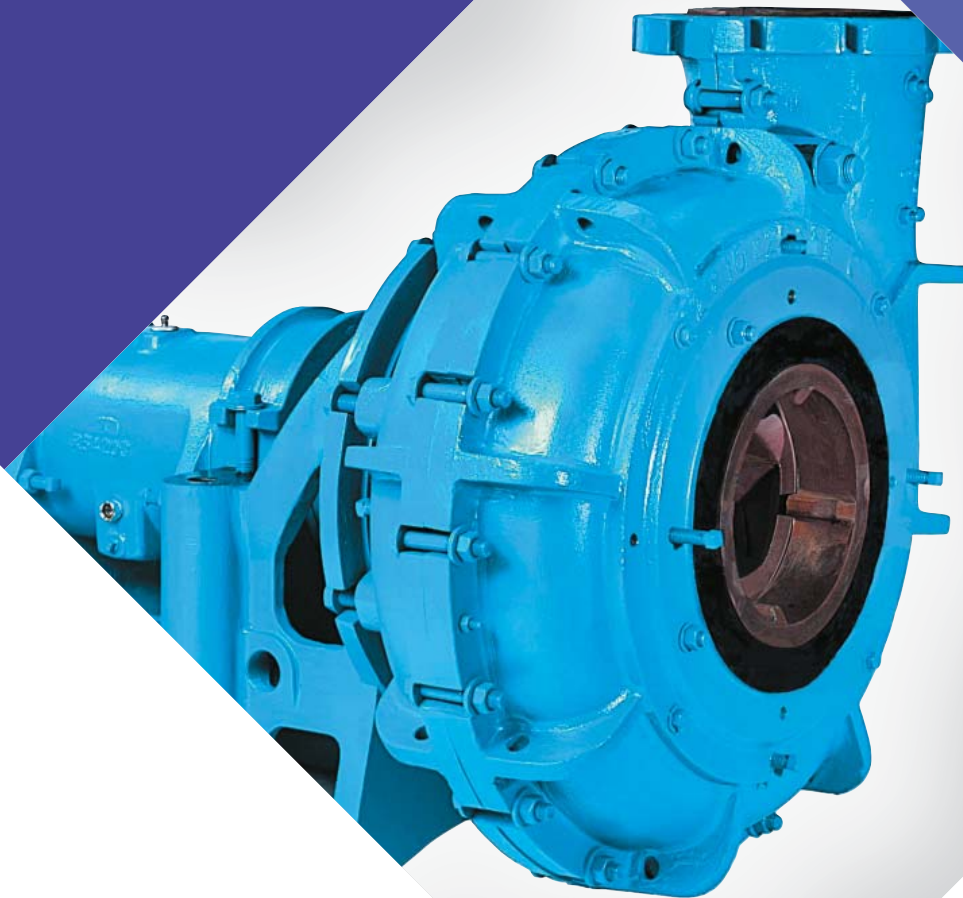


 **GOULDS PUMPS**

# Goulds SRL

Designed for Abrasive and  
Corrosive Slurry Services



**ITT**

ENGINEERED FOR LIFE

# Goulds SRL

## Designed for the Most Severe and Abrasive Duties

- Capacities to 20,000 GPM (4,542 m<sup>3</sup>/h)
- Heads to 164 feet (50 m)
- Temperatures to 250° F (121° C)
- Pressures to 500 psig (3,447 kPa)

### Design Features

#### Large-Diameter Impeller

- Develops higher heads at lower operating speeds
- Open and closed designs to suit most applications
- Variety of elastomers and metal alloys available
- Shearpeller® for stringy and froth-laden slurries

#### Field-Replaceable Liners

- Precision molded and bonded to metal skeleton
- FRP volute support to resist collapse sizes > 8 inches (200 mm)
- Extra-thick rubber design for severe duties

#### Heavy-Duty Mechanical Design

- Large-diameter shaft for low deflection and longer life
- Oil-lubricated cartridge bearing assembly
- Heavy-duty bearings for reliability and long life

#### Gland Seal Options

- Standard- and low-dilution seal water or mechanical seal
- Replaceable XH-800 shaft sleeve for maximum life

### Services

- **Primary Metals:** SAG/ball mill discharge, cyclone feed and tailings
- **Mineral Processing:** Slurry transfer, float cells and thickener underflow
- **Non-Metallic Mining:** Clay slurries, phosphate, soda ash and potash
- **Sand and Gravel:** Sand and aggregate slurries, tailings
- **Power Utility:** Absorber recycle, gas cooling, filter feed, flue gas desulfurization and gypsum tailings
- **Chemical:** Acid transfer, leach feed
- **Pulp and Paper:** Lime slurries and fly ash
- **General Industry:** Foundry sand, plant waste and ash slurries

The Goulds Model SRL is the original rubber-lined slurry pump. It is the result of nearly a century of proven experience in the design, manufacture and field operation of slurry pumps. The SRL is built to stand up to the toughest services, while providing maximum reliability and extreme ease of maintenance. Available in a wide variety of natural and synthetic elastomers, the SRL, with its heavy duty design, extra thick liners and multiple impeller options, provides you with the right pump for your application along with years of dependable service even under the most severe operating conditions.



SRL 16x14-34 High Pressure Tailings

## Bearing Assembly

- Cartridge design
- Precision machined cast iron bearing housing
- Large diameter AISI 1045 steel shaft
- Heavy-duty anti-friction bearings
- Minimum 5-year bearing  $L_{10}$  life
- Oil lubrication
- Grease packed labyrinth and lip seals
- External oil level sight gauges on both sides



Bearing Cartridge Assembly

## Shaft Sleeve

- Hard Ni-Cr-coated XH-800 alloy sleeve
- 64 Rockwell C coating will not chip or crack
- Ground 6-8 RMS surface finish
- 316 SS base alloy for corrosion resistance
- Special alloys available



XH-800 Shaft Sleeves

## Suction Wearplate Liner

- Standard on SRL-XT models and SRL-C pumps with discharges 6 inches (150 mm) and larger
- Quick replacement of wear parts
- Reduced downtime and replacement cost
- Choice of elastomers and polyurethanes
- Optional CRM wearplate available

## Ceramic-Rubber Media (CRM) Liners

The primary ball/SAG mill discharge is one of the most severe duties in mineral processing. The suction wearplate is subjected to rapid wear due to high solids concentration and the coarse nature of the slurry. Goulds developed a proprietary process to locate and mold ceramic rods into the rubber liner for the optimum combination of hardness and resilience for extended wear life. Field trials confirmed CRM liner life of two to four times that of natural rubber alone. Because the CRM liner retains its shape longer, it also extends the life of the other wear parts for an even lower life cycle cost.



Optional Natural Rubber CRM Wearplate for 10×10–28 SRL-XT

# Goulds SRL

## Rubber

The Goulds Model SRL utilizes a soft natural rubber blend that offers the best combination of resilience and tear resistance for maximum wear life in abrasive and corrosive slurries. Goulds offers a wide variety of natural and synthetic rubbers as well as polymers in a range of hardnesses to suit almost any slurry application.



FRP and Rubber Composite Hybrid Liners

## FRP and Rubber Composite Hybrid Liners

All SRL model liners are molded to a metal skeleton and bolted to the casing for a secure fit. However, on larger pumps, the amount of unsupported rubber in the volute and discharge neck area can make them prone to collapse under adverse operating conditions. It also can be difficult to handle and install. Goulds molds a fiberglass (FRP) shell to the casing liners for added support on pump sizes 12×10–25 SRL-C and larger. This unique hybrid liner design is collapse-resistant with improved fit for easy handling and assembly.

## Elastomer Selections and Application Guide for SRL Pumps

Please use the following chart as a general guide only. Refer to factory for specific elastomer recommendations.

E = Excellent G = Good P = Poor

Elastomer Type	Hardness Durometer Shore A	Temperature		pH		Resistance to		
		Maximum	Maximum	Min.	Max.	Abrasion	Moderate Chemicals	Hydrocarbons & Oils
Natural Rubber	40	154°F	68°C	4.5	12	E	G <sup>(1)</sup>	P
Natural Rubber (Soft)	36	150°F	66°C	4.5	12	E	G <sup>(1)</sup>	P
Natural Rubber (Hard)	50	180°F	82°C	4.5	12	E	G <sup>(1)</sup>	P
Neoprene	60	212°F	100°C	3.0	12	G	G <sup>(1)</sup>	G
Nitrile (60)	60	220°F	105°C	3.5	12	G	G <sup>(1)</sup>	E
Chlorobutyl	50	250°F	121°C	1.0	12	G	E	P
Hypalon®	55	230°F	110°C	<1.0	14	G	E	G
Urethane	81	149°F	65°C	3.0	11	E <sup>(2)</sup>	G <sup>(1)</sup>	E
Urethane (Hi-Temp)	83	212°F	100°C	3.0	11	E <sup>(2)</sup>	G <sup>(1)</sup>	E

(1) Poor for oxidizing chemicals and strong acids

(2) Fine particles only (150 mesh or less)

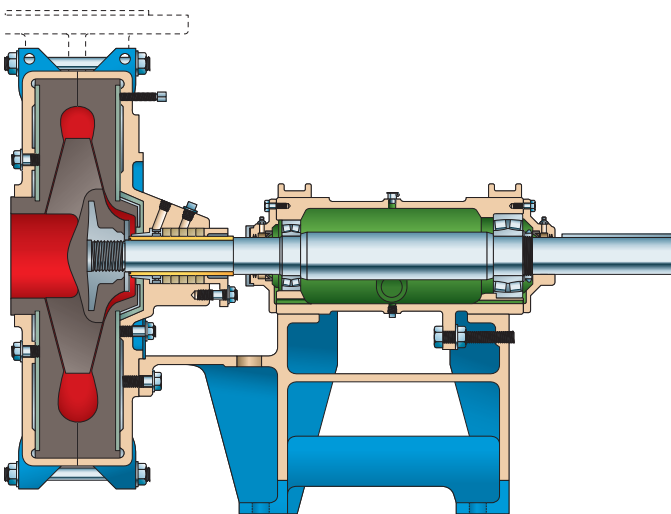
## Goulds SRL

- Sizes: 2–6 inches (50–150 mm)
- Flows to: 1,500 GPM (341 m<sup>3</sup>/h)
- Heads to: 135 feet (41 m)
- Solids to: 1/8 inch (3.2 mm)
- Pressures to: 232 psig (1,600 kPa)

## Design Features and Benefits

- Precision-molded, thick bolt-in liners  
*Long life and secure assembly in casing*
- Large-diameter semi-open impeller  
*Low speeds and extended wear life*
- Axially adjustable bearing assembly  
*Maintains peak operating efficiency and life*
- Short, rigid shaft and heavy-duty bearings  
*Low deflections and reliable service*
- Packed gland option or mechanical seal  
*Standard, low or no dilution arrangements*
- Precision-machined cast iron frame  
*Sturdy, vibration-free support*
- Five discharge positions available  
*Suitable for most piping arrangements*

## Sectional View



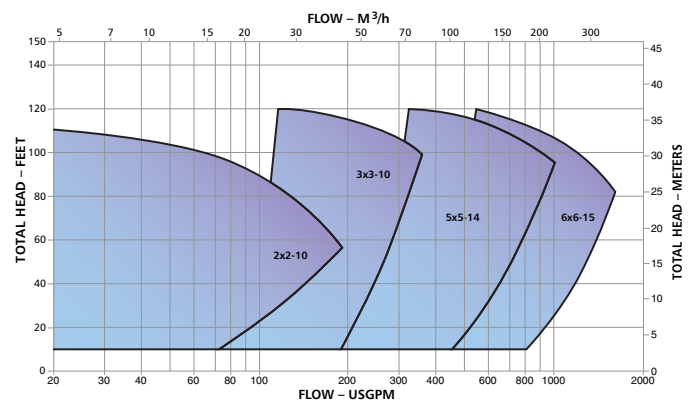
## SRL Heavy-Duty Slurry Pumps

The SRL series rubber-lined horizontal slurry pumps are used in a variety of applications in mineral processing and general industry. The open impeller is designed to handle most types of slurry in abrasive and corrosive applications, including some containing air or froth.

It is typically used for slurries containing solids up to a nominal 1/8 inch (3.2 mm) in diameter. A wide range of natural and synthetic elastomers is available to handle slurries containing a variety of chemicals.



## Hydraulic Coverage





# Model SRL-C Heavy-Duty Slurry Pumps

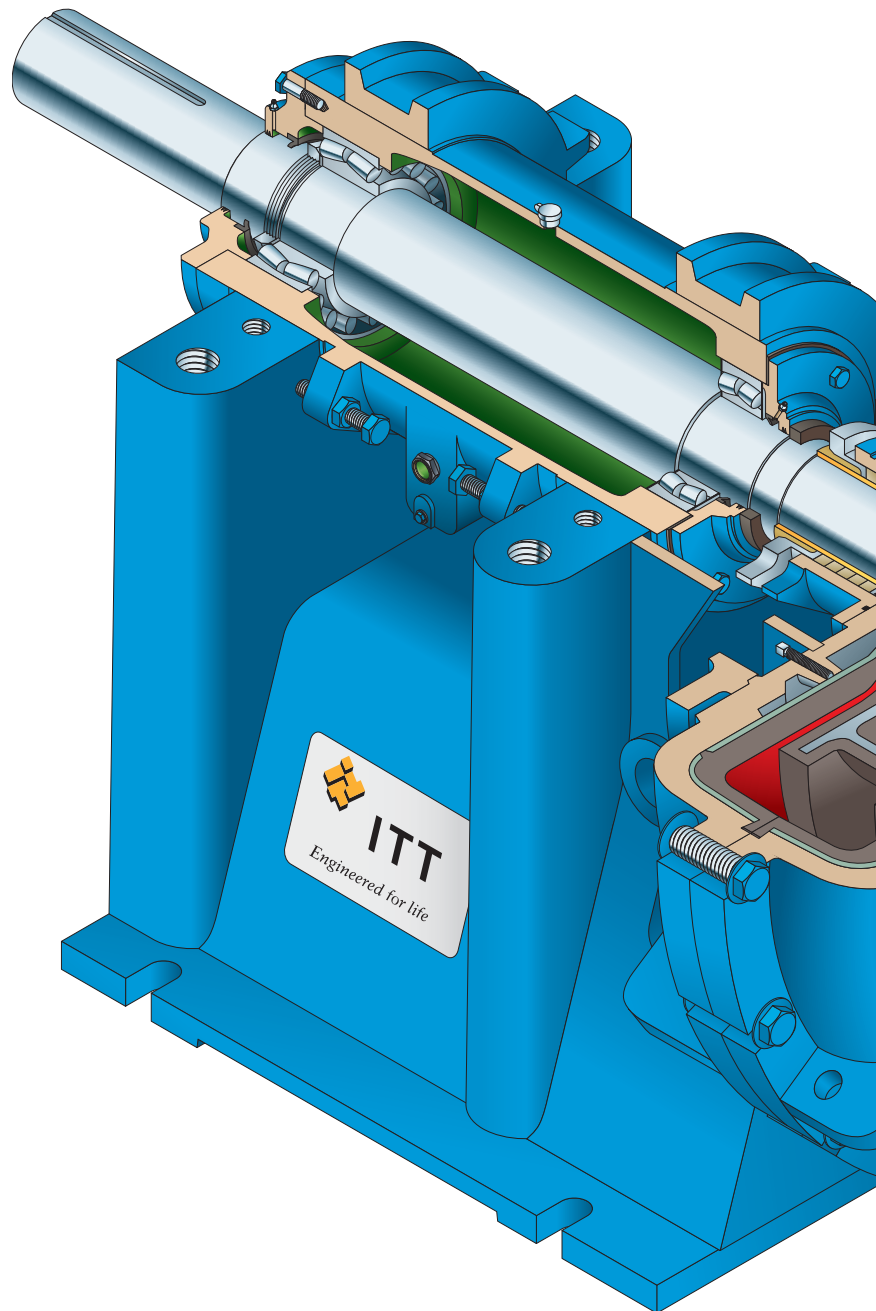
The SRL-C series rubber-lined horizontal slurry pumps utilize proven hydraulics to deliver high efficiencies for pumping abrasive and / or corrosive slurries. The closed impeller is designed to handle very abrasive slurries with high concentrations of solids in mining, mineral processing and general industry.

The Goulds SRL-C pump is typically used for slurries containing solids up to ¼ inch (6.4 mm) in diameter and heavy concentrations of solids. A choice of natural and synthetic elastomers is available to suit most slurry applications.

- Sizes: 3–20 inches (75 mm–500 mm)
- Flows to: 20,000 GPM (4,542 m<sup>3</sup>/h)
- Heads to: 164 feet (50 m)
- Solids to: ¼ inch (6.4 mm)
- Pressures to: 500 psig (3,447 kPa)



Model SRL-C 20x18-40





## DESIGN FEATURES AND BENEFITS:

High-efficiency design  
*Very low power costs*

Proven hydraulics for slurry service  
*Extended parts wear life*

Thick bolt-in liners  
*Positive assembly in casing for extended life*

Large liners reinforced with a fiberglass shell  
*Resist liner collapse under adverse conditions*

Large-diameter closed impeller  
*Lower speeds and extended wear life*

Replaceable suction wearplate available on 6 inch (150 mm) and larger pumps  
*Provides reduced downtime and lower replacement cost*

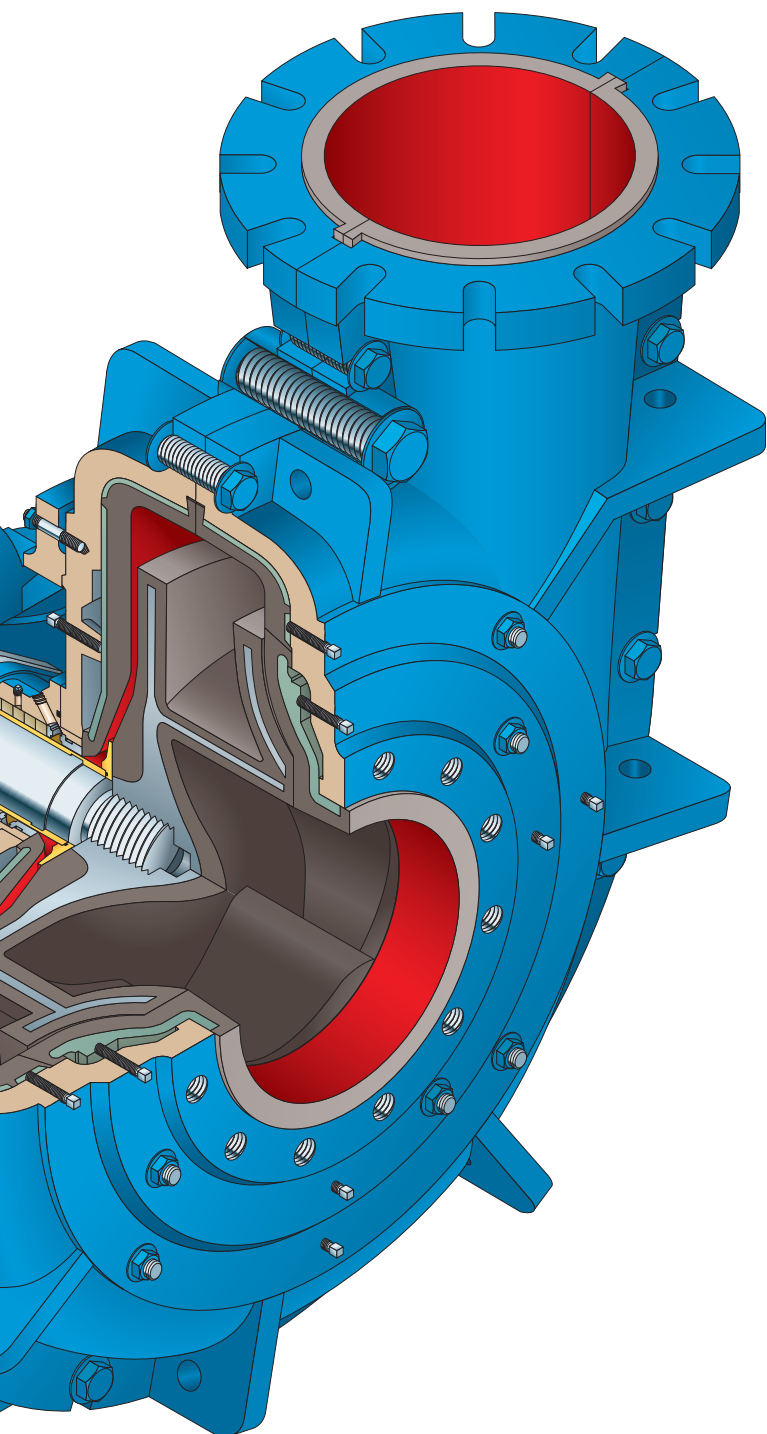
Axially adjustable bearing assembly  
*Maintains peak operating efficiency and life*

Short, rigid shaft and heavy-duty bearings  
*Low deflections and reliable service*

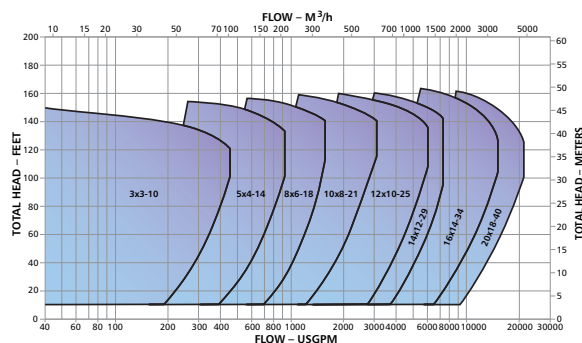
Packed gland option or mechanical seal  
*Standard, low or no dilution arrangements*

Precision-machined cast iron frame  
*Sturdy, vibration-free support*

Five discharge positions available  
*Suitable for most piping arrangements*



## Hydraulic Coverage



# Goulds SRL-XT

## Designed With Extra-Thick Rubber for the Most Severe and Abrasive Applications

- Sizes: 6–12 inches (150–300 mm)
- Flows to: 10,000 GPM (2,270 m<sup>3</sup>/h)
- Heads to: 140 feet (42 m)
- Solids to: ½ inch (13 mm)
- Pressures to: 250 psig (1,725 kPa)

## Services

- Sag Mill
- Rod & Ball Mill
- Primary and Secondary Cyclone
- Thickener Feed
- Flotation Feed
- Tailings



Ball Mill



SAG Mill

The SRL-XT has extra-thick rubber components that are up to three times thicker than standard rubber-lined pumps. Its heavy-duty design makes it ideal for the toughest applications, especially where coarser slurries are involved.



SRL-XT 14×12–36 on Ball Mill Discharge Service

## Design Features and Benefits

### Rubber up to three times the conventional thickness

- Handles coarse material with improved abrasion resistance, longer wear life and less downtime

### Precision molding of rubber-to-metal skeletons, bolted-in liners

- Greater dimensional accuracy; fast, easy replacement; reduced downtime

### Tongue-and-groove fit between casing halves and liners

- Positive locking of liner into casing to prevent collapse

### Front removal of suction wearplate

- Allows for inspection and ease of replacement without disturbing discharge
- Allows for rotation of suction wearplate to maximize efficiency and wear life

### Large ACME impeller threads

- Allows for quick, easy removal of impeller, less downtime

### Impeller release collar

- Relieves pressure on impeller allowing easy removal, less downtime

### Heavy-duty oil lubricated bearing cartridge with labyrinth style seals

- Maximum bearing and shaft life, less downtime
- External impeller adjustment maintains peak operating efficiency and maximizes life

### Packed gland or mechanical seal options

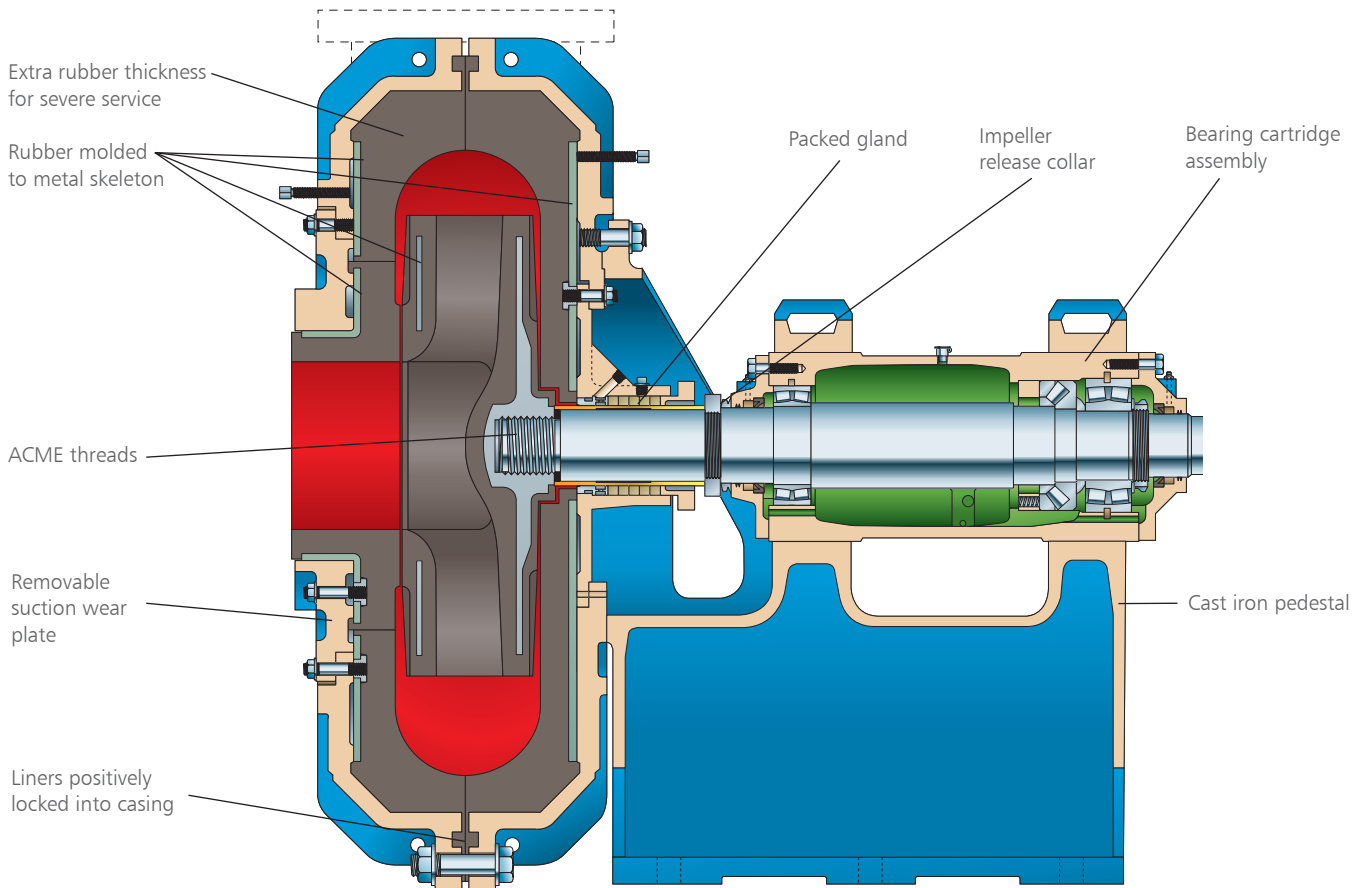
- Standard full flush, low or no dilution available

### Free-standing pump with rugged cast iron pedestal

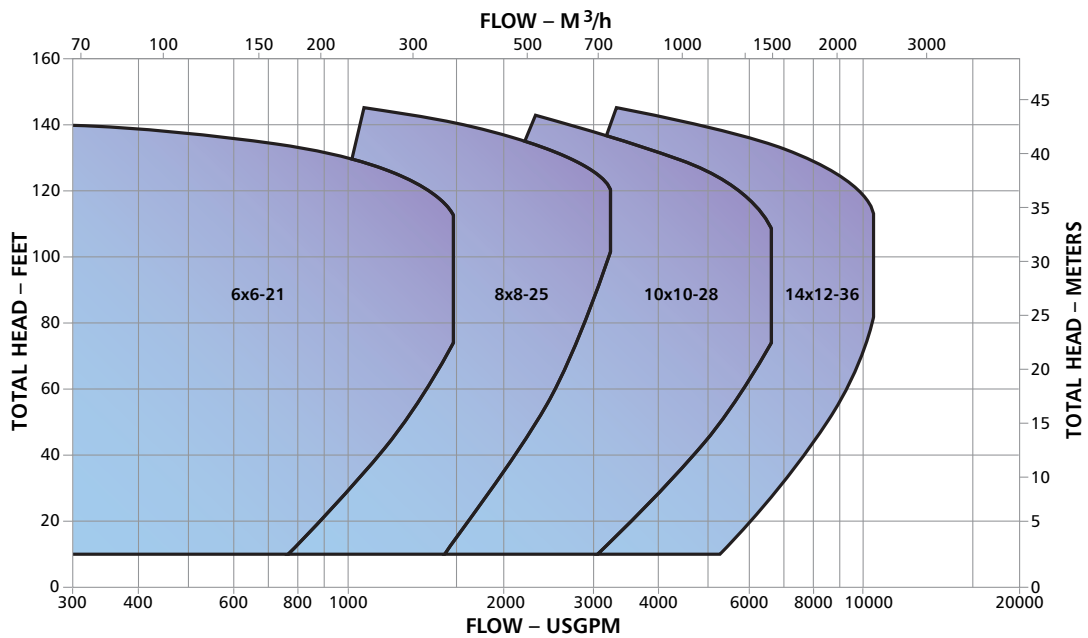
- Allows mounting of pump directly on concrete foundations
- Won't tip
- Allows for mounting of large motors overhead, saves space



## Sectional View



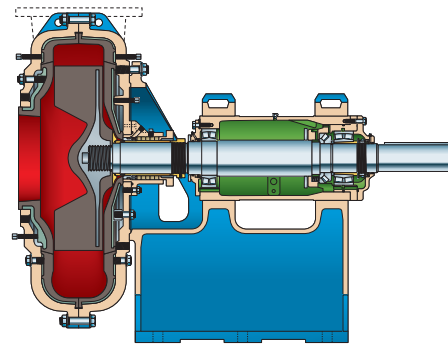
## Hydraulic Coverage



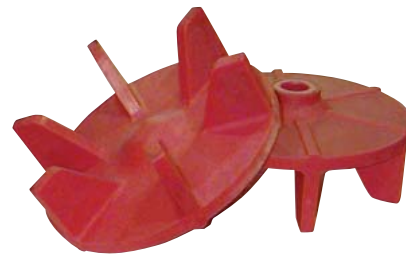
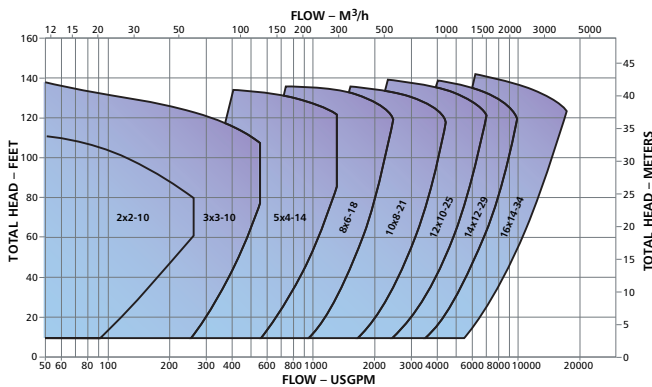
# Goulds SRL-S

The SRL-S Shearpeller<sup>®</sup> provides the solution for applications with entrained air, froth and stringy solids.

The Shearpeller's innovative patented design successfully handles large stringy solids. Also, due to its unique tapered radial vane design, the SRL-S can handle a froth factor of up to 2.5 without oversizing the pump, providing significant cost savings. This design is also very effective in handling entrained air without air binding. Available on the 2×2-10 SRL and all sizes of the SRL-C up through the 16×14, the Shearpeller is completely interchangeable with the standard models.



## Hydraulic Coverage



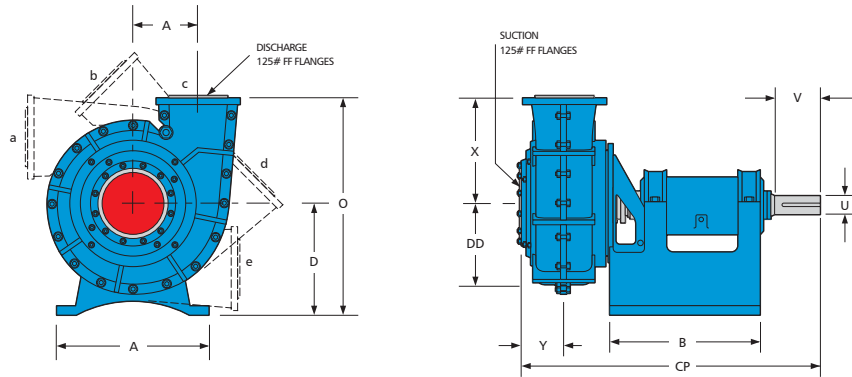
Shearpeller

## Engineering Data

Model	Size	Frame	Cartridge	Shearpeller	Suction Wearplate	Hybrid Liners	Maximum Working Pressure (PSI)					Weight Lbs. (Kg.)	
							75	125	140	225	250		400
SRL	2 × 2 – 10	0		X			X	X		X			380 (172)
SRL	3 × 3 – 10	1	X				X						500 (227)
SRL	5 × 5 – 14	2	X				X						1000 (436)
SRL	6 × 6 – 15	2	X				X			X			1300 (590)
SRL-C	3 × 3 – 10	1	X	X			X	X		X			650 (295)
SRL-C	5 × 4 – 14	2	X	X			X	X		X			1100 (499)
SRL-C	8 × 6 – 18	3	X	X	X		X	X		X			2850 (1293)
SRL-C	10 × 8 – 21	3	X	X	X		X	X		X	X		3400 (1542)
SRL-C	12 × 10 – 25	4	X	X	X	X			X	X			4300 (1950)
SRL-C	14 × 12 – 29	5	X	X	X	X			X	X	X		6700 (3039)
SRL-C	16 × 14 – 34	6	X	X	X	X			X	X		X	9100 (4127)
SRL-C	20 × 18 – 40	7	X		X	X			X	X		X	15300 (6938)
SRL-XT	6 × 6 – 21	3	X		X		X			X			3450 (1565)
SRL-XT	8 × 8 – 25	4	X		X			X		X			4900 (2222)
SRL-XT	10 × 10 – 28	5	X		X			X		X			7550 (3424)
SRL-XT	14 × 12 – 36	6/7	X		X			X		X			10420 (4725)

# Dimensions

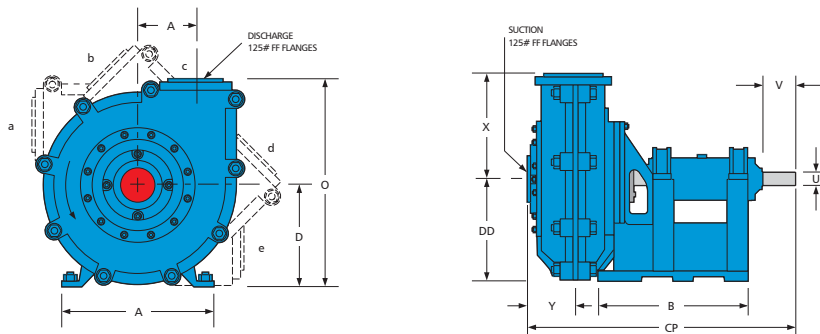
## Models SRL and SRL-C



BARE PUMP DIMENSIONS														
Size and Type	Suct.	Disch.	No.	Frame A	B	CP	D	DD	O	U	V	X	Y	Z
2 x 2 - 10 SRL	2.0	2.0	0	9.5	12.2	27.7	9.0	8.2	17.1	1.1	3.4	3.1	2.3	5.5
3 x 3 - 10 SRL	3.0	3.0	1	12.4	15.2	34.8	12.5	10.1	21.2	1.6	5.0	6.7	3.1	6.2
5 x 5 - 14 SRL	5.0	4.0	2	15.0	17.1	41.1	15.5	12.7	30.0	2.2	7.4	14.5	3.9	9.5
6 x 6 - 15 SRL	6.0	6.0	2	15.0	17.1	43.3	15.5	14.0	31.5	2.2	7.4	16.0	5.1	9.7
3 x 3 - 10 SRL-C	3.0	3.0	1	12.4	15.2	36.9	12.5	11.6	22.5	1.6	5.0	10.0	4.6	7.9
5 x 4 - 14 SRL-C	5.0	4.0	2	15.0	17.1	42.2	15.5	12.0	30.0	2.2	7.4	14.5	4.6	8.5
8 x 6 - 18 SRL-C	8.0	6.0	3	18.5	29.3	61.4	20.5	15.7	36.5	3.3	11.4	16.0	7.4	11.5
10 x 8 - 21 SRL-C	10.0	8.0	3	18.5	29.3	64.2	20.5	17.6	38.5	3.3	11.4	18.0	8.9	15.0
12 x 10 - 25 SRL-C	12.0	9.75	4	34.0	34.0	65.5	22.0	20.7	48.2	4.0	9.6	24.2	8.5	14.7
14 x 12 - 29 SRL-C	14.0	11.75	5	41.0	42.0	72.9	28.0	25.7	53.0	4.7	12.0	25.0	9.4	19.6
16 x 14 - 34 SRL-C	16.0	13.2	6	49.5	39.5	80.4	34.0	31.1	61.5	4.9	14.0	27.5	10.9	23.7
20 x 18 - 40 SRL-C	20.0	17.0	7	48.0	55.5	93.7	37.0	32.7	69.7	5.5	9.7	32.7	13.4	27.2

- NOTES:
1. All dimensions are in inches.
  2. Discharge positions a,b,c,d and e are standard on all pump sizes.
  3. Not for construction, installation or application purposes.
  4. SRL-S dimensions are the same as the equivalent SRL-C pump sizes.

## Model SRL-XT



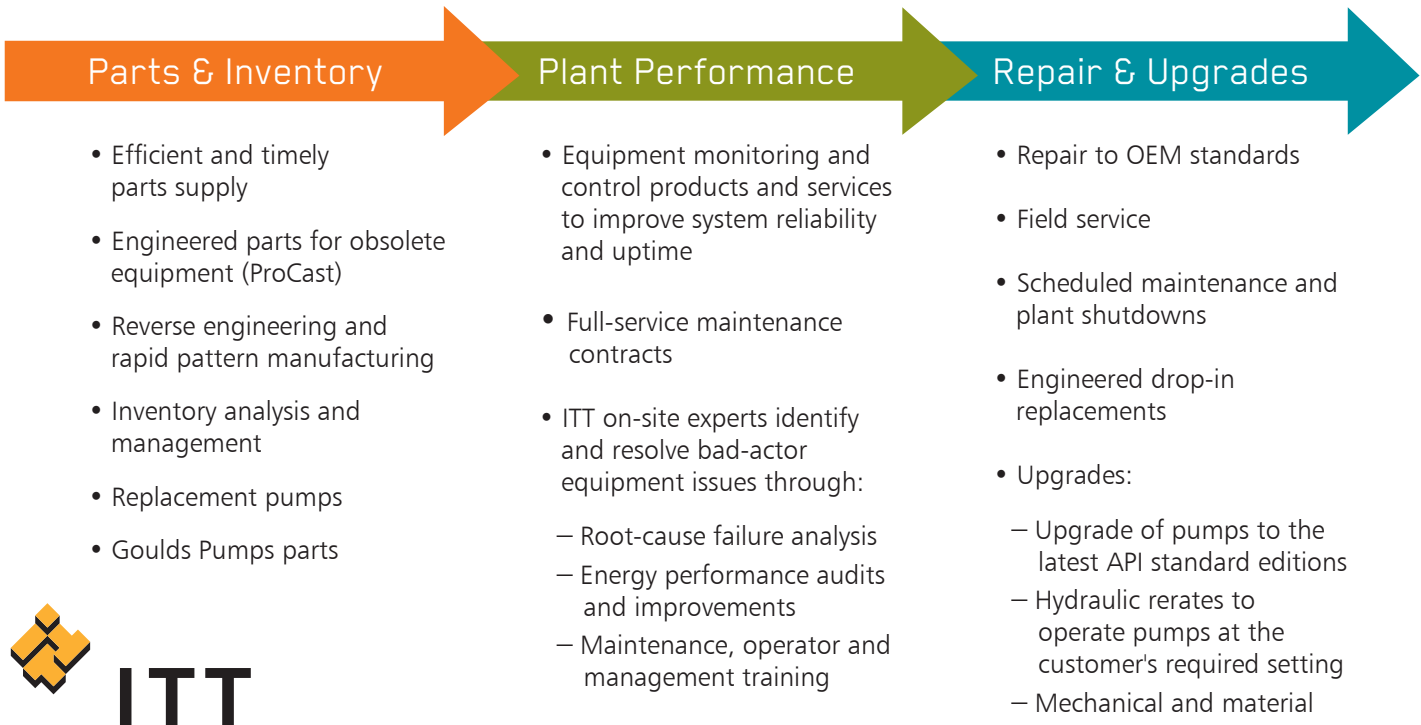
BARE PUMP DIMENSIONS													
Size and Type	Suct.	Disch.	A	B	CP	D	DD	O	U	V	X	Y	Z
6 x 6 - 21 SRL-XT	6.0	5.2	18.6	29.3	63.2	20.5	17.6	38.5	3.3	11.3	18.0	8.9	15.0
8 x 8 - 25 SRL-XT	8.0	8.0	34.0	34.0	68.7	22.0	25.1	46.7	4.0	9.6	24.7	11.2	14.0
10 x 10 - 28 SRL-XT	9.5	10.25	41.0	42.0	74.7	28.0	29.5	57.2	4.75	9.5	29.2	12.2	17.1
14 x 12 - 36 SRL-XT	13.38	12.0	49.5	39.5	81.1	34.0	34.7	68.0	5.5	12.5	34.0	13.2	22.1

- NOTES:
1. All dimensions are in inches.
  2. Discharge positions a,b,c,d and e are standard on all pump sizes.
  3. Not for construction, installation or application purposes.

# PRO services

## Reliability has no quitting time.

Building on more than 160 years of Goulds Pumps experience, **PRO Services** provides an array of services focused on reducing equipment total cost of ownership (TCO) and increasing plant output, including predictive monitoring, maintenance contracts, field service, engineered upgrades, inventory management, and overhauls for pumps and other rotating equipment.



ENGINEERED FOR LIFE

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Form BSRL 12/13