 (216)	9-3/4 (248)	7-1/4 (184)	12-1/2 (318)	4	5/8 (16)
UCR326	3 (76)	2 (50)	--	11-3/4 (298)	5-1/4 (133)	6-1/2 (165)	6 (152)	-	7-9/16 (192)	3	5/8 (16)
UCR326H	3 (76)	2 (50)	A10	16-1/2 (419)	8-1/4 (210)	8-1/4 (210)	9-3/4 (248)	7-1/4 (184)	12-7/16 (316)	4	5/8 (16)
UCR328	3 (76)	2 (50)	A60	17-3/4 (450)	8-1/4 (210)	9-1/2 (241)	9-3/4 (248)	7-1/4 (184)	12-1/2 (318)	4	5/8 (16)
UCR3210	3 (76)	2 (50)	A60	17-3/4 (450)	8-1/4 (210)	9-1/2 (241)	9-3/4 (248)	7-1/4 (184)	12-15/32 (317)	4	5/8 (16)
UCR436	4 (102)	3 (76)	--	16-3/4 (425)	8-1/4 (210)	8-1/2 (216)	9-3/4 (248)	7-1/4 (184)	12-1/2 (318)	4	5/8 (16)
UCR436L	4 (102)	3 (76)	--	16-1/2 (419)	8-1/4 (210)	8-1/4 (210)	9-3/4 (248)	7-1/4 (184)	12-7/16 (316)	4	5/8 (16)
UCR438	4 (102)	3 (76)	A70	19-1/4 (489)	8-1/4 (210)	11 (279)	9-3/4 (248)	7-1/4 (184)	12-1/2 (318)	4	5/8 (16)
UCR4310H	4 (102)	3 (76)	A70	19-1/4 (489)	8-1/4 (210)	11 (279)	9-3/4 (248)	7-1/4 (184)	12-1/2 (318)	4	5/8 (16)
UCR6410	6 (152)	4 (102)	A80	23-1/2 (597)	10 (254)	13-1/2 (343)	9-3/4 (248)	7-1/4 (184)	12-1/2 (318)	4	5/8 (16)



OTHER GREAT PRODUCTS FROM FINISH THOMPSON



DB & SP SERIES

PREMIUM MAGNETIC
DRIVE SEALLESS
CENTRIFUGAL PUMPS



MSDB SERIES

PREMIUM MULTISTAGE
MAGNETIC DRIVE
SEALLESS CENTRIFUGAL
PUMPS



DRUM/BARREL

PORTABLE FLUID
TRANSFER SOLUTIONS



GP SERIES

SEALED PLASTIC
CENTRIFUGAL PUMPS



AP SERIES

SEALED STAINLESS
STEEL CENTRIFUGAL
PUMPS



VKC SERIES

VERTICAL MAGNETIC
DRIVE SEALLESS
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THAT MEET APPLICATION CRITERIA.



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