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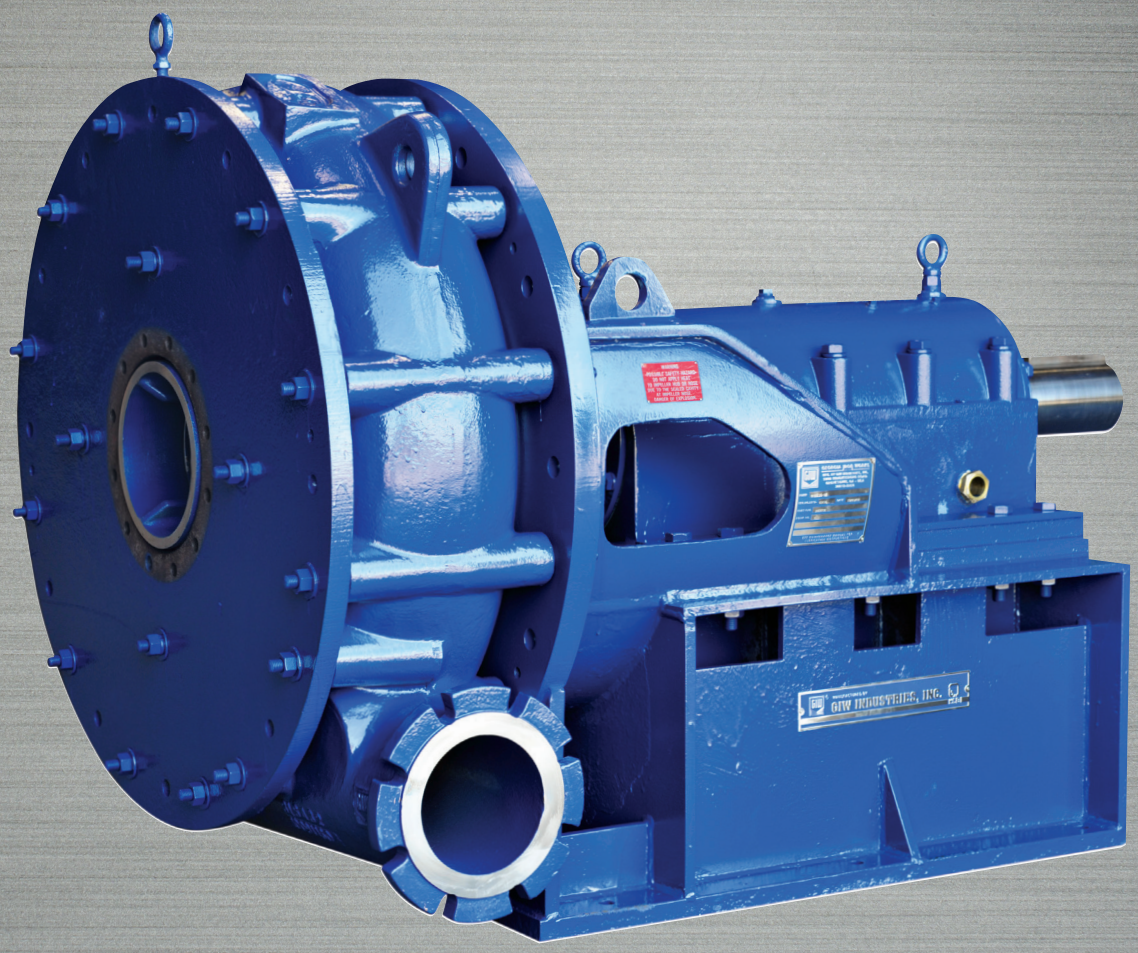
KSB MINING

LENNTECH
WATER TREATMENT SOLUTIONS

KSB

GIW® LSA Pump Series
Low maintenance, abrasion resistant for heavy duty service



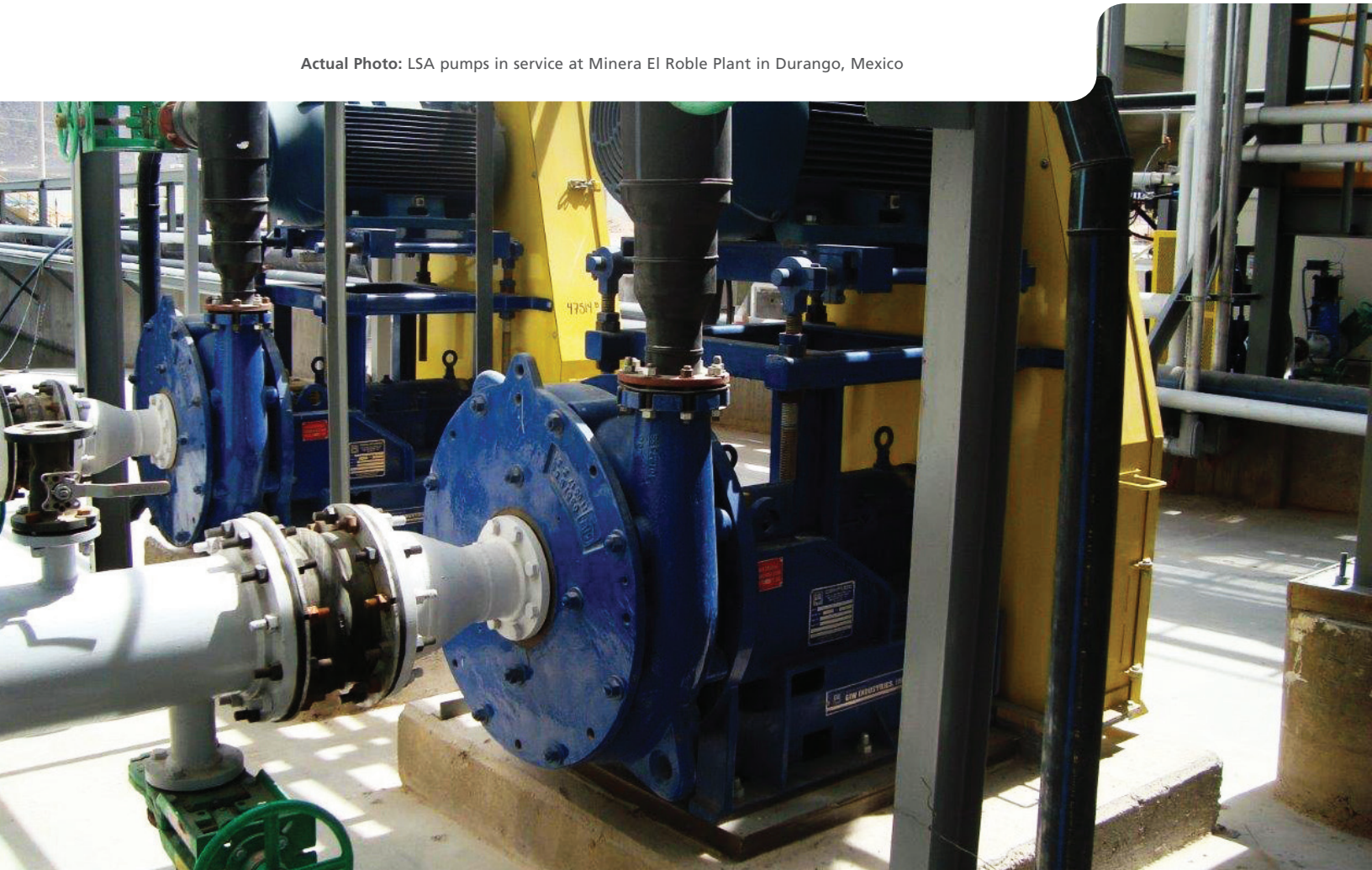
Solutions for Severe Ore and Tailings Slurry Transport

GIW® LSA pumps are widely used in ore transport, mill discharge, cyclone feed, tailings and plant process. The LSA can also be used for environmental cleanup, dewatering, pulp and paper, food process, coke & resin pumping and ash handling.

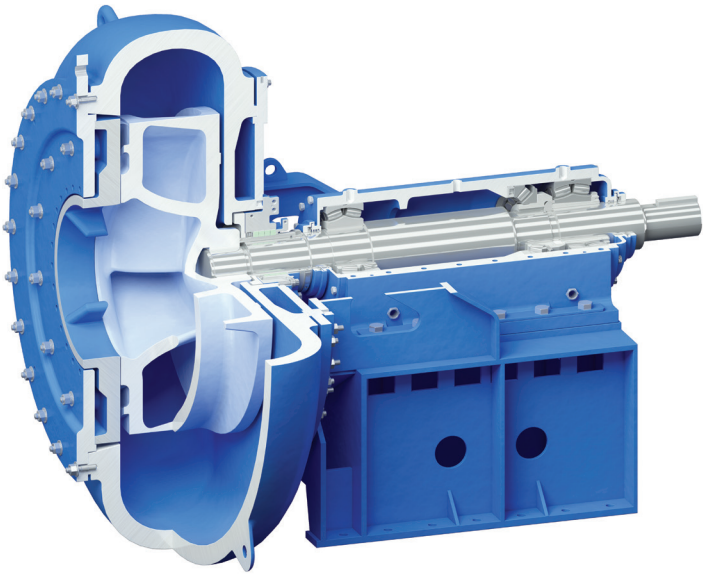
LSA's rugged design features, combined with shell, impeller and liner in proprietary GIW Gasite® material, are recognized worldwide for superior abrasion resistance. In addition, several impeller options to fine tune pump performance, and customized pumping needs are available. These options allow optimum wear life and sustained efficiency.

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

Actual Photo: LSA pumps in service at Minera El Roble Plant in Durango, Mexico



Choose the GIW® LSA Pump for Severe Slurries



Design

- Horizontal end suction construction. Single wall pump shell with replaceable suction side liner; four vane impeller or three vane option for larger size solids.

Wear Parts

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

Shaft Seal

- Replaceable wear plate maximizes stuffing box life. Reduced water consumption options available.
- Shaft sleeve with fused carbide wear resistant coating to maximize packing life. *Other material options available.

Mechanical End

- Robust stiffened shaft to improve the wear life of the mechanical end and stuffing box.
- Impeller release ring for safe and easy impeller removal. Feature is standard on larger pump sizes.
- Spring retainer ring locates the thrust bearing preload springs for correct axial thrust load.
- Radial bearings are a heavy duty, self-aligning, double-row, spherical roller-type design.
- Split-cartridge bearing assembly offers ease of inspection and maintenance.
- Accurate impeller clearance adjustments are easily made with the adjusting screw.
- Labyrinth seal end covers protect bearings from contamination.

Quick Alignment & Interchangeability

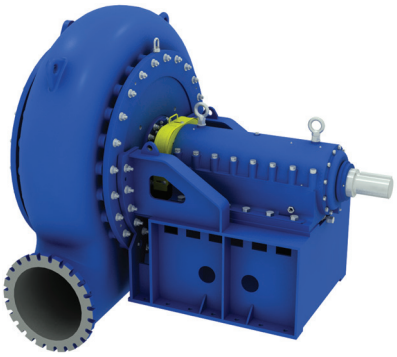
- Rabbet fits machined in the pedestal support the shell and provide component alignment.
- To optimize wear life and efficiency, various hydraulic design and material options can be used on the same mechanical end.

Technical Data

Discharge	2 to 36 in (50 to 915 mm)
Flow rates	100-110,000 gpm (20-25,000 m^3/h)
Total head	up to 350 ft (105 m)
Pressure rating	up to 715 psi (up to 50 bar)
Temperature limit	up to 250°F (120°C)

Applications

- Mineral Processing
- Power Generation
- Aggregate
- Ash Handling
- Flue Gas Desulfurization
- Thickener & Tailings
- Mine Dewatering
- Industrial Slurries
- Dredge



For ease of maintenance and maximum reliability, select the LSA Pump.

The LSA Pump Series offers a wide selection range

LSA Pump Options

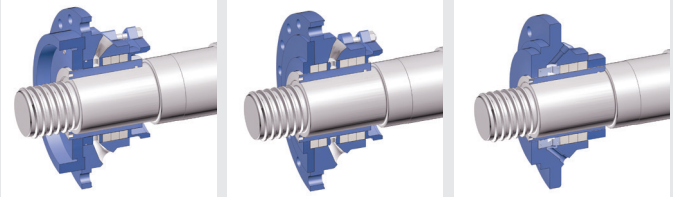
The LSA pump series is divided into four pump groups. Pumps can be custom tailored to meet a wide range of applications requirements. This allows customers to select the type, size and operation speed that will perform the best. Pumps included in the LSA series are:

- **LSA S** - normal severe duty requirements
- **LSA Expanded** - duty-specific applications such as high pressure, coarse and fine slurry
- **LHD** - low head, high flow applications
- **MHD** - medium head, high flow applications

Low Flow Stuffing Box Options

- Reduce sealing water flows up to 95%
- Maximize water control
- Pressure or flow controlled
- Restrict seal water flow into pump
- Minimize flush water spray
- Improve reliability

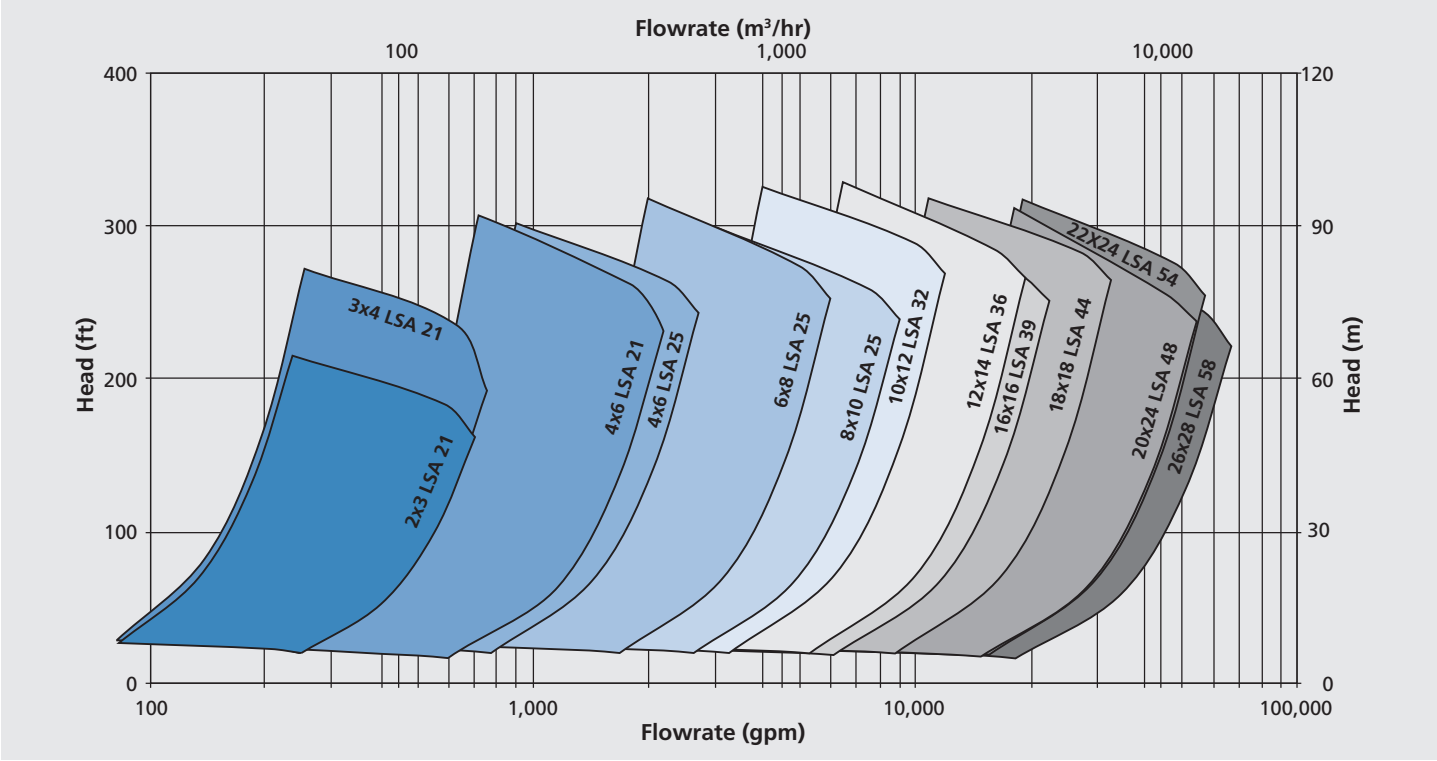
Shaft Seal Arrangements (Throat Bushing Std.)



Throat Bushing | KE Design (Minimum Dilution) | SpiralTrac™

LSA S Pump Range

Standard Pressure and Optimized Hydraulics
2000 to 7500 SFPM, 10 to 38 SMPS, 40% (or min. flow) to 120% BEPQ

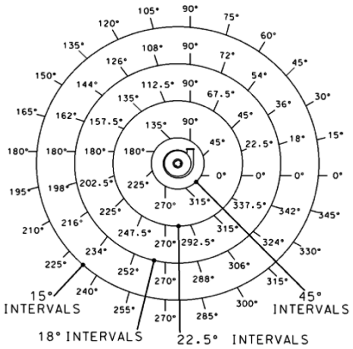


LSA S Pump Range Information Table

Assembly Number	Nominal Size		Maximum Operating Pressure		Free Passage		Discharge Position Intervals	Vane Number & Type
	in	mm	psi	bar	in	mm	degrees	
0572X	2x3-21	50x75-530	245	16.9	1.0x1.0	25x25	45	4ME
0573X	3x4-21	75x100-530	245	16.9	1.0x1.6	25x40	45	4ME
0574X	4x6-21	100x150-530	245	16.9	2.5x2.8	63x71	45	4ME
0516X	4x6-25	100x150-635	180	12.4	1.5x1.5	39x39	22.5	4ME
0501X	6x8-25	150x200-635	180	12.4	3.2x3.6	81x92	22.5	4ME
0575X	8x10-25	200x250-635	180	12.4	2.4x4.9	63x125	22.5	4ME
0562X	8x10-32	200x250-810	172	11.8	3.9x4.6	99x117	22.5	4ME
0563X	8x10-32	200x250-810	172	11.8	4.6x4.6	117x115	22.5	3ME
0564X, 0566X	8x10-32	200x250-810	187	12.9	3.9x4.6	99x117	15	4ME
0565X, 0567X	8x10-32	200x250-810	187	12.9	4.6x4.6	117x117	15	3ME
0576X,0577X	10x12-32	250x300-810	157	10.8	3.7x6.7	95x171	15	4ME
0508X, 0510X	10x12-36	250x300-910	160	11.0	4.0x6.7	102x171	15	4ME
0509X, 0511X	10x12-36	250x300-910	156	10.8	6.3x6.7	160.x171	15	3ME
0568X, 0570X	12x14-36	300x350-910	172	11.9	5.1x8.3	129x210	15	4ME
0569X, 0571X	12x14-36	300x350-910	172	11.9	6.4x8.3	162x210	15	3ME
0578X	16x16-39	400x400-990	119	8.2	5.8x8.2	148x209	15	4ME
0529X	16x16-39	400x400x990	129	8.9	6.9x8.0	175x203	15	3ME
0579X, 0580X	16x16-39	400x400-990	122	8.4	4.4x8.7	112x222	9	4ME
0531X, 0533X	16x16-39	400x400x990	126	8.7	6.9x8.0	175x203	9	3ME
0581X,0583X	16x18-44	400x450-1115	142	9.8	5.5x7.6	141x193	9	4ME
0582X, 0584X	16x18-44	400x450-1115	142	9.8	7.6x7.6	193x193	9	3ME
0585X, 0587X	18x18-44	450x450-1115	187	12.9	6.3x11.6	161x295	9	4ME
0539X, 0541X	18x18-44	450x450-1115	160	11.0	8.9x11.6	226x295	9	3ME
0552X, 0553X	18x20-44	450x500-1115	168	11.5	7.1x11.6	180x295	9	4ME
0589X, 0590X	20x20-48	500x500-1220	120	8.3	9.7x13.0	247x330	9	4ME
0548X	20x20-48	500x500-1220	130	9.0	9.7x13.0	247x330	15	4RV
0549X	20x24-48	500x600-1220	113	7.8	6.1x13.0	155x330	15	4ME
0550X	22x24-54	550x600-1370	187	12.9	8.1x13.5	208x343	15	4ME
0551X	26x28-58	650x700-1470	100	6.9	8.6x11.7	218x298	15	4ME

Discharge Positions

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



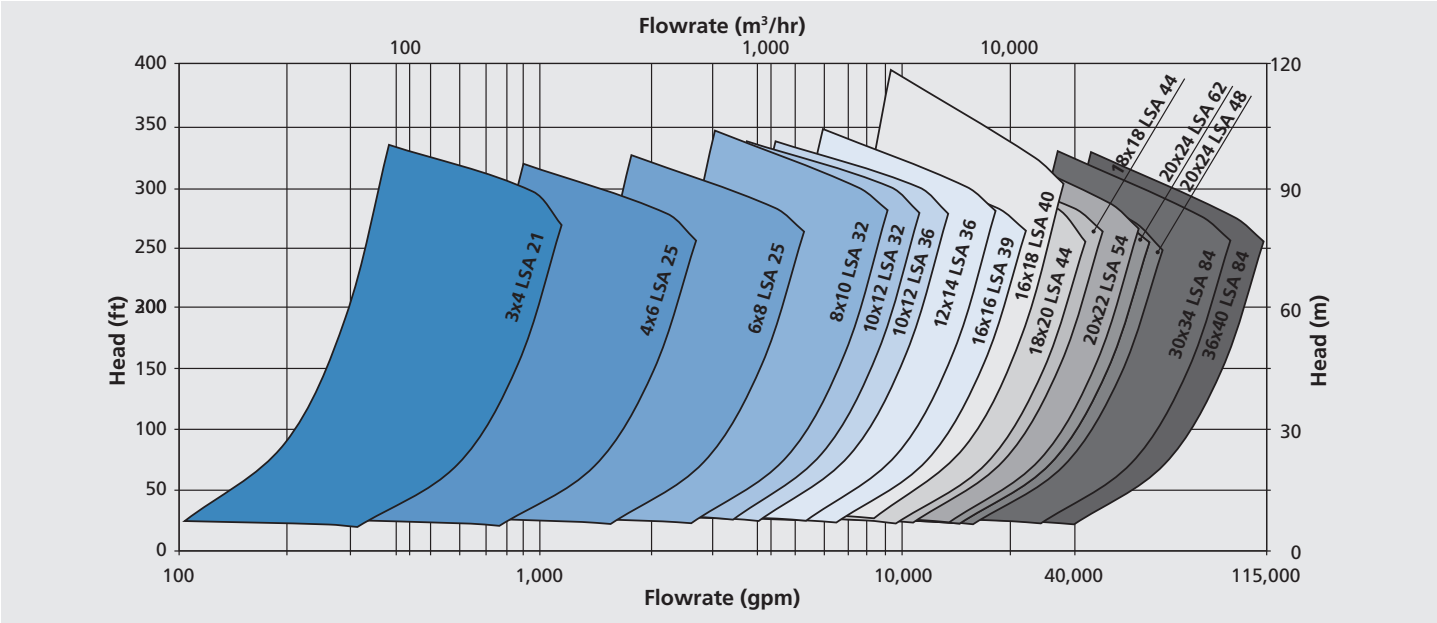
Materials

Part Number	Item	Standard
101	Shell	Gasite® WD28G
230	Impeller	Gasite® WD28G
16-1	Suction Plate	Ductile Iron
13-19	Suction Liner	Gasite® 18G
332	Pedestal	Fab Steel
210	Shaft	4150 Steel
451	Stuffing Box	Grey Iron
524	Shaft Sleeve	Carbide Coated Steel
350	Bearing Housing	Grey Iron

Consult the factory for materials and configurations for temperatures above 150° F. Alternate material options are available.

LSA Expanded Pump Range

High Pressure and Other Available Hydraulics
2000 to 7500 SFPM, 10 to 38 SMPS, 40% (or min. flow) to 120% BEPQ

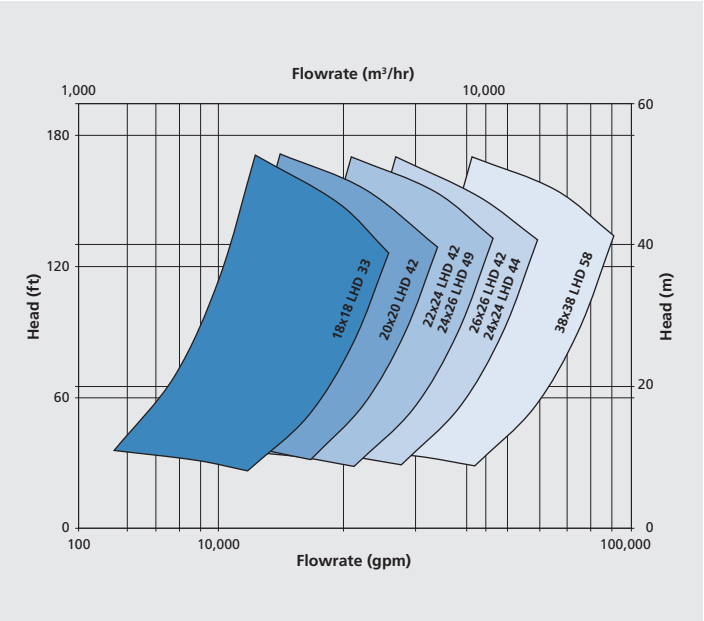


LSA Expanded Pump Range Information Table

Assembly Number	Nominal Size		Maximum Operating Pressure		Free Passage		Discharge Position Intervals	Vane Number & Type
	in	mm	psi	bar	in	mm	degrees	
9603D	3x4-21	75x100-530	333	23.0	1x2.3	25x58	45	4ME
9606D	4x6-25	100x150-635	667	46.0	1.56x3.3	40x84	22.5	4ME
9602D	6x8-25	150x200-635	717	49.4	3.2x3.6	81x91	22.5	4ME
9594D	8x10-32	200x250-810	485	33.5	3.9x4.6	99x117	15	4ME
9575D	10x12-32	250x300-810	400	27.6	4.2x6.5	107x165	15	4ME
9555D	10x12-36	250x300-910	400	27.6	4x6.75	102x171	15	4ME
9818D	12x14-36	300x350-910	383	26.4	5.1x8.3	130x211	15	4ME
9514D	14x16-40	350x400-1015	420	29.0	6x6.2	152x157	9	4ME
9572D	16x16-39	400x400-990	333	23.0	5.7x8	145x203	15	4ME
9635D	16x18-40	400x450-1015	230	15.9	4.9x7.9	124x201	18	5ME
9554D	18x18-44	450x450-1115	202	13.9	6.3x10	160x254	9	4ME
9544D	18x20-44	450x500-1115	500	34.5	6.3x10	160x254	9	5HE
9573D	20x22-54	500x550-1370	123	8.5	8x10.25	203x260	15	4ME
9827D	20x24-48	500x600-1220	117	8.0	5x12	127x305	15	5ME
9834D	20x24-62	500x600-1575	213	14.7	11.5x11.7	292x297	12.86	3ME
9835D	20x25-62	500x635-1575	200	13.8	10.2x10.4	259x264	12.86	3ME
9837D	24x24-62	600x600-1575	283	19.5	11.5x11.7	292x297	12.86	3ME
9527D	30x34-84	760x860-2130	200	13.8	13.5x14.7	343x373	11.25	3ME
1031E	36x40-84	915x1015-2130	285	19.7	11.6x17.7	295x450	11.25	4ME

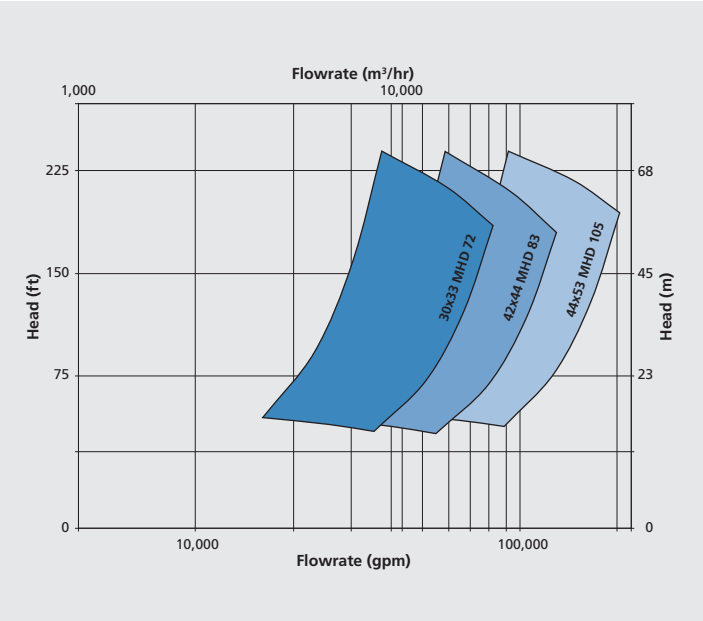
LHD Pump Range

High Specific Speed Pumps - 6500 SFPM, 33.0 SMPS, Approx. 50% to 110% BEPQ



MHD Pump Range

Low and Medium Speed Pumps - 6800 SFPM, 34.5 SMPS, Approx. 50% to 110% BEPQ



LHD Pump Range Information Table

Assembly Number	Nominal Size		Maximum Operating Pressure		Free Passage		Discharge Position Intervals	Vane Number & Type
	in	mm	psi	bar	in	mm	degrees	
9601D	18x18-33	450x450-830	117	8	6.6x8.0	168x203	15	3ME
9518D	20x20-42	500x500-1065	133	9.2	9.6x10.6	245x269	9	3ME
9819D	22x24-42	550x600-1065	160	11	11.5x12.0	292x305	9	3ME
9607D	24x24-44	600x600-1115	97	6.7	11.0x16.0	279x406	9	3ME
9814D	24x26-49	600x650-1245	220	15.2	7.7x14.1	196x358	15	4ME
9455D	26x26-50	650x650-1270	147	10.1	15.0x15.3	381x387	22.5	3ME
9300D	38x38-58	950x950-1473	87	6	12.4x13.7	315x348	N/A	4HE

MHD Pump Range Information Table

Assembly Number	Nominal Size		Maximum Operating Pressure		Free Passage		Discharge Position Intervals	Vane Number & Type
	in	mm	psi	bar	in	mm	degrees	
9689D	24x28-58	600x700-1473	137	9.4	9.3x13.8	236x349	15	4ME
9526D	30x33-72	750x825-1825	191	13.2	15.5x15.8	394x401	11.25	3ME
5417D	42x44-83	1050x1100-2108	70	4.8	16.2x19.2	412x488	N/A	3ME
9068D	44x53-105	1100x1325-2667	N/A	N/A	21.3x23.0	541x584	N/A	4ME

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