GIW® Minerals

LCC Pump Series - Corbrasion™ Resistant, High Performance Slurry Pumps



Solutions for the most Abrasive and Corrosive Slurry Applications

With High Performance Corbrasion™ Resistance, the GIW® Minerals LCC Pump family withstands the most severe slurry applications.

The LCC Pump family is recommended for applications with coarse or fine particles from solids-laden waste to agressive slurries of an abrasive and/or corrosive nature.

LCC's rugged design features, combined with shell, impeller and liner in our proprietary 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 high performance and low maintenance the wet end consists of three components: a shell or casing, an impeller that screws onto the shaft and a suction plate/liner to permit easy assembly and disassembly for maintenance and inspections.

Actual Photo: LCC-R in service at Minera El Roble Plant in Durango, Mexico



Choose the GIW® Minerals LCC Pump for Agressive Slurries

Corbrasive™ Resistant Wet End Parts

- Advanced metallurgy provides Corbrasive™ (corrosion and abrasive wear resistant) alloys tailored to meet virtually any slurry pumping condition.

Advanced Hydraulic Design

- Uses the latest technology tried and tested in our Hydraulic Laboratory and in the field.

Single Wall Hard Metal shell

- CAD designed shell and replaceable suction plate/liner
- Interchangeable sizes with 2 pedestals and 4 mechanical ends
- Alloys available for difficult chemical applications



Rubber Lined

- Precision molded rubber parts
- Bolt in liners for easy maintenance
- CNC machined ductile iron casings
- 2-stage operating pressure capacity up to 230 psi (16 bar)

Extra Heavy Hard Metal

- Heavier metal sections and hydraulics suited to severe duties
- 2-stage operating pressure capacity up to 230 psi (16 bar)
- Separate suction liner and non-wearing plate (lower replacement cost)
- Available in sizes 150-500 (6" x 20") and above

Impellers (metal/rubber)

- Twisted three vane design provides high efficiency and low net positive suction head requirements
- Maximum sphere passage
- Available in various materials including GIW Minerals alloys, polyurethane and extreme duty versions

Also available in rubber

- Interchangeable with existing metal impellers used in earlier LCC-R pumps
- Designed with proven advanced hydraulics
- Best wear resistant rubber on the market
- Thickened shrouds and vanes provide maximum wear resistance in heavier slurries

Cartridge Bearing Assembly

- CNC machined cast iron cylindrical housing
- Double row tapered roller bearings handle mechanical and thrust forces
- INPRO® Bearing Isolators are standard
- Oil or grease lubrication

Pedestal

- CNC machined cast iron
- Self-aligning concentric bearing supports
- Integrated impeller gap adjustment screw
- Two pedestal sizes for entire LCC range

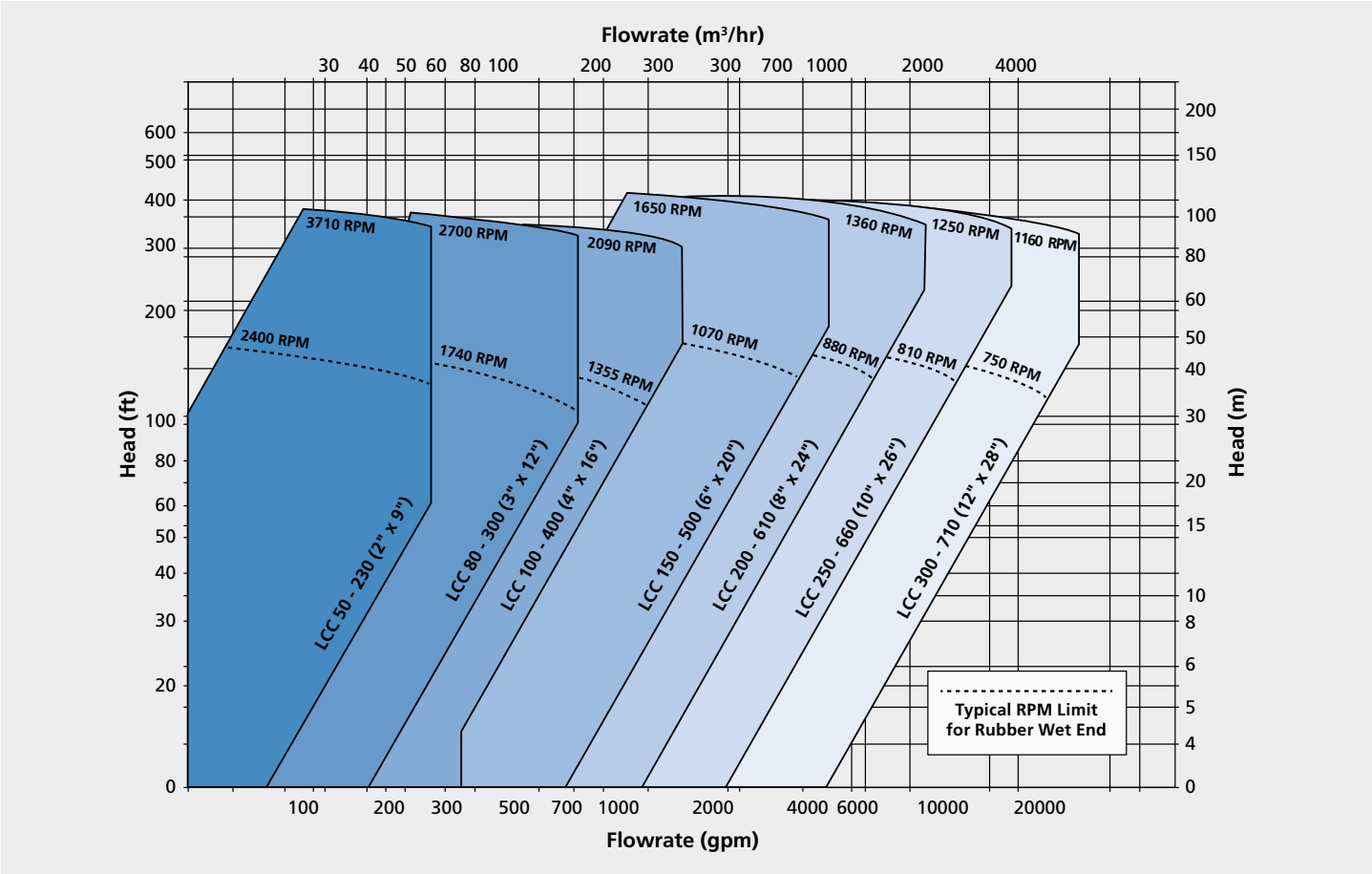
Technical Data

Discharge	2 to 12 in (50 to 300 mm)
Flow rates	up to 17,000 gpm (3,860 m^3/h)
Total head	up to 300 ft (90 m)
Power rating	up to 750 Hp (560 kW)
Temperature limit	up to 248°F (+120°C)

Applications

- Chemical Slurry Service
- Mineral Processing
- Sand and Gravel
- Tailings
- Fine Primary Mill Grinding
- Secondary Grinding
- In-plant Processes
- Coal Preparation

The LCC Pump Series offers a wide selection range



LCC Seal Arrangements

1 Mechanical Seal

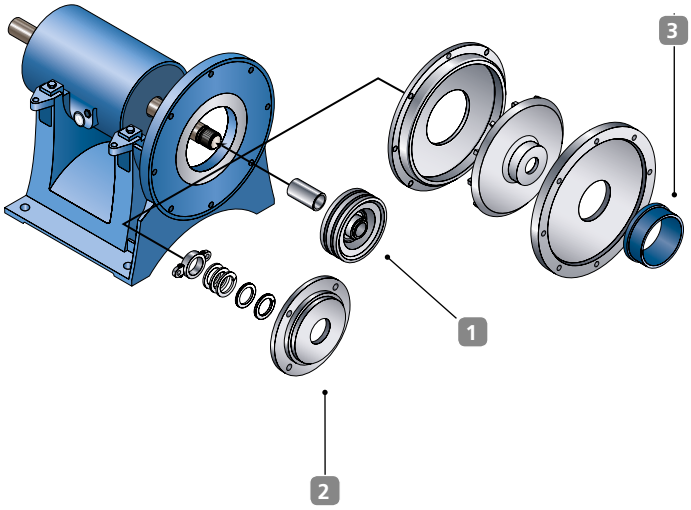
- Use when gland water cannot be added to process
- Available for standard and chemical duty
- Dry design, optional back flush, and double

2 Stuffing Box

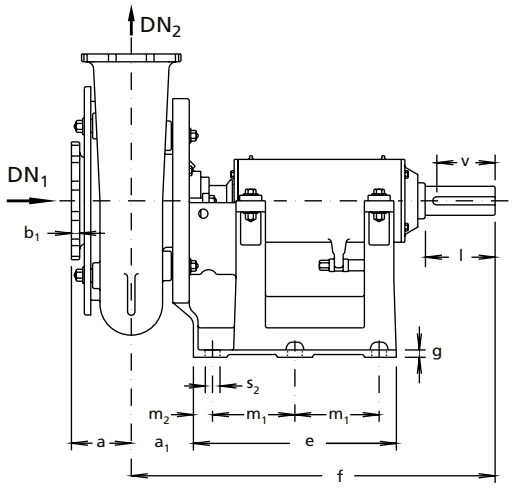
- Standard KE design with lantern ring and packing
- Throttle bushing design for special applications

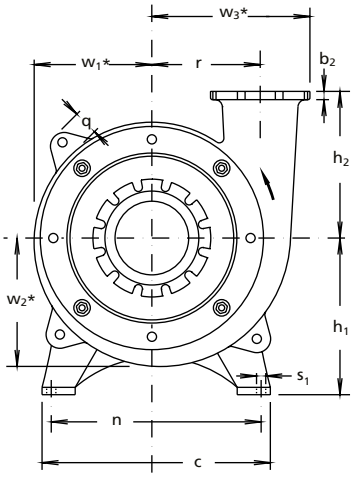
3 Expeller Seal

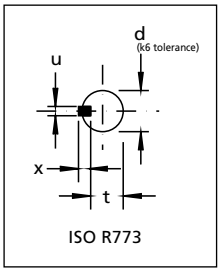
- Use when process dilution must be minimized
- Expeller rotor and chamber balance pressures at gland packing for zero leakage
- Exclusive internal diverter provides additional efficiency
- Stuffing box includes port for maintenance flushing



LCC Metal Dimensions





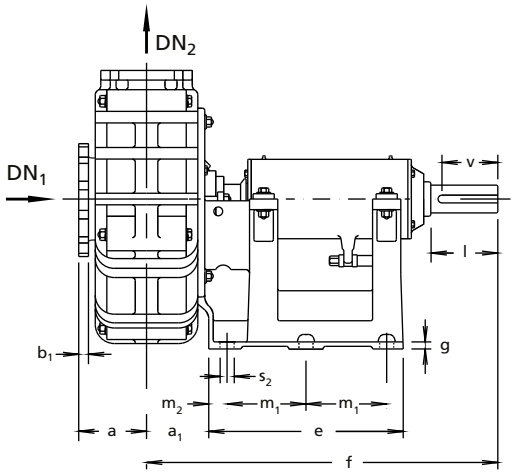


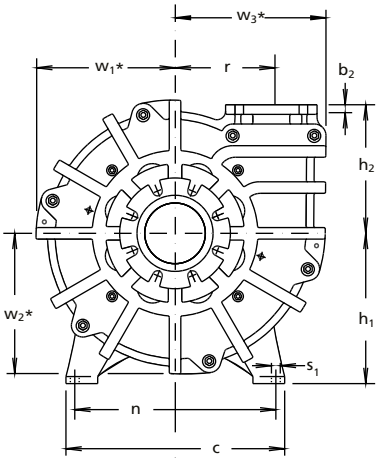
Pump and Shaft Size		Pump										*May exceed h_1 Dimensions in inches (US)			Shaft in mm
		DN_1	DN_2	a	a_1	b_1	b_2	f	h_1	h_2	r	w_1 (ref.)	w_2 (ref.)	w_3 (ref.)	q (ref.)
50-230	1	3	2	4.53	4.61[1)]	0.87	0.79	29.84[1)]	14.57	9.06	5.71	6.69	6.89	8.71	1.56
(2"x9")	2	3	2	4.53	4.61[1)]	0.87	0.79	32.09[1)]	14.57	9.06	5.71	6.69	6.89	8.71	1.56
80-300	1	4	3	4.72	4.96[1)]	0.87	0.87	30.16[1)]	14.57	10.63	7.87	8.86	9.45	11.62	1.88
(3"x12")	2	4	3	4.72	4.96[1)]	0.87	0.87	32.40[1)]	14.57	10.63	7.87	8.86	9.45	11.62	1.88
100-400	1	6	4	5.32	5.43[1)]	0.94	0.94	30.63[1)]	14.57	12.80	9.84	11.22	11.81	14.34	2.19
(4"x16")	2	6	4	5.32	5.43[1)]	0.94	0.94	32.87[1)]	14.57	12.80	9.84	11.22	11.81	14.34	2.19
	3	6	4	5.32	7.91[3)]	0.94	0.94	43.19[3)]	21.26	12.80	9.84	11.22	11.81	14.34	2.19
150-500	3	8	6	6.89	7.44[2)]	1.26	0.94	42.72[2)]	21.26	16.14	12.21	14.17	14.76	17.71	2.63
(6"x20")	4	8	6	6.89	7.44[2)]	1.26	1.06	48.23[2)]	21.26	16.14	12.21	14.17	14.76	17.71	2.63
200-610	3	10	8	8.27	8.62[2)]	1.26	1.06	43.90[2)]	21.26	20.08	14.17	16.54	17.32	20.92	3.38
(8"x24")	4	10	8	8.27	8.62[2)]	1.26	1.26	49.41[2)]	21.26	20.08	14.17	16.54	17.32	20.92	3.38
	5	10	8	8.27	8.62[2)]	1.26	1.26	52.56[2)]	21.26	20.08	14.17	16.54	17.32	20.92	3.38
250-660	3	12	10	9.65	9.80[2)]	1.26	1.26	45.08[2)]	21.26	22.05	15.95	18.90	20.08	23.95	3.94
(10"x26")	4	12	10	9.65	9.80[2)]	1.26	1.26	50.59[2)]	21.26	22.05	15.95	18.90	20.08	23.95	3.94
	5	12	10	9.65	9.80[2)]	1.26	1.26	53.74[2)]	21.26	22.05	15.95	18.90	20.08	23.95	3.94
300-710	3	14	12	11.42	11.38[2)]	1.46	1.26	46.65[2)]	21.26	22.05	18.11	22.05	24.02	27.61	3.94
(12"x28")	4	14	12	11.42	11.38[2)]	1.46	1.26	52.17[2)]	21.26	22.05	18.11	22.05	24.02	27.61	3.94
	5	14	12	11.42	11.38[2)]	1.46	1.26	55.32[2)]	21.26	22.05	18.11	22.05	24.02	27.61	3.94

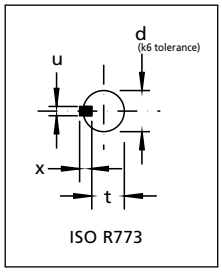
1) When assembled with expeller + 2.76 in 2) When assembled with expeller + 3.94 in 3) No expeller

Shaft Size		Pedestal and Shaft End										Dimensions in inches (US)		Shaft in mm
	c	e	g	m_1	m_2	n	s_1	s_2	d (mm)	l	t (mm)	u (mm)	v (mm)	x (mm)
1	20.87	19.53	0.79	7.78	1.85	18.90	1.00	1.56	35	4.09	30.3	10	90	8
2	20.87	19.53	0.79	7.78	1.85	18.90	1.00	1.56	50	5.98	44.5	14	100	9
3	31.50	27.40	1.00	11.32	2.60	28.54	1.38	2.00	70	6.77	62.5	20	140	12
4	31.50	27.40	1.00	11.32	2.60	28.54	1.38	2.00	100	10.04	90.0	28	200	16
5	31.50	27.40	1.00	11.32	2.60	28.54	1.38	2.00	125	10.43	113.9	32	200	18

LCC Rubber Dimensions







Pump and Shaft Size		Pump												
		DN_1	DN_2	a	a_1	b_1	b_2	f	h_1	h_2	r	w_1 (ref.)	w_2 (ref.)	w_3 (ref.)
50-230	1	3	2	4.53	4.61[1)]	0.87	0.79	29.84[1)]	14.57	9.06	5.71	8.82	9.17	9.49
(2"x9")	2	3	2	4.53	4.61[1)]	0.87	0.79	32.09[1)]	14.57	9.06	5.71	8.82	9.17	9.49
80-300	1	4	3	4.72	4.96[1)]	0.87	0.87	30.16[1)]	14.57	10.63	7.87	11.38	11.81	12.28
(3"x12")	2	4	3	4.72	4.96[1)]	0.87	0.87	32.40[1)]	14.57	10.63	7.87	11.38	11.81	12.28
100-400	1	6	4	5.32	5.43[1)]	0.94	0.94	30.63[1)]	14.57	12.80	9.84	14.29	14.84	15.43
(4"x16")	2	6	4	5.32	5.43[1)]	0.94	0.94	32.87[1)]	14.57	12.80	9.84	14.29	14.84	15.43
150-500	3	8	6	6.89	7.44[2)]	1.26	1.06	42.72[2)]	21.26	16.14	12.21	17.95	18.70	19.41
(6"x20")	4	8	6	6.89	7.44[2)]	1.26	1.06	48.23[2)]	21.26	16.14	12.21	17.95	18.70	19.41
200-610	3	10	8	8.27	8.62[2)]	1.26	1.26	43.90[2)]	21.26	20.08	14.17	21.14	21.97	22.80
(8"x24")	4	10	8	8.27	8.62[2)]	1.26	1.26	49.41[2)]	21.26	20.08	14.17	21.14	21.97	22.80
	5	10	8	8.27	8.62[2)]	1.26	1.26	52.56[2)]	21.26	20.08	14.17	21.14	21.97	22.80
250-660	3	12	10	9.65	9.80[2)]	1.26	1.26	45.08[2)]	21.26	22.05	15.95	23.82	25.00	26.18
(10"x26")	4	12	10	9.65	9.80[2)]	1.26	1.26	50.59[2)]	21.26	22.05	15.95	23.82	25.00	26.18
	5	12	10	9.65	9.80[2)]	1.26	1.26	53.74[2)]	21.26	22.05	15.95	23.82	25.00	26.18
300-710	3	14	12	11.42	11.38[2)]	1.46	1.26	46.65[2)]	21.26	25.20	18.11	27.24	28.98	30.75
(12"x28")	4	14	12	11.42	11.38[2)]	1.46	1.26	52.17[2)]	21.26	25.20	18.11	27.24	28.98	30.75
	5	14	12	11.42	11.38[2)]	1.46	1.26	55.32[2)]	21.26	25.20	18.11	27.24	28.98	30.75

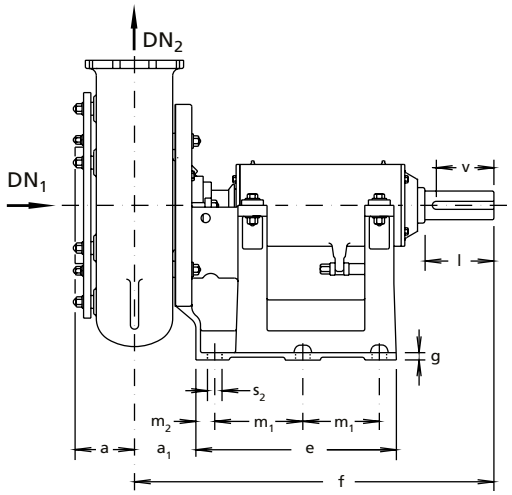
*May exceed h_1 Dimensions in inches (US) Shaft in mm

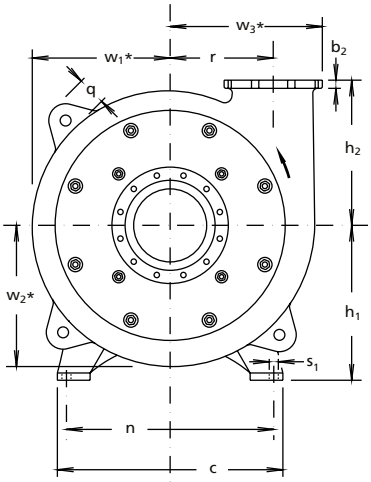
1) When assembled with expeller + 2.76 in 2) When assembled with expeller + 3.94 in

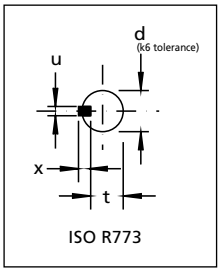
Shaft Size		Pedestal and Shaft End											
	c	e	g	m_1	m_2	n	s_1	s_2	d (mm)	l	t (mm)	u (mm)	v (mm)	x (mm)
1	20.87	19.53	0.79	7.78	1.85	18.90	1.00	1.56	35	4.09	30.3	10	90	8
2	20.87	19.53	0.79	7.78	1.85	18.90	1.00	1.56	50	5.98	44.5	14	100	9
3	31.50	27.40	1.00	11.32	2.60	28.54	1.38	2.00	70	6.77	62.5	20	140	12
4	31.50	27.40	1.00	11.32	2.60	28.54	1.38	2.00	100	10.04	90.0	28	200	16
5	31.50	27.40	1.00	11.32	2.60	28.54	1.38	2.00	125	10.43	113.9	32	200	18

Dimensions in inches (US) Shaft in mm

LCC Extra Heavy Dimensions







Pump and Shaft Size		Pump													*May exceed h_1 Dimensions in inches (US) Shaft in mm
		DN_1	DN_2	a	a_1	b_2	f	h_1	h_2	r	w_1 (ref.)	w_2 (ref.)	w_3 (ref.)	q (ref.)	
150-500	3	8	6	6.89	7.44[2)]	1.06	42.72[2)]	21.26	16.14	12.21	16.34	16.73	17.71	2.63	
(6"x20")	4	8	6	6.89	7.44[2)]	1.06	48.23[2)]	21.26	16.14	12.21	16.34	16.73	17.71	2.63	
200-610	3	10	8	8.27	8.62[2)]	1.26	43.90[2)]	21.26	20.08	14.17	18.90	19.49	20.92	3.94	
(8"x24")	4	10	8	8.27	8.62[2)]	1.26	49.41[2)]	21.26	20.08	14.17	18.90	19.49	20.92	3.94	
	5	10	8	8.27	8.62[2)]	1.26	52.56[2)]	21.26	20.08	14.17	18.90	19.49	20.92	3.94	
250-660	3	12	10	9.65	9.80[2)]	1.26	45.08[2)]	21.26	22.05	15.95	21.65	22.44	23.95	3.94	
(10"x26")	4	12	10	9.65	9.80[2)]	1.26	50.59[2)]	21.26	22.05	15.95	21.65	22.44	23.95	3.94	
	5	12	10	9.65	9.80[2)]	1.26	53.74[2)]	21.26	22.05	15.95	21.65	22.44	23.95	3.94	
300-710	3	14	12	11.42	11.38[2)]	1.26	46.65[2)]	21.26	25.20	18.11	25.59	26.97	27.61	3.94	
(12"x28")	4	14	12	11.42	11.38[2)]	1.26	52.17[2)]	21.26	25.20	18.11	25.59	26.97	27.61	3.94	
	5	14	12	11.42	11.38[2)]	1.26	55.32[2)]	21.26	25.20	18.11	25.59	26.97	27.61	3.94	

1) When assembled with expeller + 2.76 in 2) When assembled with expeller + 3.94 in

Shaft Size		Pedestal and Shaft End												Dimensions in inches (US) Shaft in mm
	c	e	g	m_1	m_2	n	s_1	s_2	d (mm)	l	t (mm)	u (mm)	v (mm)	x (mm)
3	31.50	27.40	1.00	11.32	2.60	28.54	1.38	2.00	70	6.77	62.5	20	140	12
4	31.50	27.40	1.00	11.32	2.60	28.54	1.38	2.00	100	10.04	90.0	28	200	16
5	31.50	27.40	1.00	11.32	2.60	28.54	1.38	2.00	125	10.43	113.9	32	200	18



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GIW® Minerals

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