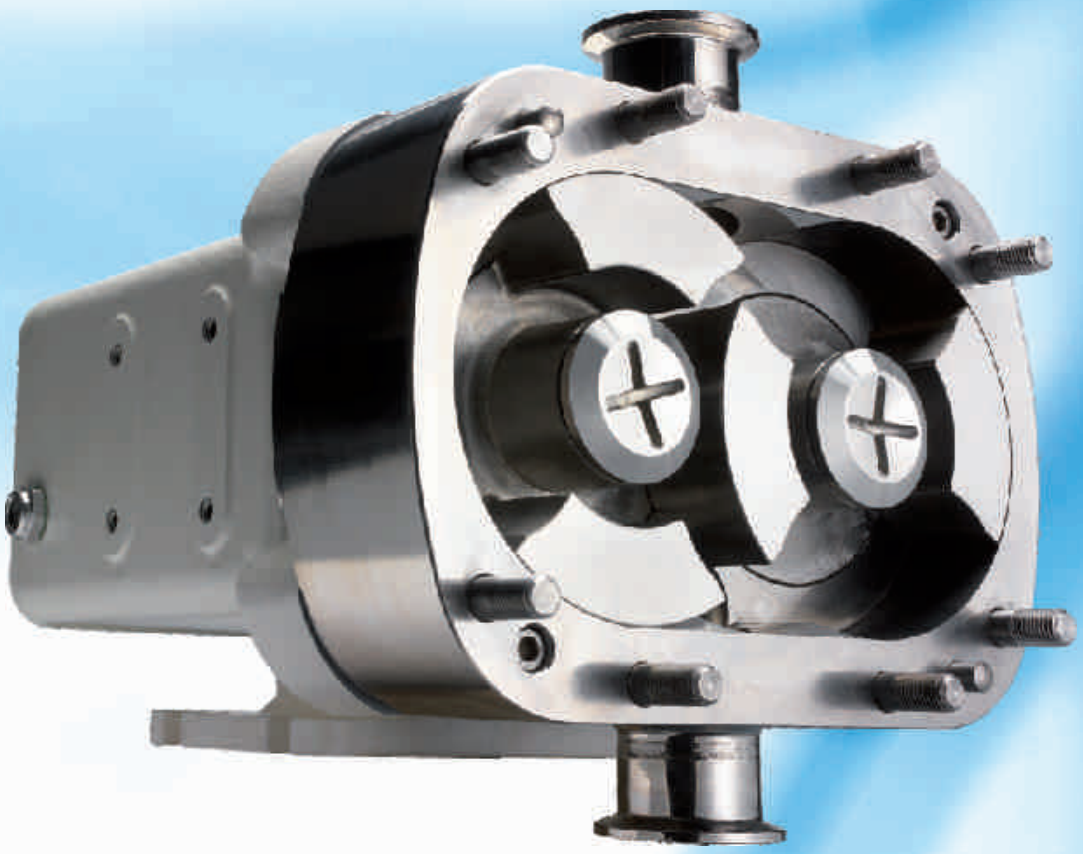
wright flow
TECHNOLOGIES

Revolution™

Increase your expectations!



PATENT PENDING

TYPICAL APPLICATIONS

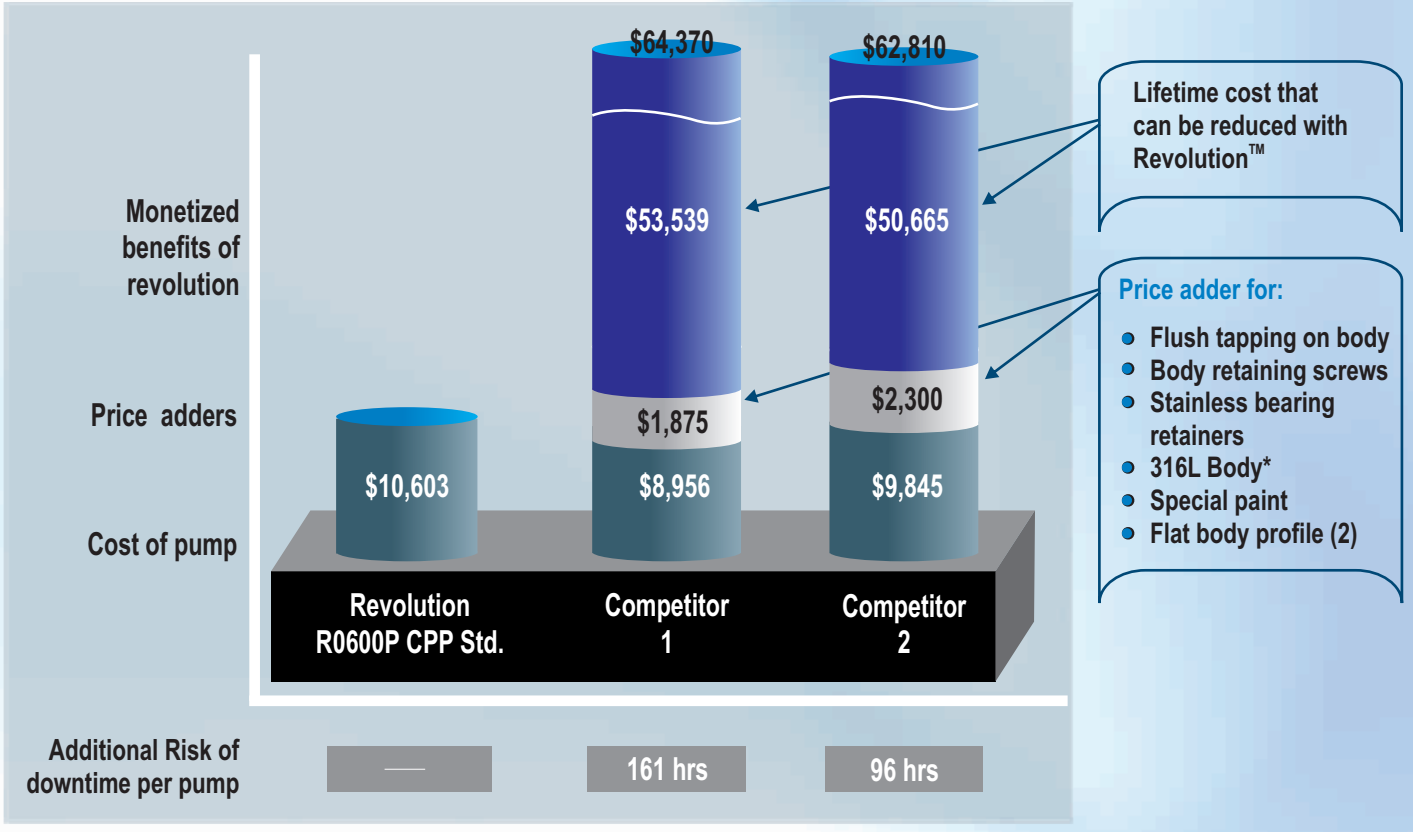
Food, Beverage, Pharmaceuticals, Bio-Pharmaceuticals, Personal Care, Chemical, and other demanding industries

Save on ownership cost by upgrading your process

The Revolution™ is the latest innovation in Positive Displacement Pumps for the sanitary and industrial markets, merging the benefits of competing technologies into one platform: Rotary Lobe (RLP) & Circumferential Piston (CPP).

If you are interested in lowering your total ownership cost by **up to $50,000 USD* per pump** and avoiding **up to 160 hrs of downtime per pump**, we encourage you to find out more about how Wright Flow Technologies new Revolution™ can help you achieve your productivity goals.

Monetized example of Revolution R0600P vs. Competitors



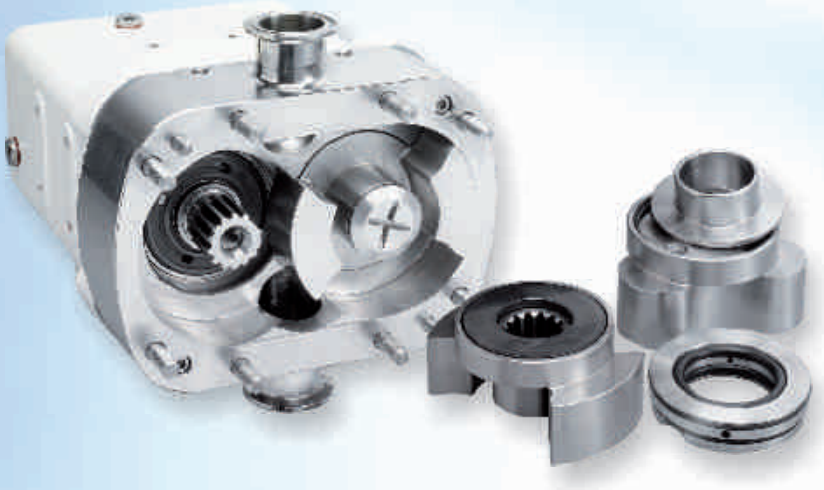
Notes:

A customized scenario needs to be adapted to fit each customer's application and operating parameters.
The accuracy of the calculated savings depends predominantly on the accuracy of the customer's supplied data.

*** Or its cast equivalent.**

Product features and examples of customer benefits:

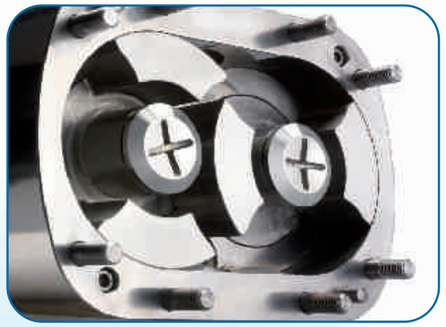
	Value of benefits	Customized savings	Comments
Increase product yield			
▪ Gentle solids handling through improved rotor geometry, additional displacements & elimination of cavities and chamber features	$14,400		Over 20,000 hrs of operation
Increase equipment lifetime & process uptime -			
▪ Front loading seals in balanced execution last two to three times longer than conventional seals	$500		One time savings
▪ Heavy duty shafts, pump is able to handle higher pressures and greater loads with less deflection	$1,023		One time savings
▪ Gamma seal provides additional protection to the gearbox from pressure washers or product entering the gearbox through front oil lip seals (optional)	$2,082		One time savings
Online Cleanability			
▪ Designed for Clean in Place (CIP) as standard, in compliance with stringent sanitary requirements - Enhanced rotor case geometry enables self draining. This minimises risk of contamination & maximizes product yield. - No dead zones in front cover enables proper cleaning	$2,600		Yearly savings
▪ Rotor design improves liquid access to seal and eliminates dead legs present in competitor products	$2,080		Yearly savings
Reduce installation & maintenance expense			
▪ Reduce inventory with common gear boxes to fit CPP and RLP, simplifies stock and spares. Customers can now stock modules and reduce the complexity of inventory	$900		Yearly savings
▪ Eliminate the risk of rotor holding nuts becoming loose with improved rotor retainer design	$1,050		One time savings
▪ Generous seal access facilitates front loading and removal of all seal variations, saving time and money when routine maintenance is required	$175		Yearly savings
▪ Maintenance free lubrication eliminates the need to control and change lubricant (optional). It also reduces risk of contamination through breather plug	$150		Yearly savings
▪ Front and back rotor clearance adjustment is performed externally to the gearbox, simplifying maintenance	$100		Yearly savings
Reduce system costs			
▪ Reduce the systems' procurement costs through increased pressure ratings, optimized displacements, and the extension of the range of capacities	$12,700		One time savings



PATENT PENDING

Times are changing – Increase your expectations!

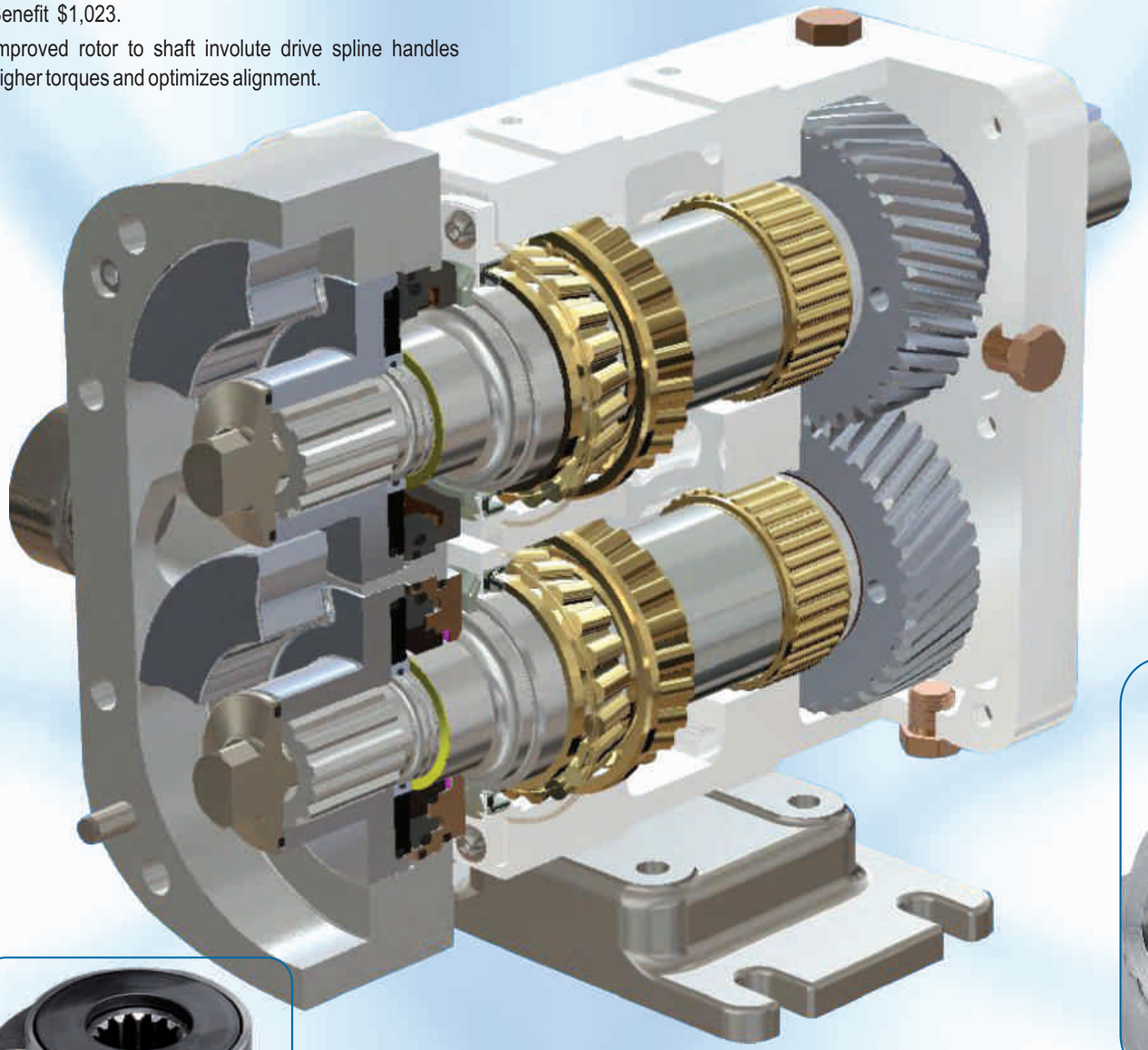
- Innovative chamber geometry improves efficiency
- Rotor case is self-draining with vertical ports. This reduces risk of contamination & maximizes product yield



- New CIP design eliminates need to strip clean. Benefit $2,600/yr.
- No Dead Zones on front cover
- Eliminate the risk of rotor retainers loosening. Benefits $1,050

- Designed for CIP / SIP with minimum back pressure < 1 Bar (15 Psi)
- Front mounting seals last two to three times longer than conventional seals by design, as a result of improved fluid access to seals, elimination of dead legs and use of centrifugal forces. Benefit $500
- Seals are balanced and can be flushed at low and/or high pressure -allows appropriate seal selection

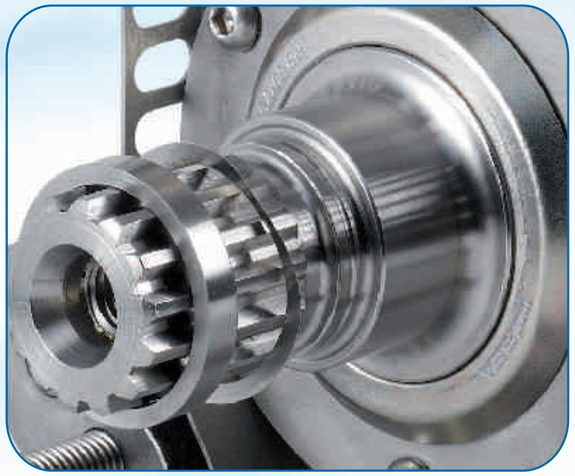
- Heavy duty shafts enable up to 50% longer lifetime. Benefit $1,023.
- Improved rotor to shaft involute drive spline handles higher torques and optimizes alignment.



- All seals are front loading- this means ease of maintenance and reduced service time. Benefit $175/yr
- Seal designed with no dead legs and dynamic leak path. Benefit $2,080/yr

- Rotor Case as standard in AISI 316L or its cast equivalent. Benefit $904
- Stainless Steel 304 Feet to eliminate corrosion (std on selected sizes)

- 100% of Gearbox components are identical for all combinations within a gearbox size.
  Benefit $900/yr
- Helical gears have approximately double the life than spur gears, and better load carrying capabilities. Benefit $150
- Maintenance free lubrication eliminates need to control & change lubricant (optional). Benefit $150/yr
- Larger bearings increase pressure capability and bearing lifetime by up to 50%. Benefit $746
- Gearbox Gamma seal provides additional protection to the gear box (optional). Benefit $2,082



- External shimming of Rotor back and front clearance. Benefit $100/yr.

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Revolution™ Construction and technical details:

Gear Box

- Std: Powder coated Cast Iron
- Opt: Stainless Steel 304
- Opt: Gamma seal protection for gear box oil seals

Rotor Case Internal Surface Finish

- Std: 0.8 µm (32 µin)
- Opt: internal finishes:m/c to 0.6µm (24 µin)
- Opt: Mech. polish to 0.5µm (20 µin) or better
- Optional for non hygienic applications 1.6µm internals & as cast externals (64 µin)

Rotor Case Materials

- Std: AISI 316L[1)]
- Opt: Hastelloys and other alloys
- Opt: Cast Iron for low/non-hygienic applications
- Opt: Abrasive resistant coatings

Rotor Materials / Options

- AISI 316L[1)]: Std. for RLP optional for CPP
- Wright 808® non-galling, nickel-based alloy for CPP
- Opt: Cast iron for low/non-hygienic applications
- Opt: Hastelloys and other alloys
- Opt: Abrasive resistant coating

Rotor Forms:

- Trilobe for RLP (4 Lobe on Size 1)
- Twin & single wing for CPP

Rotor Temperature rating:

- RLP: 70°C (160°F), 150°C (302°F) Option
- CPP: 90°C (200°F), 150°C (302°F) Option
- Opt: Front face & chocolate for CPP

Shaft Seal Arrangements

- Std: Single mechanical
- Opt: Double mechanical
- Opt: Single & double o-ring running on a replaceable sleeve

Single Seal:

- Std: Carbon(S1)[2)] vs Silicon Carbide (R)[3)]
- Opt: Silicon Carbide vs Silicon Carbide

Double Seal

- Std: Carbon (S1)[2)] Silicon Carbide (R)[3)] Carbon(S2)[2)]
- Opt: Silicon Carbide (S1)[2)] Silicon Carbide (R)[3)] Carbon (S2)[2)]
- Other options available

Port Connections

- Complete range of sanitary clamp, screw, flange and industrial screw, etc.
- Optional: Range of enlarged / hopper inlets.

Heating / Cooling Options

- 4.0 Bar operating pressure
- -20°C (-4°F) to +150°C (302°F)
- All pumps may be fitted with front cover and rotor case jackets when required

[1)]AISI 316L or its cast equivalent
[2)]S: Static Seal Face
[3)]R: Rotary Seal Face

PATENT PENDING

Revolution Sizes & Specifications

Size	Pump Type	Model	Port Size	Displacement	Displacement	Differential Pressure	Differential Pressure	Max. Speed	Maximum Displacement	Maximum Displacement
			Inches	l/rev	USG/rev	Bar	PSI	RPM	m^3/hr	USG/min
Size 1	CPP	R0035X	0.75	0.017	0.005	21	305	800	0.8	3.7
	RLP	R0035X	0.75	0.021	0.005	15	218	1000	1.2	5.5
	CPP	R0065X	1	0.035	0.009	14	203	800	1.7	7.4
	RLP	R0065X	1	0.041	0.011	7	102	1000	2.5	11.0
Size 2	CPP	R0150X	1.5	0.055	0.014	21	305	800	2.6	11.6
	RLP	R0150X	1.5	0.061	0.016	15	218	1000	3.6	16.0
	RLP	R0160L	1.5	0.081	0.021	10	145	1000	4.9	21.4
	CPP	R0180P	1.5	0.110	0.029	14	203	800	5.3	23.2
	RLP	R0180L	1.5	0.110	0.029	7	102	1000	6.6	29.1
Size 3	CPP	R0200X	1.5	0.16	0.04	21	305	800	8	34
	RLP	R0200X	1.5	0.18	0.05	14	203	1000	11	47
	CPP	R0300X	1.5	0.23	0.06	17	247	800	11	48
	RLP	R0300X	1.5	0.25	0.07	9	131	1000	15	66
	CPP	R0400X	2	0.29	0.08	14	203	800	14	62
	RLP	R0400X	2	0.33	0.09	7	102	1000	20	86
Size 4	CPP	R0450X	2	0.4	0.1	31	450	600	15	67
	RLP	R0450X	2	0.5	0.1	15	218	800	22	95
	CPP	R0600P	2.5	0.6	0.2	21	305	600	21	92
	CPP	R0800X	2.5	0.8	0.2	17	247	600	28	122
	RLP	R0800X	2.5	0.8	0.2	9	131	800	39	173
	CPP	R1300X	3	1.0	0.3	14	203	600	36	159
	RLP	R1300X	3	1.1	0.3	7	102	800	51	226
Size 5	CPP	R1800X	3	1.5	0.4	31	450	600	53	231
	CPP	R1830X	3	1.5	0.4	31	450	600	53	231
	RLP	R1800X	3	1.6	0.4	15	218	600	56	246
	CPP	R2200X	4	2.0	0.5	21	305	600	71	313
	CPP	R2230X	4	2.0	0.5	21	305	600	71	313
	RLP	R2200X	4	2.1	0.6	8	116	600	76	333
	CPP	R2600P	4	2.5	0.7	14	203	600	91	399
	CPP	R2630P	4	2.5	0.7	14	203	600	91	399
Size 6	RLP	R3000L	4	2.9	0.8	15	218	500	87	383
	CPP	R3200P	6	3.0	0.8	21	305	600	108	476
	CPP	R3230P	6	3.0	0.8	21	305	600	108	476
	CPP	R3800P	6	3.8	1.0	14	203	600	138	606
	CPP	R3830P	6	3.8	1.0	14	203	600	138	606
	RLP	R3800L	6	3.8	1.0	8	116	500	114	504
	CPP	R3900P	6	4.8	1.3	8	116	600	173	761
	CPP	R3930P	6	4.8	1.3	8	116	600	173	761
Size 7	RLP	R4000L	6	5.2	1.4	15	218	400	126	553
	CPP	R4200P	6	6.2	1.6	28	400	400	148	652
	CPP	R4230P	6	6.2	1.6	28	400	400	148	652
	RLP	R5000L	8	7.2	1.9	8	116	400	173	761
	CPP	R5200P	8	9.0	2.4	14	200	350	190	836
	CPP	R5230P	8	9.0	2.4	14	200	350	190	836

Notes: Models marked with X use same rotor case for Lobe & Circumferential Piston Rotors
RLP: Rotary Lobe, with four lobe rotors on size 1 and three lobe on rest
CPP: Circumferential Piston, with Twin Wing or Single Wing Rotors
Except for new sizes, all models are dimensionally interchangeable with WFT TRAs as well as Waukesha® pumps

**Models ending with 30 are Aseptic Models*

Wright Flow Technologies

Our products are used across all process industries in applications as diverse as paper & pulp through to ultra-hygienic Bio-Pharma applications. We manufacture rotary lobe, centrifugal, circumferential piston, air operated double diaphragm and dosing pumps, all produced and designed with hygiene, cleanability, affordability and robustness in mind.

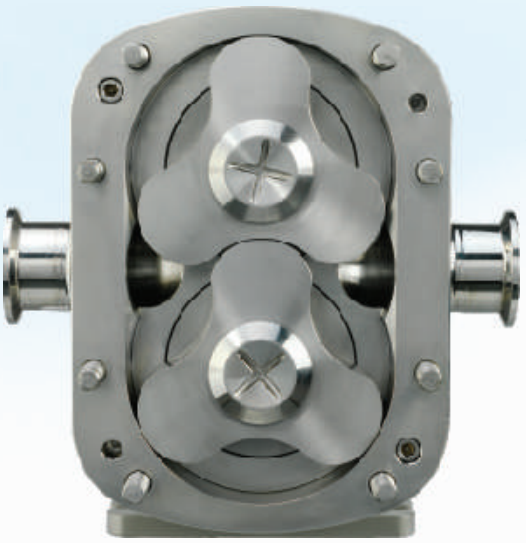
These pumps, coupled with our range of hygienic turbine and magnetic flow meters, plus our powder mixing technology, give a complete package for the modern high-tech process industries of today.

Remanufacturing in Europe and North America

Wright Flow Technologies offers remanufacturing services in Europe and North America for Waukesha® Universal I and Universal II series pumps, as well as Wright Flow Technologies TRA10 and TRA20 series pumps. The new Revolution™ (as CPP) can also be remanufactured up to three times.

Remanufacturing is a lower-cost alternative to buying a new replacement pump and it gets you all of Wright Flow Technologies improved features and benefits.

Ask your distributor, or the factory for more details.



Revolution™

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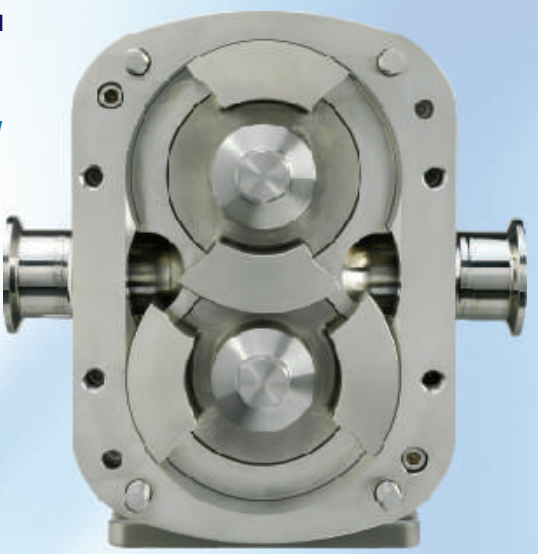

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