

Note: Calculated output curves indicate pumping capability only. In actual practice the material varies from free flowing, easily excavated material to compacted and/or difficult excavations. When used for estimating actual outputs, the nature of the material must be considered. Consult Ellicott for other dredging conditions outside these curves.

BASED UPON	
MATERIAL IN-SITU S.G.	2.10
SUCTION PIPE I.D.	14 in. (356 mm)
HULL DISCHARGE PIPE I.D.	12 in. (305 mm)
DISCHARGE PIPELINE I.D.	14 in. (356 mm)
PUMP IMPELLER	37 in. (940 mm)
MAX. PUMP SPEED	605 RPM
MAX. PUMP HP	560 HP (418 kW)
TERMINAL ELEV.	10 ft. (3.05 M)

For material in-situ values other than 2.1, see conversion below.

CONVERSION FOR VARIOUS IN-SITU S.G.	
S.G.	MULTIPLIER
2.10	1.00
2.00	1.10
1.95	1.158
1.90	1.222
1.85	1.294
1.80	1.375

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# Product Introduction

# LSA S

## Series Overview

LSA S Series Slurry Pumps are designed for severe duties with operating flows from 100-60,000 gpm (20-13,600 m<sup>3</sup>/h). Total dynamic head is up to 300 ft. (90m) per stage and power rating is up to 2,500 hp (1,850kW).

## Fields of Application

LSA S slurry pumps are widely used in ore transport, mill discharge, cyclone feed, tailings and plant process. The LSA S can also be used for environmental cleanup, dewatering (low head type), pulp and paper (liquid transfer), food process (sugar and sugar beets), coke and resin pumping, and ash handling.

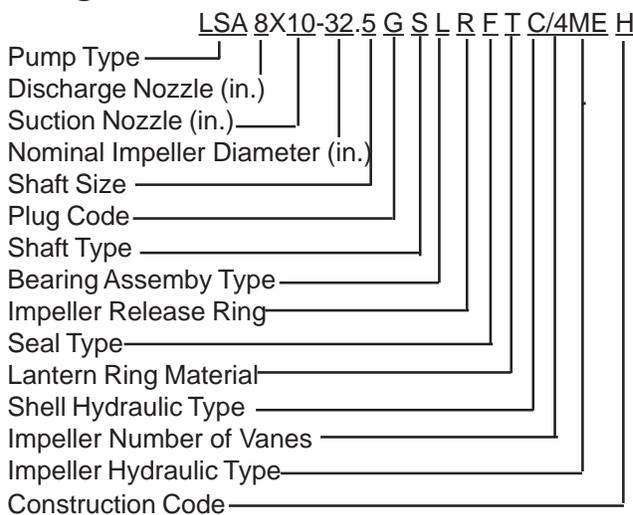


2-26 in (50-650mm) Discharge

## Design

LSA S slurry pumps are low-speed, horizontal, end suction, modified volute casing pumps. The LSA S's accept three or four vane impeller designs for the optimum combination of suction performance, efficiency and wear characteristics over a broad operating range. The basic, single wall construction and heavy section, hard metal wet end combined with the cartridge bearing assembly provides maximum reliability and ease of maintenance.

## Designation



### Shaft Size (Standard options)

- 2 2-15/16
- 3 3-15/16
- 4 4-7/16
- 5 5-7/16
- 6 6-7/16
- 7 7-3/16
- 9 9

### Plug Code (Standard options)

- D 2.0
- F 3.5S
- G 2C4.5
- J 6.5
- K 7.75

### Shaft Type

- S Stiffened
- W Straight

### Bearing Assembly Type

- L Limited End Float
- C Conventional
- U Underwater

### Impeller Release Ring

- R Impeller Release Ring
- N No Impeller Release Ring

### Seal Type

- F Packing, Forward Flush
- K Packing, Low Flow
- B Throat Bushing
- M Mechanical Seal

### Lantern Ring Material

- T Teflon
- M Metal
- N Not Applicable

### Shell Hydraulic Type

- A Annular
- C Semi-Volute
- T Volute
- OB Unconventional

### Impeller Hydraulic Type

- RV Radial Vane
- ME Conventional Warped Vane
- HE High Efficiency

### Construction Code

- H Integral Hub Liner
- L Separate Hub Liner
- OD TOD Type Suction Liner
- HP High Pressure
- VHP Very High Pressure
- GL Gathane Lined
- RL Rubber Lined



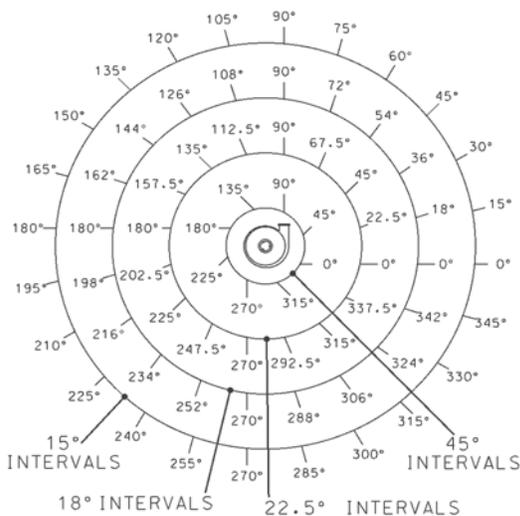
**LSA S RANGE PUMP INFORMATION TABLE**

Assembly Number	Normal Size		Maximum Operating		Free Passage		Discharge Position Intervals	Vane Number & Type
			Pressure					
	in	mm	psi	bar	in	mm		
0501x	6x8-25	150x200-635	180	12.41	3.2x3.6	81x92	22.5	4ME
0562x	8x10-32	200x250-810	172	11.86	3.9x4.6	99x117	22.5	4ME
0563x	8X10-32	200x250-810	172	11.86	4.6x4.6	117x117	22.5	3ME
0564x, 0566x	8x10-32	200x250-810	172	11.86	3.9x4.6	99x117	15	4ME
0565x, 0567x	8x10-32	200x250-810	172	11.86	4.6x4.6	117x117	15	3ME
0508x, 0510x	10x12-36	250x300-910	156	10.75	4.0x6.7	102x171	15	4ME
0509x, 0511x	10x12-36	250x300-910	156	10.75	6.3x6.7	160x171	15	3ME
0568x, 0570x	12x14-36	300x350-910	173	11.93	5.1x8.3	129x210	15	4ME
0569x, 0571x	12x14-36	300x350-910	173	11.93	6.4x8.3	162x210	15	3ME
0516x	4X6-25	100x150-635	180	12.41	1.5x1.5	39x39	22.5	4ME
0517x	2x3-21	50x75-530	220	15.17	1.0x1.0	25x25	45	4RV
0518x	3x4-21	75x100-530	220	15.17	1.0x1.0	25x25	45	4RV
0519x	4X6-21	100x150-530	220	15.17	2.5X2.8	63X71	45	4RV
0521x	8x10-25	200x250-635	163	11.24	2.4x4.9	63x125	22.5	4RV
0522x, 0525x	10x12-32	250x300-810	140	9.65	3.7x6.7	95X171	15	4RV
0527x	16x16-39	400x400-990	120	8.27	5.8x8.2	148x209	15	4ME
0530x, 0532x	16x16-39	400x400-990	126	8.68	4.4x8.7	112x222	30	4ME
0534x, 0536x	16x18-44	400x450-1115	165	11.37	5.5x7.6	141x193	18	4ME
0535x, 0537x	16x18-44	400x450-1115	165	11.37	7.6X7.6	193x193	18	3ME
0538x, 0540x	18x18-44	450x450-1115	160	11.03	6.3x11.6	161x295	18	4ME
0539x, 0541x	18x18-44	450x450-1115	160	11.03	8.9x11.6	226x295	18	3ME
0546x, 0547x	20x20-48	500x600-1220	105	7.24	9.7x13.0	247x330	9	4RV
0548x	20x20-48	500x600-1220	130	8.96	9.7x13.0	247x330	15	4RV
0549x	20x24-48	500x600-1220	113	7.79	6.1x13.0	155x330	15	4ME
0550x	22x24-54	550x600-1370	186	12.82	8.1x13.5	208x343	18	4ME
0551x	26x28-58	650x700-1470	91	6.27	8.6x11.7	218x298	15	4ME

**LSA S Specifications**

Capacities (Qmax.) 100-60,000 gpm  
20-13,600 m<sup>3</sup>/h  
Heads (H max.) 300 ft  
90 m

Normal temperature limit is 150° F (65°C). Consult the factory for materials and configurations for temperatures above 150° F or for material options to suit your particular application.

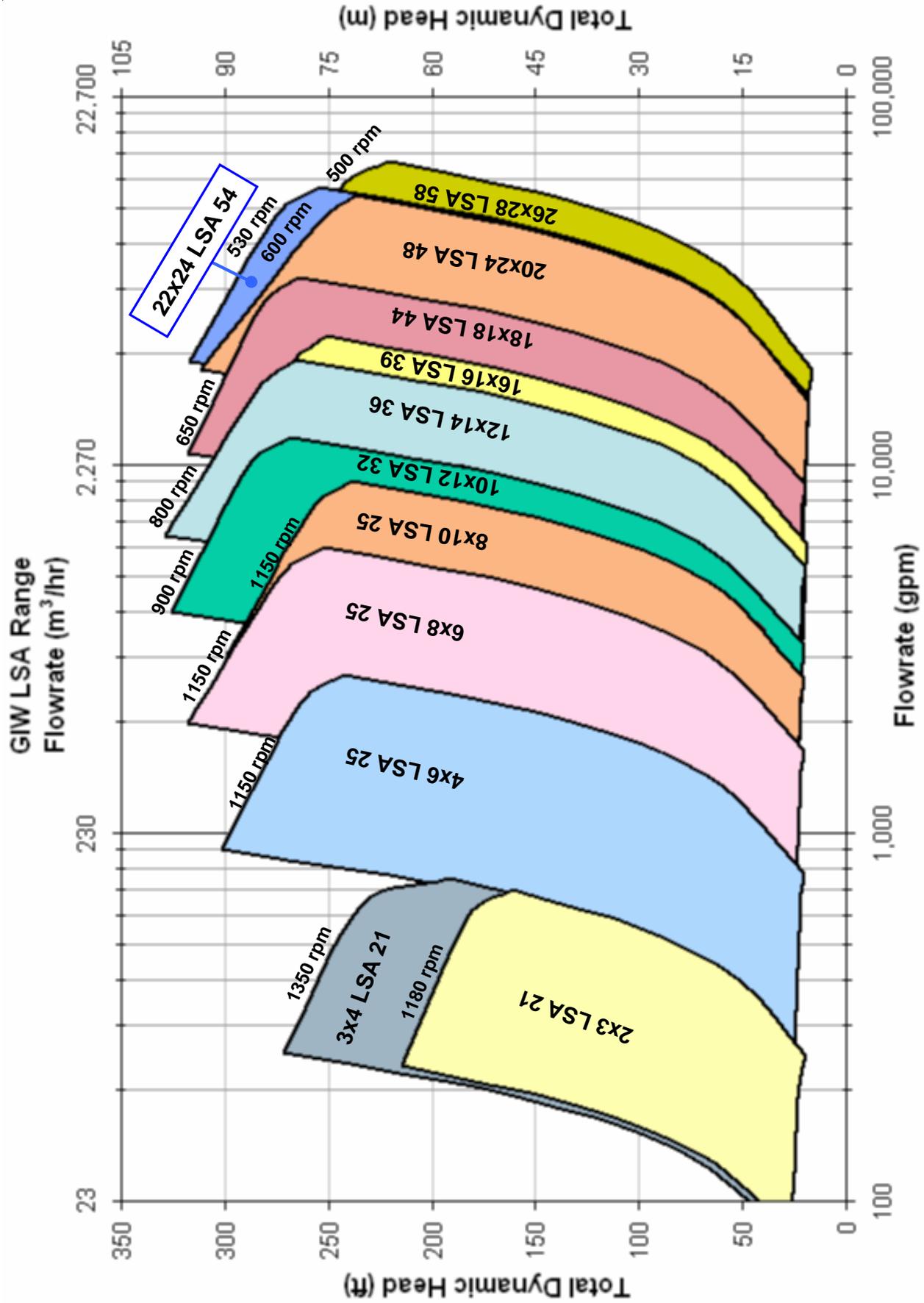


**Discharge Positions**

Rotation direction is clockwise from the drive end. A vertical discharge is standard.

**Materials**

Part No.	Item	Standard	Alternate
101	Shell	Gasite® WD28G	Gasite® WD28G
230	Impeller	Gasite® WD28G	Gasite® WD28G
16-1	Suction Plate	Ductile Iron	Ductile Iron
13-19	Suction Liner	Gasite® 18G	Gasite® WD28 G
332	Pedestal	Fab Steel	Fab Steel
210	Shaft	4150 Steel	4340HT Steel
451	Stuffing Box	Grey Iron	Grey Iron
524	Shaft Sleeve	Carbide Coated Steel	Carbide Coated Steel
350	Bearing Housing	Grey Iron	Grey Iron

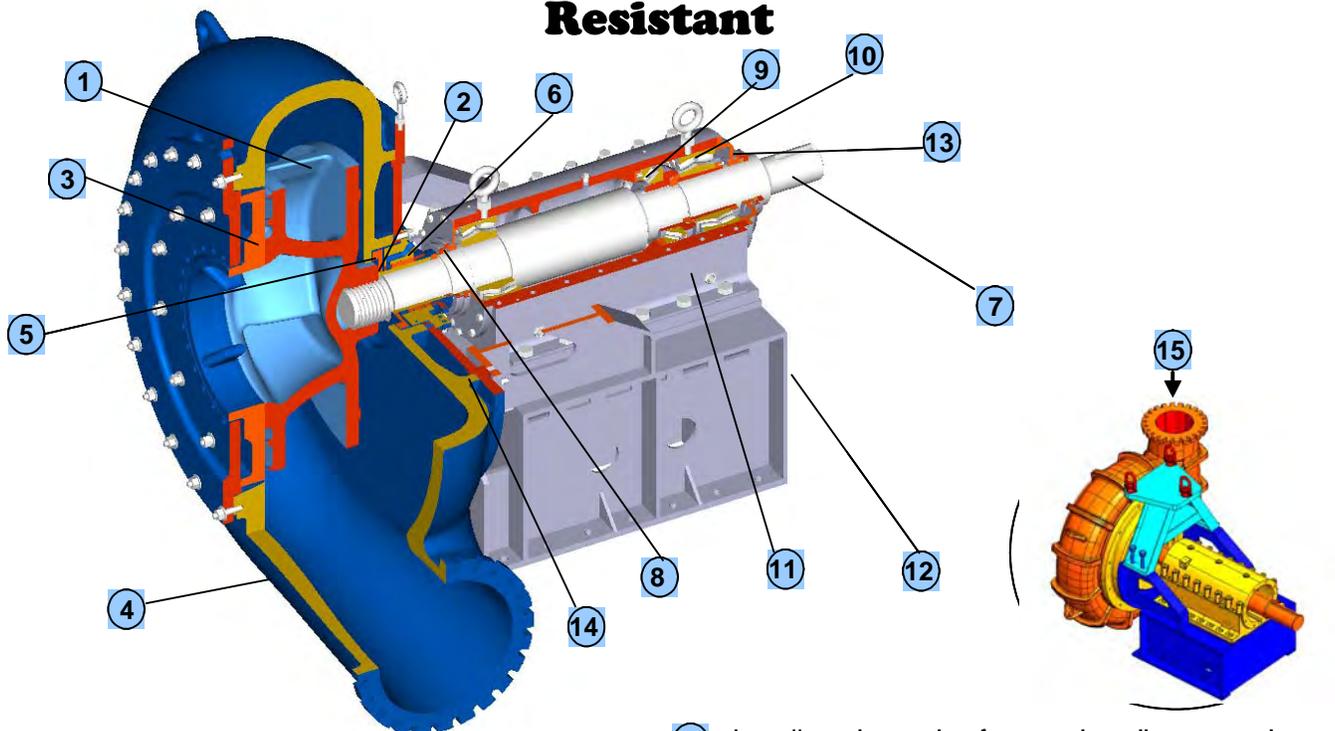


RPM SHOWN IS MAXIMUM AT CLASS TWO DUTY



# GIW Model LSA S Pumps

## Low Maintenance, Severe Duty, Abrasion Resistant



### Wear Parts

- ① Impeller is designed for wear-resistant operation in highly abrasive slurries using GIW's flow simulation computer program.
- ② Two aramid gaskets aid in the removal of the impeller.
- ③ Replaceable suction liner facilitates pump internal inspection and minimizes wear part usage cost. Liner can be rotated at intervals to increase wear life.
- ④ Pump shell is computer designed to optimize wear and efficiency.

### Pump Seal

- ⑤ Replaceable wear plate maximizes stuffing box life.
- ⑥ Shaft sleeve with fused carbide hard coating to maximize packing life.

### Mechanical End

- ⑦ Robust stiffened shaft to improve the wear life of the mechanical end and stuffing box.

- ⑧ Impeller release ring for easy impeller removal. Feature is standard on larger pump sizes.
- ⑨ Spring retainer ring locates the thrust bearing pre-load springs for correct axial thrust load.
- ⑩ Radial bearings are a heavy duty, self-aligning, double-row, spherical roller-type design.
- ⑪ Split-cartridge bearing assembly offers ease of inspection and maintenance.
- ⑫ Accurate impeller clearance adjustments are easily made with the adjusting screw.
- ⑬ Labyrinth seals protect bearings.

### Quick Alignment

- ⑭ Rabbet fits machined in the pedestal support the shell and provide component alignment.
- ⑮ GIW Quick Release Pump Assembly is available for mill circuit duties which allows for fast and convenient retrofitting of existing pumps.

### Interchangeability

To optimize wear life and efficiency, various hydraulic design and material options can be used on the same mechanical end.

# PUMPFEATURES

## GIW LSA S Pumps



### Typical Applications

- Mineral processing (coal, copper, gold, iron ore, nickel, oil sands, phosphate)
- Power Generation
- Aggregate (sand & gravel)
- Ash handling
- Flue gas desulfurization
- Thickener & tailings
- Mine Dewatering
- Industrial slurries
- Dredge

### Range

- Discharge diameters – 2” to 26”
- Flows – 100 to 60,000 GPM (contact factory for higher flow needs)
- TDH to 300 ft/stage
- Up to 4,000 HP
- Test Pressure 150 psi (10 bar)
- Special high pressure design up to 900 PSI test available

### Construction

- Horizontal end suction. Single wall pump shell with replaceable suction side liner, three (for larger particle solids) or four vane impeller options.

### Features

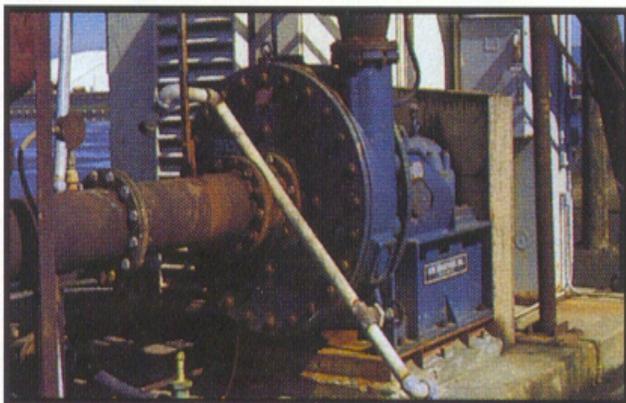
- Gasite® (hi-chrome hard iron) wear parts
- Elastomer-lined shell & suction liner available
- Heavy duty bearings
- Split stuffing box (ease of maintenance)
- Fused carbide coated hard shaft sleeve

Primarily for heavy duty service in a wide variety of slurry applications. GIW's rugged design features combined with shell, impeller and liner in proprietary GIW Gasite® material, are recognized worldwide for superior abrasion resistance. Interchangeable urethane (Gathane) or rubber wear parts are options.

Several options of shells and impellers to fine tune pump performance to customary pumping needs are available. This ensures long wear life and sustained efficiency.

Each LSA pump is equipped with a heavy duty, split cartridge bearing assembly with adapter mounted, spherical roller radial bearings and a separate steep angle, self-aligning thrust bearing for maximum high power capability. The fused carbide coated shaft sleeve provides a smooth and extremely hard surface for long seal packing life. Mechanical seal options are available.

Common size power end for several wet ends allows plant inventory reduction. For example: the LSA25 pedestal can be used for pump model 4X6LSA25 as well as the 12X12LSA32. This allows flow range change from 250 GPM to 7,500 GPM by a change of wet end parts only.



*Slurry pipeline*



*Tailings discharge*