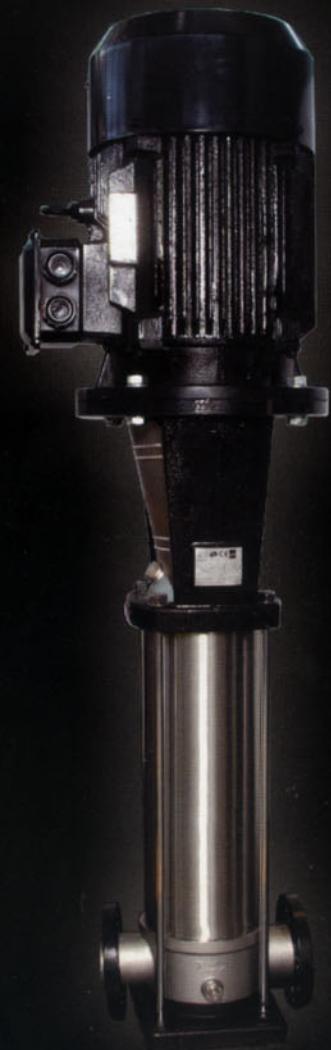


## Vertical Multistage

## Inline Pumps

# KSIL Series



**KSIL Series**

## Constructional Features

Kirloskar Stainless Steel Inline (KSIL) pumps are vertical multistage centrifugal pumps. The in-line design enables installation of the pump in horizontal one-pipe systems. The suction and discharge ports are of the same dimension and are in the same horizontal plane. This arrangement ensures a compact pump design and calls for simpler and less complicated piping systems. KSIL pumps come in a range of sizes and number of stages to provide the requisite flow and pressure for diverse applications. KSIL pumps are suitable for a variety of applications ranging from supply of domestic drinking water to pumping chemicals for industrial washing. The pumps are therefore used in a wide variety of pumping systems where the performance and material of the pump meet specific demands.

## Special Features

Durable, light weight, low noise level, compact, aesthetical design, corrosion resistant, reliable sealing and ease of maintenance.

Energy efficient superior hydraulics design and ultra smooth hydraulic passages.

## Parts and their Features

**Suction and delivery casing** – Inline suction and discharge casing ensures easy installation and simple piping layout with negligible effect of outside nozzle forces/movements.

**Impeller** – Pressed stainless steel, enclosed radial flow impeller having ultra smooth hydraulic passages resulting in higher efficiency. Impellers have superior suction eye design ensuring lower NPSH.

**Outer casing cover** – Pressurized water between diffuser and outer casing dampens the noise almost completely, ensuring near-silent operation.

**Shaft** – High tensile stainless steel shaft. The shaft is sealed with mechanical seal.

**Coupling** - Iron based powder metallurgy.

**Flanges** – Flanges are in DIN standard. DIN round flange – KSIL1, KSIL3, KSIL5, KSIL10, KSIL15, KSIL 20.

**Motor** - Totally Enclosed Fan Cooled(TEFC), 2-pole asynchronous motor with ingress protection class: IP 55.

## Applications

KSIL series vertical multistage centrifugal pumps are widely used to transfer those liquids that are low-viscosity, non-inflammable and non-explosive and contain no solid particles or fibers. Our vertical multistage centrifugal pumps are increasingly used in the following areas:

**Water supply:** Filtration and transfer at waterworks, Distribution from waterworks, Pressure boosting in mains, Pressure boosting in high-rise buildings, hotels, etc.

**Industrial pressure boosting:** Process water systems, coolant circulation, washing and cleaning systems, vehicle washing tunnels.

**Liquid transfer:** Cooling and air-conditioning systems (refrigerants), boiler feed and condensate systems, machine tools (cooling lubricants), oils and alcohols, glycol and coolants.

**Water treatment:** Ultra-filtration systems, reverse osmosis(RO) systems, softening, ion exchange, demineralizing(DM) systems, distillation systems, separators, swimming pools.

**Building industry –** Booster, fire fighting, hydro-pneumatic(HYPN) systems, heating, ventilation and air conditioning (HVAC) systems.

**Small capacity power plant -** Boiler feed and condensate transfer.

**Irrigation:** Field irrigation (flooding), sprinkler irrigation, drip-feed irrigation.

**Dairy, Food processing and Beverage industries:** Supply of clean water.

## Operating Conditions of Vertical Multistage Centrifugal Inline Pumps

Pumped liquid must not react with the pump materials. When liquids to be pumped have a higher density or viscosity than that of water, a higher-power motor should be used.

Liquid temperature : -20°C to + 120°C

Flow ranges : 0.4~28m<sup>3</sup>/h

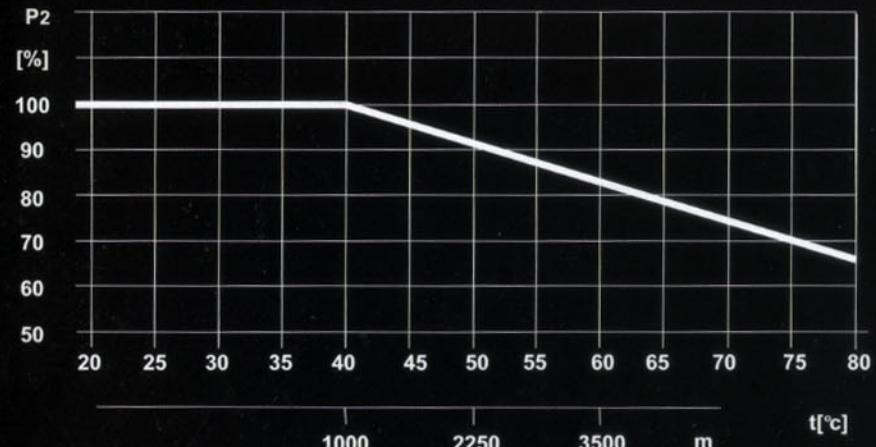
pH : 4.5~9

Maximum ambient temperature : + 40°C

Maximum operating pressure : 25 bar

Altitude : up to 1000 metres

(At higher altitudes or higher ambient temperatures the motor output (P2) reduces because of lower air densities and poor cooling effects).



For example, when the pump is operated at an altitude of 3500 m, the motor output (P2) drops to 88% of the normal performance. Or when the pump is operated at an ambient temperature of 70°C the pump output (P2) drops to 76%.

## PUMP NOMENCLATURE

K S IL 3-10

Number of stages

Rated flow (m<sup>3</sup>/h)

Inline Pump

Stainless Steel wetted part

Kirloskar



### Maximum Operating Pressure

Models	Maximum Operating Pressure
KSIL 1	25 bar
KSIL 3	25 bar
KSIL 5	25 bar
KSIL 10	25 bar
KSIL 15	25 bar
KSIL 20	25 bar

### Maximum Inlet Pressure

Series	Models	Maximum Inlet Pressure
KSIL 1	KSIL 1-2 → KSIL 1-36	10 bar
KSIL 3	KSIL 3-2 → KSIL 3-29	10 bar
	KSIL 3-31 → KSIL 3-36	15 bar
KSIL 5	KSIL 5-2 → KSIL 5-16	10 bar
	KSIL 5-18 → KSIL 5-36	15 bar
KSIL 10	KSIL 10-1 → KSIL 10-6	8 bar
	KSIL 10-7 → KSIL 10-22	10 bar
KSIL 15	KSIL 15-1 → KSIL 15-3	8 bar
	KSIL 15-4 → KSIL 15-17	10 bar
KSIL 20	KSIL 20-1 → KSIL 20-3	8 bar
	KSIL 20-4 → KSIL 20-17	10 bar

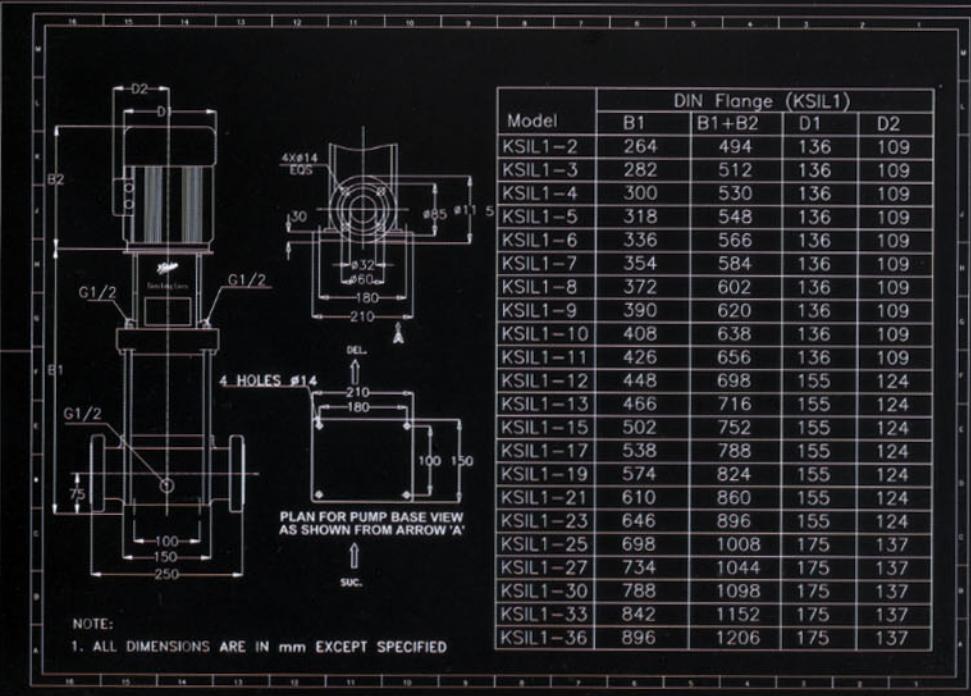
# KSIL1 SERIES

## Performance Tables

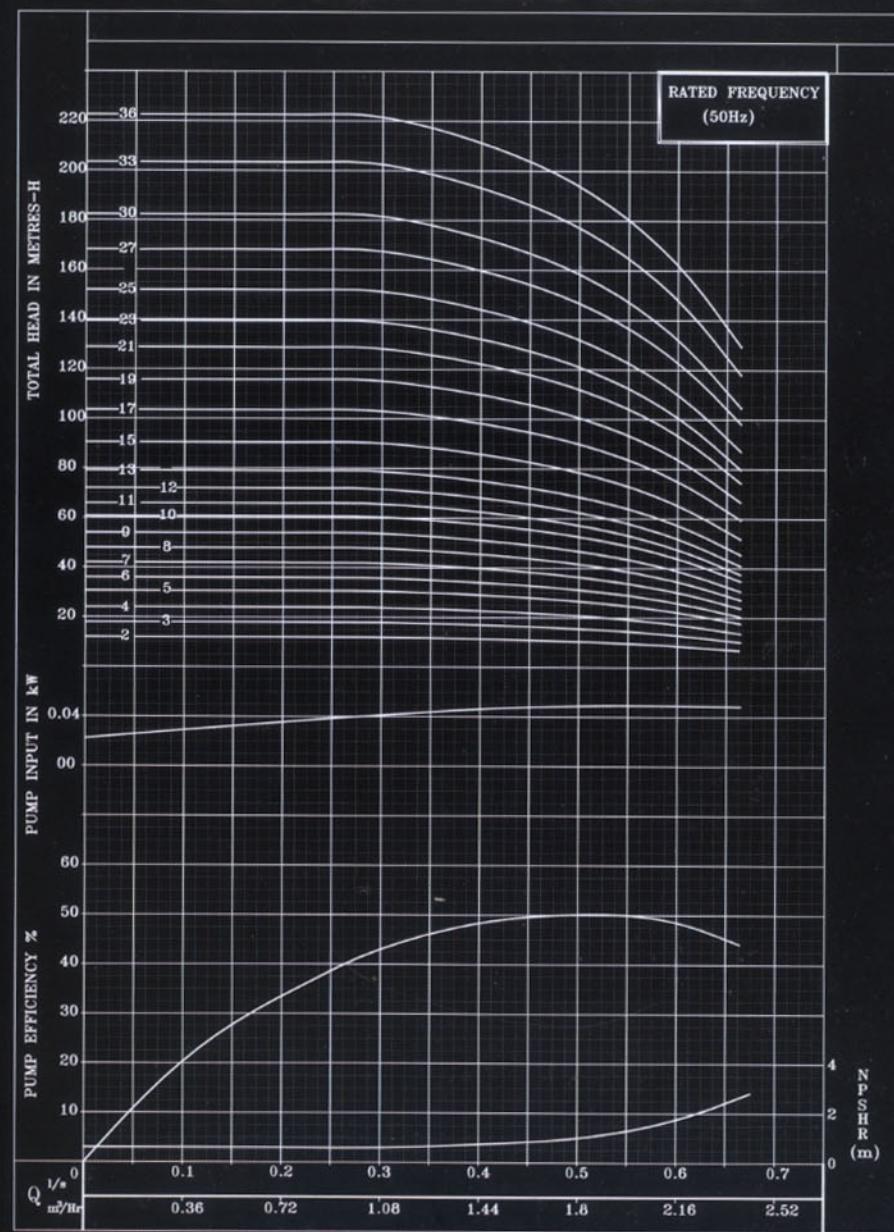
All pump performance data at rated voltage of 415 volts, 3-phase, 50 Hz with 2-pole motor

PUMP MODEL	Stages	MODEL RATING		PIPE SIZE (mm)	DISCHARGE IN M/Hr									
		(kW)	HP		0.4	0.6	0.8	1	1.2	1.4	1.6	1.8	2	
					7	10	13	17	20	23	27	30	33	
TOTAL HEAD IN METERS														
KSIL1-2	2	0.37	0.5	32	32	12	12	12	12	11	11	10	10	
KSIL1-3	3	0.37	0.5	32	32	18	18	18	18	17	17	16	15	
KSIL1-4	4	0.37	0.5	32	32	24	24	24	23	22	22	21	19	
KSIL1-5	5	0.37	0.5	32	32	30	30	30	29	28	27	26	24	
KSIL1-6	6	0.37	0.5	32	32	36	36	35	34	32	30	28	25	
KSIL1-7	7	0.37	0.5	32	32	42	42	41	41	39	37	35	32	
KSIL1-8	8	0.55	0.75	32	32	48	48	47	46	45	43	40	37	
KSIL1-9	9	0.55	0.75	32	32	54	54	53	52	50	48	45	41	
KSIL1-10	10	0.55	0.75	32	32	60	59	58	57	55	53	50	46	
KSIL1-11	11	0.55	0.75	32	32	65	65	64	62	61	58	54	50	
KSIL1-12	12	0.75	1.0	32	32	73	72	71	69	67	64	61	55	
KSIL1-13	13	0.75	1.0	32	32	78	78	77	75	73	69	65	60	
KSIL1-15	15	0.75	1.0	32	32	90	90	88	86	83	79	74	68	
KSIL1-17	17	1.1	1.5	32	32	103	102	101	99	95	91	85	79	
KSIL1-19	19	1.1	1.5	32	32	115	114	112	109	106	101	94	87	
KSIL1-21	21	1.1	1.5	32	32	126	125	123	120	116	110	103	95	
KSIL1-23	23	1.1	1.5	32	32	137	136	134	131	126	120	112	103	
KSIL1-25	25	1.5	2.0	32	32	153	152	150	147	142	136	128	118	
KSIL1-27	27	1.5	2.0	32	32	165	164	162	158	153	146	137	127	
KSIL1-30	30	1.5	2.0	32	32	182	181	178	175	169	162	152	140	
KSIL1-33	33	2.2	3.0	32	32	203	202	199	195	189	181	170	157	
KSIL1-36	36	2.2	3.0	32	32	221	220	217	212	206	197	185	171	
													154	

## Outline Drawing of KSIL1



## KSIL 1 SERIES PERFORMANCE CURVE



Note:-POWER CURVE INDICATE PUMP INPUT PER STAGE AND PUMP EFFICIENCY CURVE IS AVERAGE CURVE OF ALL THE PUMP

This curve relates to the liquid of S.G. - 1 and viscosity as water

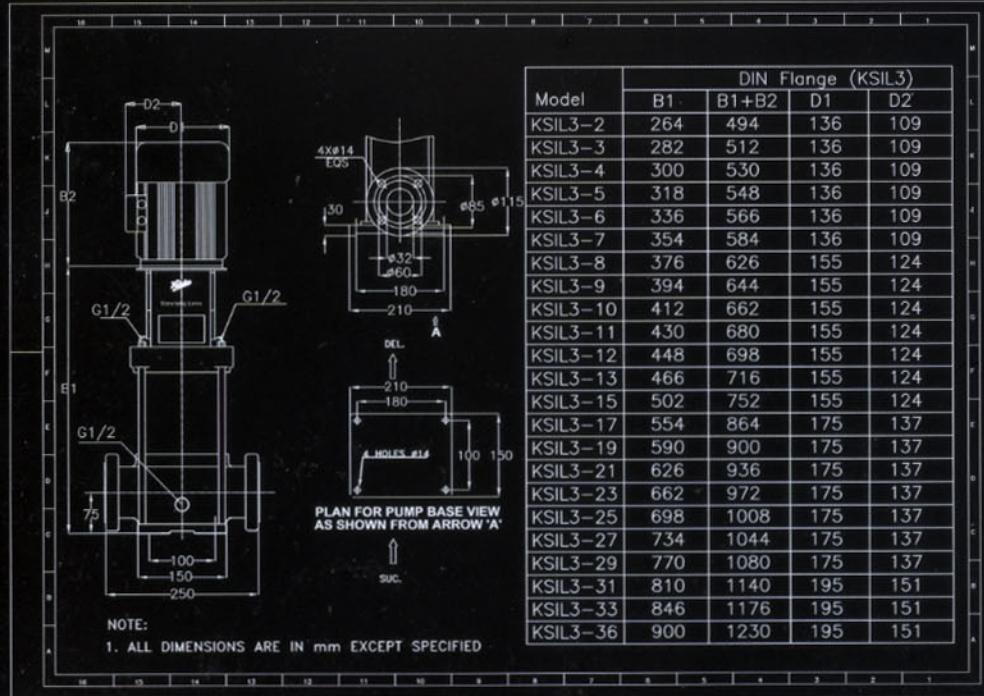
# KSIL3 SERIES

## Performance Tables

All pump performance data at rated voltage of 415 volts, 3-phase, 50 Hz with 2-pole motor

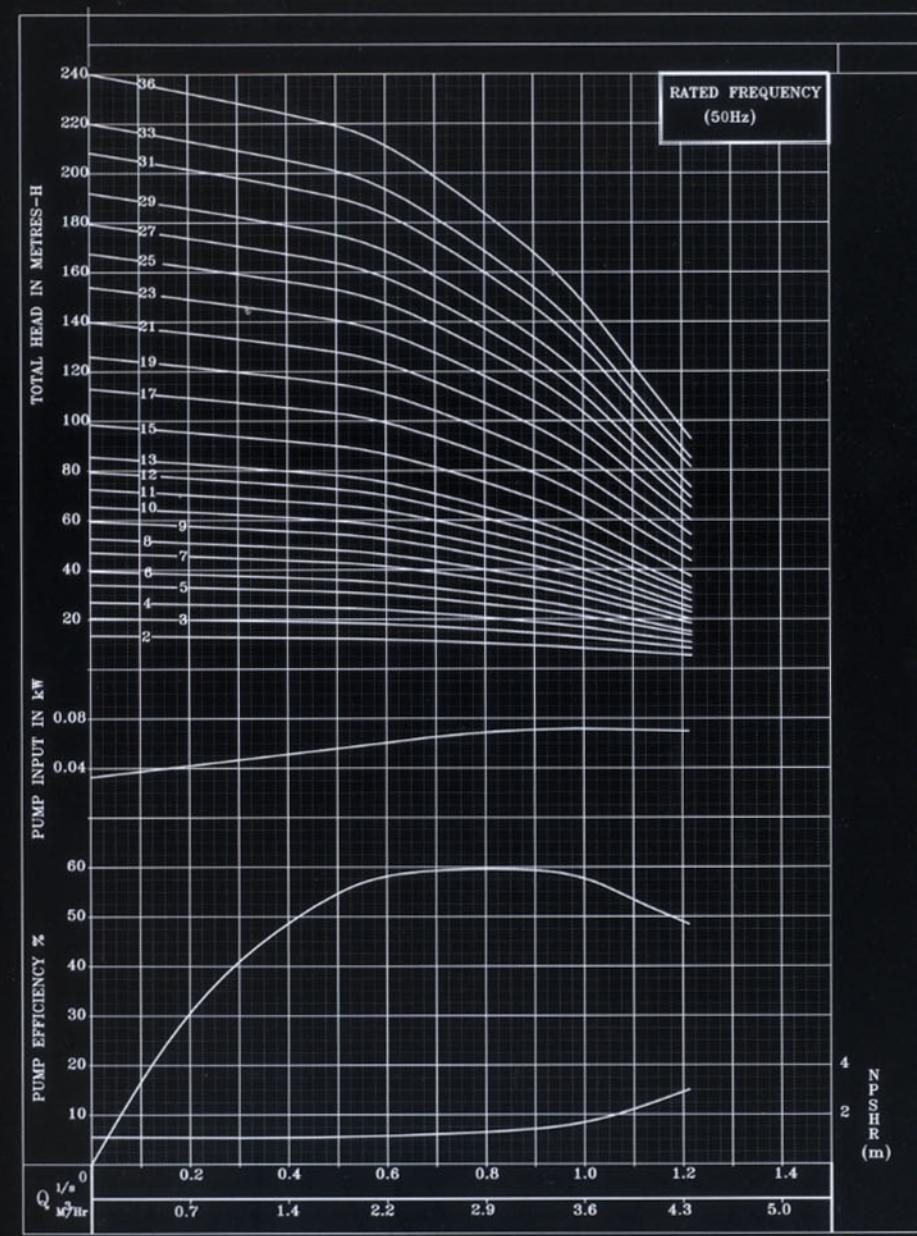
PUMP MODEL	MODEL RATING		PIPE SIZE (mm)		DISCHARGE IN M <sup>3</sup> /Hr									
	Stages	(kW)	HP	SUC.	DEL.	1.2	1.6	2	2.4	2.8	3.2	3.6	4	
						20	27	33	40	47	53	60	67	
TOTAL HEAD IN METERS														
KSIL3-2	2	0.37	0.5	32	32	13	12	12	11	11	10	8	8	
KSIL3-3	3	0.37	0.5	32	32	19	19	18	17	16	15	14	12	
KSIL3-4	4	0.37	0.5	32	32	25	24	23	22	20	17	17	14	
KSIL3-5	5	0.37	0.5	32	32	31	31	29	27	25	22	20	17	
KSIL3-6	6	0.55	0.75	32	32	37	36	35	33	30	28	24	21	
KSIL3-7	7	0.55	0.75	32	32	43	40	40	37	35	31	28	24	
KSIL3-8	8	0.75	1.0	32	32	51	48	47	44	41	37	33	28	
KSIL3-9	9	0.75	1.0	32	32	56	54	51	48	45	40	36	30	
KSIL3-10	10	0.75	1.0	32	32	62	60	57	54	50	45	40	33	
KSIL3-11	11	1.1	1.5	32	32	69	66	63	60	56	50	44	38	
KSIL3-12	12	1.1	1.5	32	32	75	72	69	65	61	55	48	41	
KSIL3-13	13	1.1	1.5	32	32	80	78	74	70	65	58	51	44	
KSIL3-15	15	1.1	1.5	32	32	92	89	85	80	73	66	58	49	
KSIL3-17	17	1.5	2.0	32	32	107	104	100	94	87	79	70	59	
KSIL3-19	19	1.5	2.0	32	32	119	116	111	104	97	88	77	65	
KSIL3-21	21	2.2	3.0	32	32	133	129	124	117	109	99	88	75	
KSIL3-23	23	2.2	3.0	32	32	146	141	135	128	119	108	95	81	
KSIL3-25	25	2.2	3.0	32	32	158	153	146	138	128	117	102	87	
KSIL3-27	27	2.2	3.0	32	32	170	164	157	148	138	125	110	93	
KSIL3-29	29	2.2	3.0	32	32	182	176	168	159	147	133	118	100	
KSIL3-31	31	3	4.0	32	32	197	191	183	173	161	146	138	110	
KSIL3-33	33	3	4.0	32	32	210	203	194	194	170	155	137	116	
KSIL3-36	36	3	4.0	32	32	228	221	211	200	185	168	149	126	

## Outline Drawing of KSIL3



# KSIL 3 SERIES

## PERFORMANCE CURVE



Note:-POWER CURVE INDICATE PUMP INPUT PER STAGE AND PUMP EFFICIENCY CURVE IS AVERAGE CURVE OF ALL THE PUMP

This curve relates to the liquid of S.G. - 1 and viscosity as water

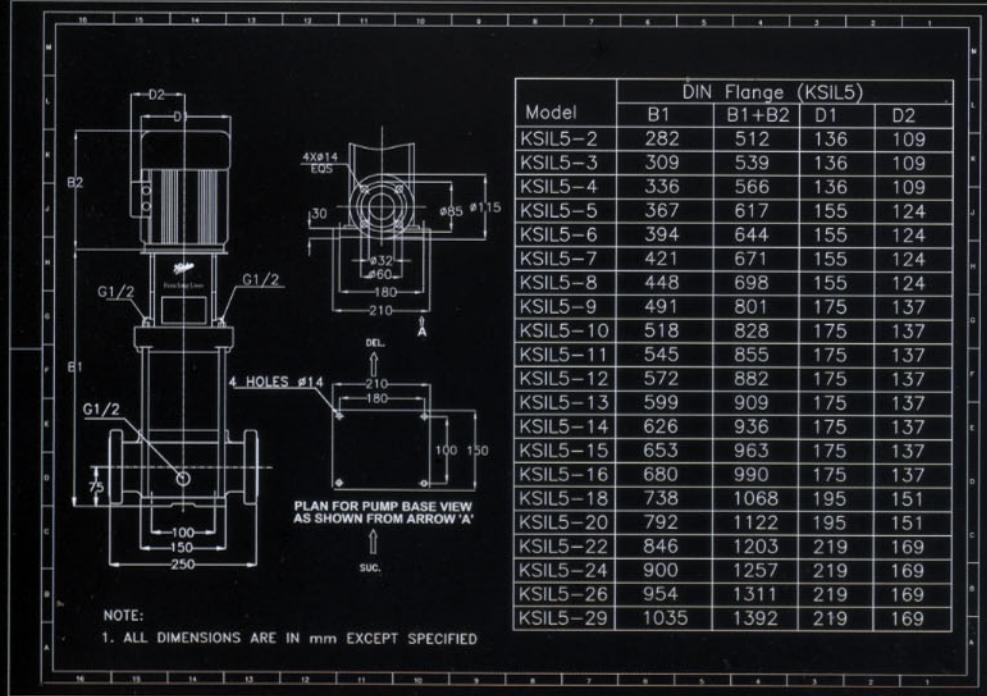
# KSIL5 SERIES

## Performance Tables

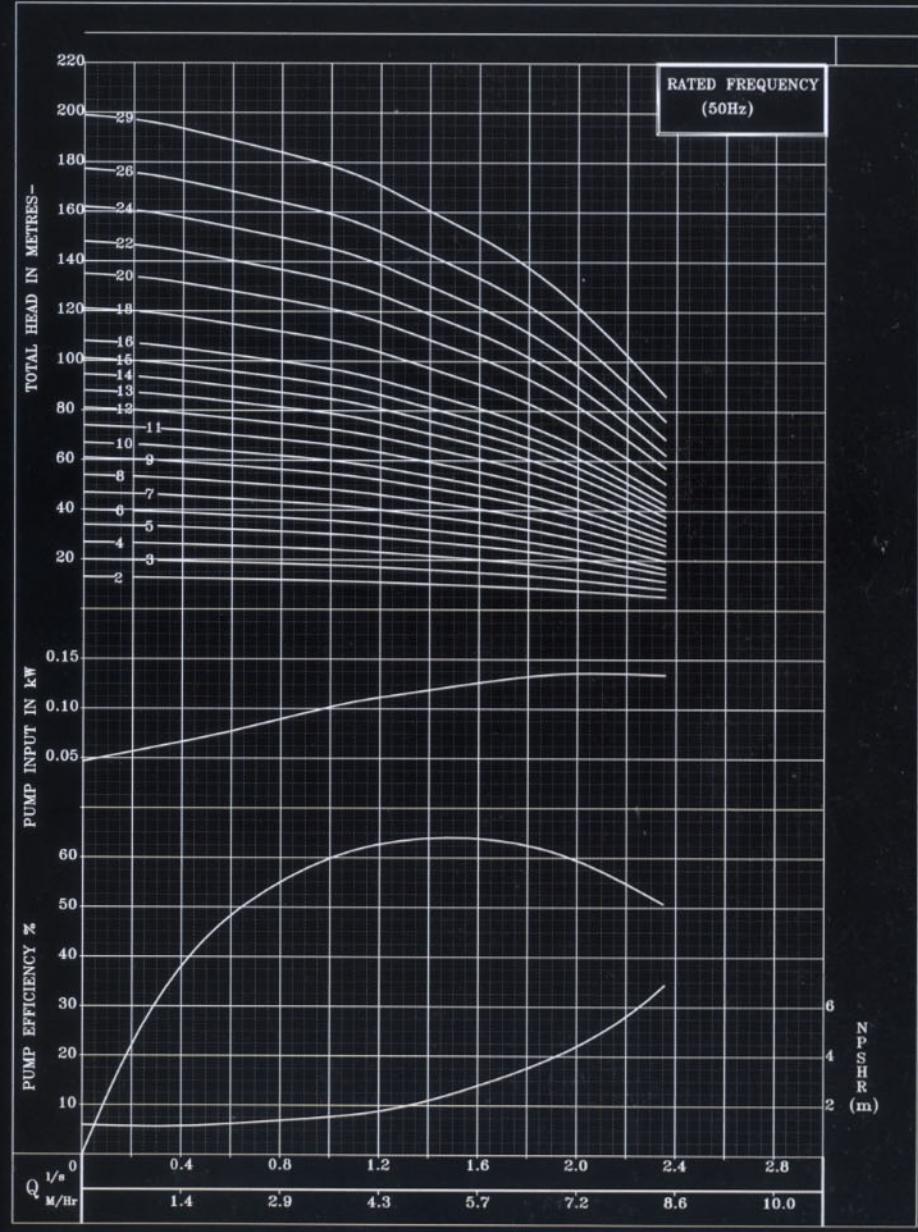
All pump performance data at rated voltage of 415 volts, 3-phase, 50 Hz with 2-pole motor

PUMP MODEL	MODEL RATING		PIPE SIZE (mm)		DISCHARGE IN M <sup>3</sup> /HR								
	Stages	(kW)	HP	SUC.	DEL.	1	2	3	4	5	6	7	
						17	33	50	67	83	100	117	
TOTAL HEAD IN METERS													
KSIL5-2	2	0.37	0.5	32	32	13	12	12	10	9	7	6	
KSIL5-3	3	0.55	0.75	32	32	19	19	18	16	14	12	10	
KSIL5-4	4	0.55	0.75	32	32	26	25	24	22	19	16	14	
KSIL5-5	5	0.75	1	32	32	33	32	30	28	22	22	18	
KSIL5-6	6	1.1	1.5	32	32	40	38	37	34	31	27	23	
KSIL5-7	7	1.1	1.5	32	32	46	45	42	40	36	32	27	
KSIL5-8	8	1.1	1.5	32	32	53	51	48	45	41	36	31	
KSIL5-9	9	1.5	2	32	32	60	59	56	53	48	44	37	
KSIL5-10	10	1.5	2	32	32	67	65	62	59	54	48	41	
KSIL5-11	11	2.2	3	32	32	74	73	70	66	61	54	47	
KSIL5-12	12	2.2	3	32	32	81	79	76	72	66	59	51	
KSIL5-13	13	2.2	3	32	32	88	85	82	78	71	64	55	
KSIL5-14	14	2.2	3	32	32	95	92	89	83	77	69	60	
KSIL5-15	15	2.2	3	32	32	101	99	95	89	82	74	63	
KSIL5-16	16	2.2	3	32	32	108	105	101	95	87	78	68	
KSIL5-18	18	3	4	32	32	122	119	115	109	100	90	78	
KSIL5-20	20	3	4	32	32	135	132	127	120	111	100	87	
KSIL5-22	22	4	5.5	32	32	150	147	142	134	124	112	97	
KSIL5-24	24	4	5.5	32	32	163	160	154	146	135	122	106	
KSIL5-26	26	4	5.5	32	32	176	173	166	157	146	132	115	
KSIL5-29	29	4	5.5	32	32	198	194	188	178	165	149	131	

## Outline Drawing of KSIL5



## KSIL 5 SERIES PERFORMANCE CURVE



Note:-POWER CURVE INDICATE PUMP INPUT PER STAGE AND PUMP EFFICIENCY CURVE IS AVERAGE CURVE OF ALL THE PUMP

This curve relates to the liquid of S.G. - 1 and viscosity as water

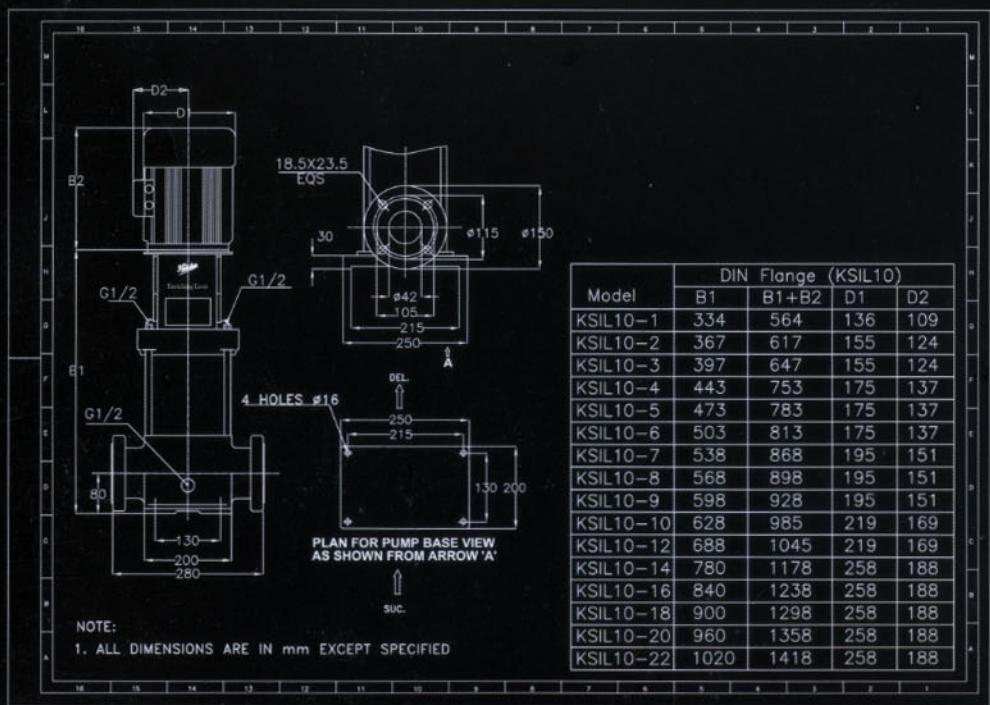
## KSIL10 SERIES

### Performance Tables

All pump performance data at rated voltage of 415 volts, 3-phase, 50 Hz with 2-pole motor

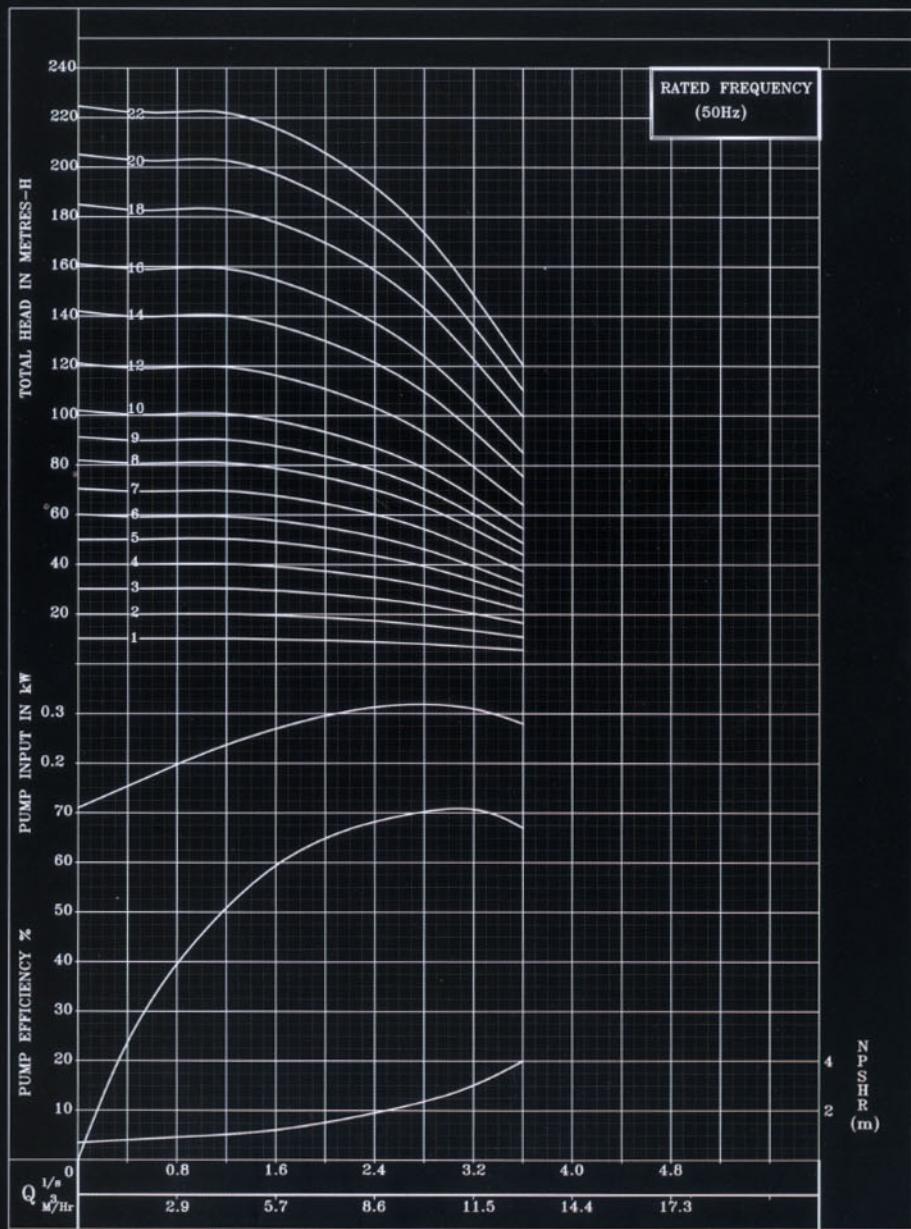
PUMP MODEL	Stages	MODEL RATING		PIPE SIZE (mm)		DISCHARGE IN M <sup>3</sup> /Hr								
		(kW)	HP	SUC.	DEL.	2	4	6	8	10	12			
		DISCHARGE IN LPM							33	67	100	133	167	200
TOTAL HEAD IN METERS														
KSIL10-1	1	0.37	0.5	42	42	10	10	9	8	7	5			
KSIL10-2	2	0.75	1	42	42	20	20	19	18	15	12			
KSIL10-3	3	1.1	1.5	42	42	30	30	29	26	23	18			
KSIL10-4	4	1.5	2	42	42	40	40	40	36	32	26			
KSIL10-5	5	2.2	3	42	42	51	51	50	46	40	33			
KSIL10-6	6	2.2	3	42	42	61	61	59	55	48	39			
KSIL10-7	7	3.0	4	42	42	72	72	70	65	57	46			
KSIL10-8	8	3.0	4	42	42	82	82	80	74	65	53			
KSIL10-9	9	3.0	4	42	42	92	92	89	82	72	59			
KSIL10-10	10	4.0	5.5	42	42	102	102	100	93	81	66			
KSIL10-12	12	4.0	5.5	42	42	122	122	119	110	97	79			
KSIL10-14	14	5.5	7.5	42	42	143	144	140	130	114	94			
KSIL10-16	16	5.5	7.5	42	42	163	163	159	148	129	106			
KSIL10-18	18	7.5	10	42	42	185	186	182	169	149	123			
KSIL10-20	20	7.5	10	42	42	206	204	201	188	165	136			
KSIL10-22	22	7.5	10	42	42	226	226	221	206	181	147			

### Outline Drawing of KSIL10



## KSIL 10 SERIES

### PERFORMANCE CURVE



This curve relates to the liquid of S.G. - 1 and viscosity as water

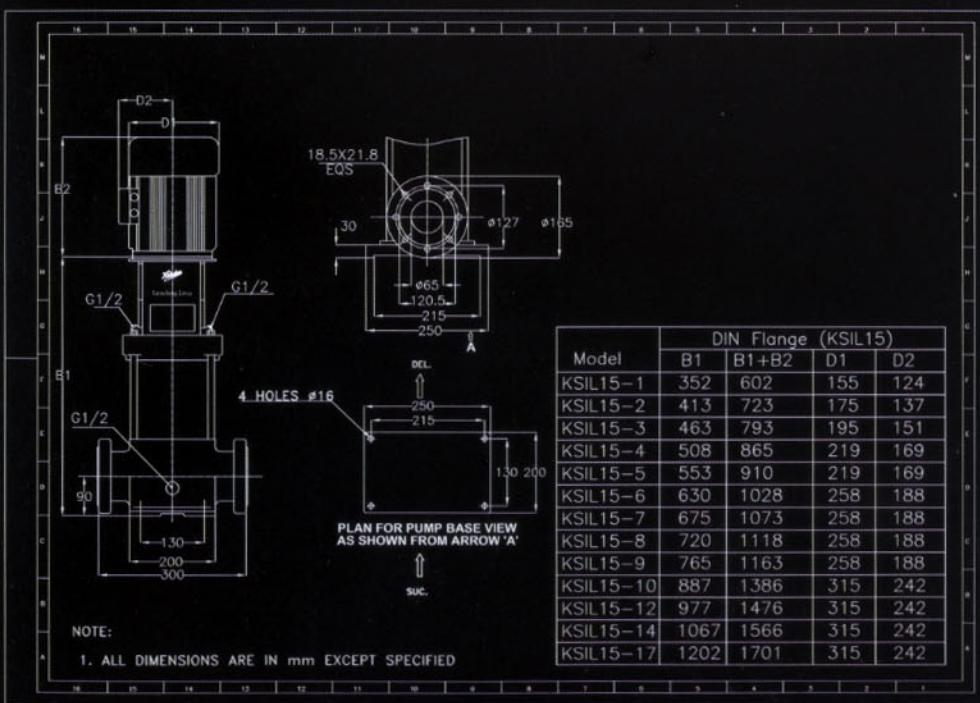
## KSIL15 SERIES

### Performance Tables

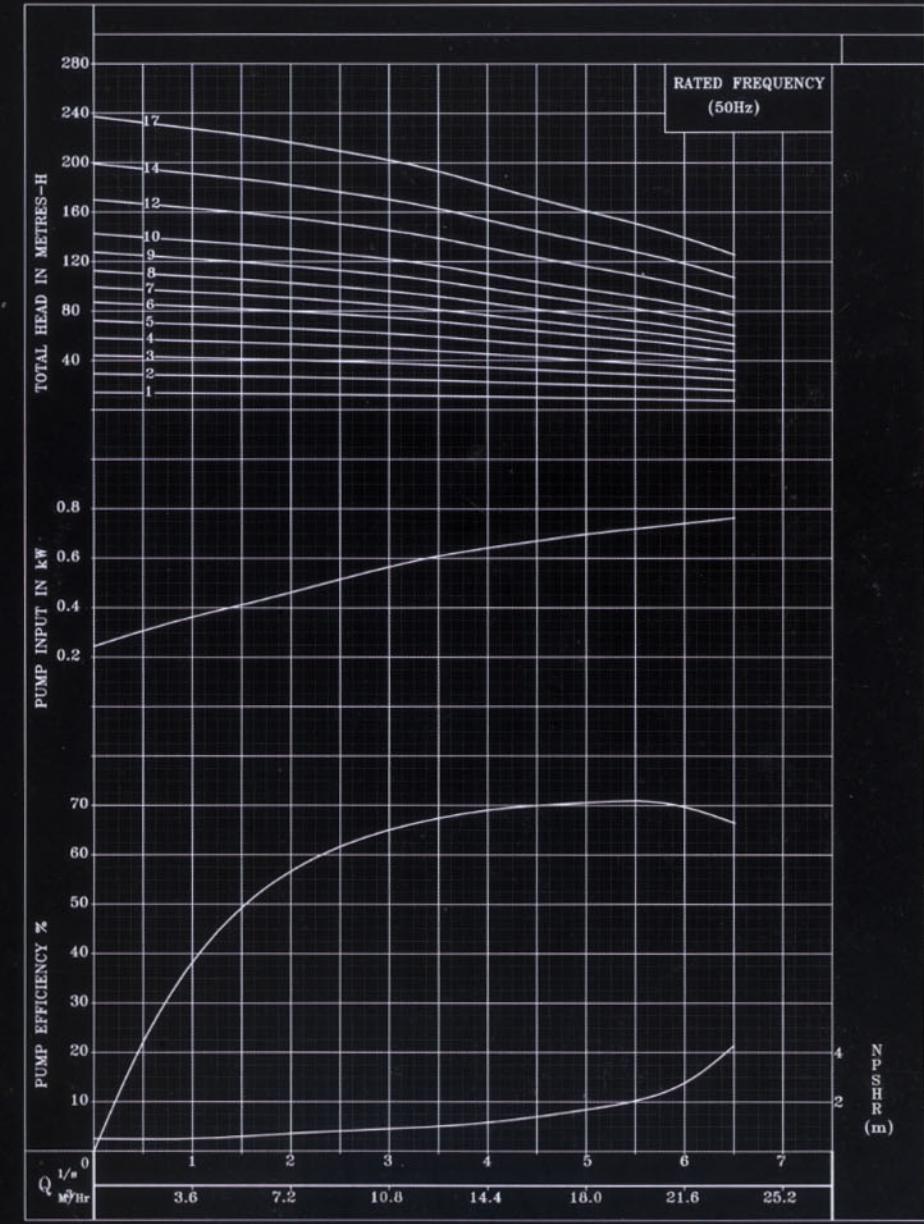
All pump performance data at rated voltage of 415 volts, 3-phase, 50 Hz with 2-pole motor

PUMP MODEL	Stages	(kW)	HP	SUC.	PIPE SIZE (mm)	DISCHARGE IN M <sup>3</sup> /Hr							RATED FREQUENCY (50Hz)	
						3	6	9	12	15	18	21		
						50	100	150	200	250	300	350		
TOTAL HEAD IN METERS														
KSIL15-1	1	1.1	1.5	65	65	15	13	13	12	11	10	9		
KSIL15-2	2	2.2	3	65	65	28	27	26	25	23	21	18		
KSIL15-3	3	3	4	65	65	42	41	40	38	36	32	28		
KSIL15-4	4	4	5.5	65	65	58	55	55	51	48	43	38		
KSIL15-5	5	4	5.5	65	65	70	68	66	64	60	53	48		
KSIL15-6	6	5.5	7.5	65	65	83	82	80	77	72	64	58		
KSIL15-7	7	5.5	7.5	65	65	98	96	94	89	84	75	65		
KSIL15-8	8	7.5	10	65	65	112	110	108	103	97	86	75		
KSIL15-9	9	7.5	10	65	65	125	123	120	115	108	97	84		
KSIL15-10	10	11	15	65	65	140	138	136	129	120	109	95		
KSIL15-12	12	11	15	65	65	168	165	162	155	145	130	114		
KSIL15-14	14	11	15	65	65	194	192	188	180	168	151	130		
KSIL15-17	17	15	20	65	65	237	234	230	219	208	185	160		

### Outline Drawing of KSIL15



## KSIL 15 SERIES PERFORMANCE CURVE



This curve relates to the liquid of S.G. - 1 and viscosity as water

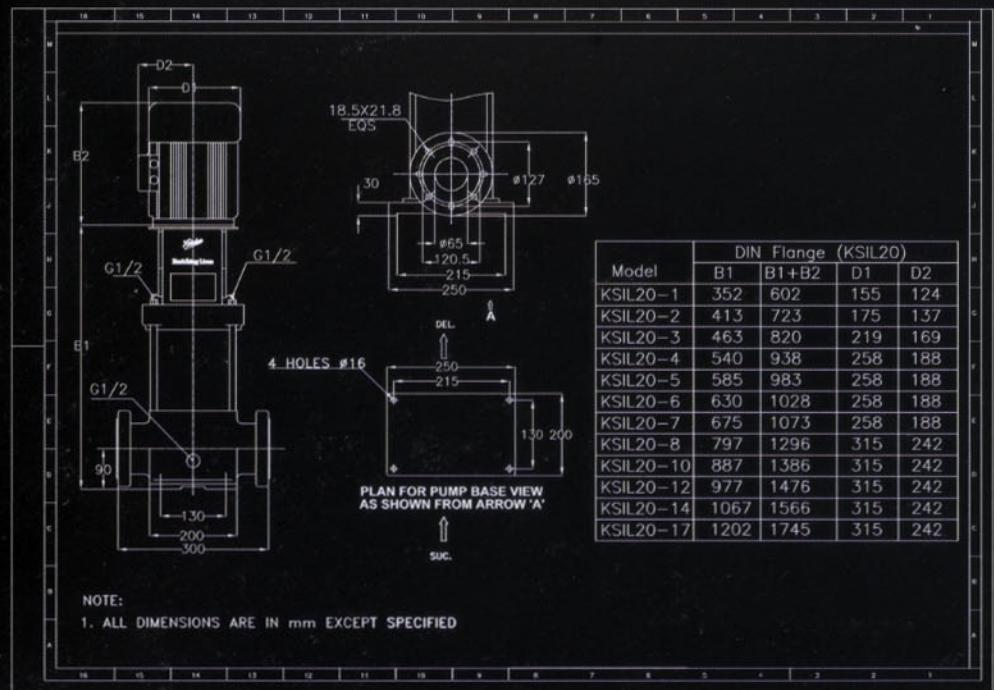
# KSIL20 SERIES

## Performance Tables

All pump performance data at rated voltage of 415 volts, 3-phase, 50 Hz with 2-pole motor

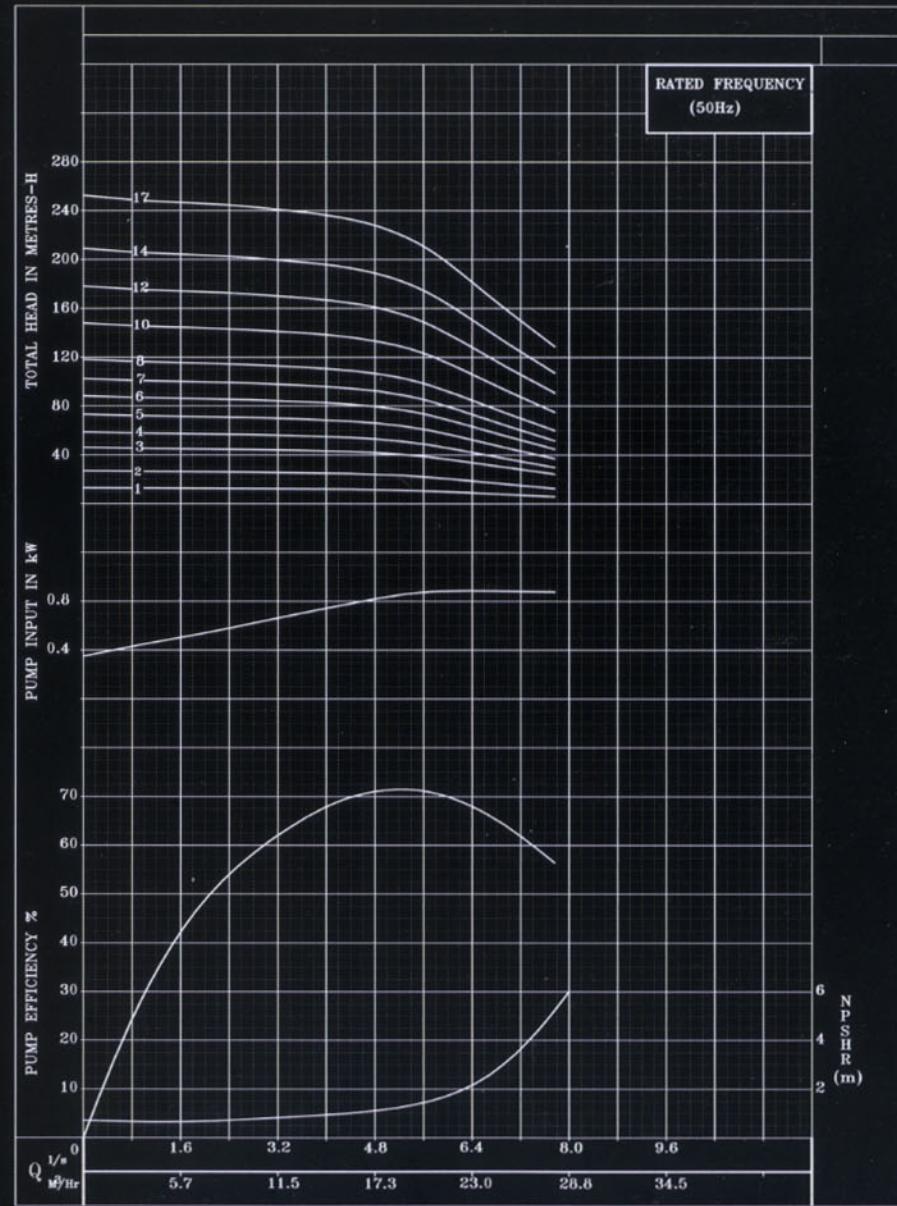
PUMP MODEL	Stages	MODEL RATING		PIPE SIZE (mm)		DISCHARGE IN M <sup>3</sup> /Hr								
		(kW)	HP	SUC.	DEL.	4	8	12	16	20	24	28		
						67	133	200	267	333	400	467		
TOTAL HEAD IN METERS														
KSIL20-1	1	1.1	1.5	65	65	13	13	13	12	11	9	6.5		
KSIL20-2	2	2.2	3	65	65	28	28	27	25	23	19	15		
KSIL20-3	3	4.0	5	65	65	43	43	42	39	36	30	23		
KSIL20-4	4	5.5	7.5	65	65	58	57	56	53	48	41	32		
KSIL20-5	5	5.5	7.5	65	65	73	72	70	66	59	52	40		
KSIL20-6	6	7.5	10	65	65	87	83	84	80	73	62	49		
KSIL20-7	7	7.5	10	65	65	102	100	97	93	84	72	57		
KSIL20-8	8	11.0	15	65	65	117	116	113	107	98	85	67		
KSIL20-10	10	15.0	20	65	65	146	144	140	132	121	105	83		
KSIL20-12	11	15.0	20	65	65	175	174	169	161	147	127	101		
KSIL20-14	14	15.0	20	65	65	204	202	197	187	171	147	117		
KSIL20-17	17	18.5	25	65	65	249	247	241	229	210	181	144		

## Outline Drawing of KSIL20



# KSIL 20 SERIES

## PERFORMANCE CURVE



Note:-POWER CURVE INDICATE PUMP INPUT PER STAGE AND PUMP EFFICIENCY CURVE IS AVERAGE CURVE OF ALL THE PUMP

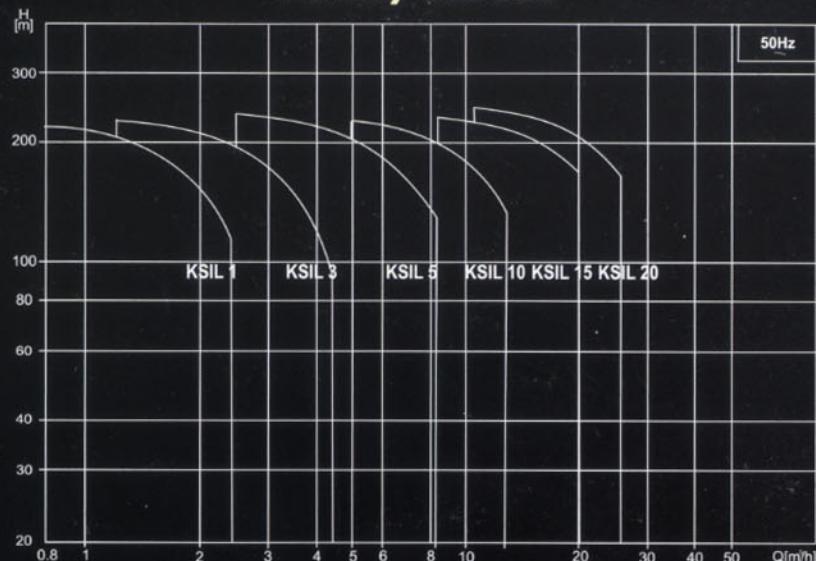
This curve relates to the liquid of S.G. - 1 and viscosity as water

## Materials of Construction

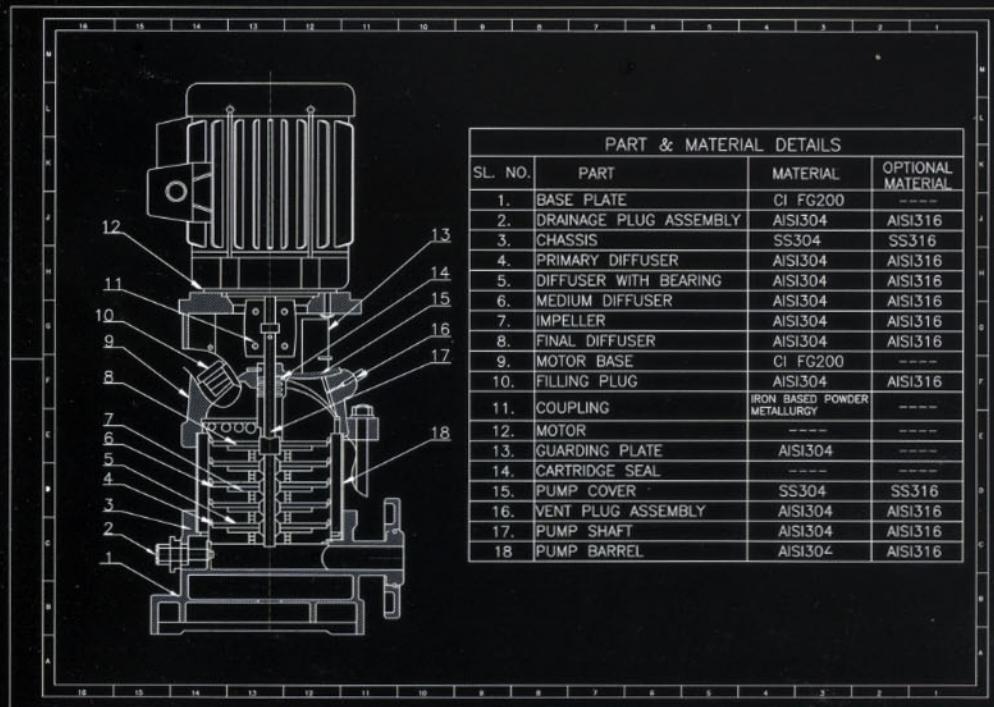
Sr. No.	Parts	KSIL Series	
		Material	Optional Material*
1	BASE PLATE	CI FG200	-----
2	DRAINAGE PLUG ASSEMBLY	AISI304	AISI316
3	PRIMARY DIFFUSER	AISI304	AISI316
4	DIFFUSER WITH BEARING	AISI304	AISI316
5	MEDIUM DIFFUSER	AISI304	AISI316
6	IMPELLER	AISI304	AISI316
7	FINAL DIFFUSER	AISI304	AISI316
8	MOTOR BASE	CI FG200	-----
9	VENT PLUG ASSEMBLY	AISI304	AISI316
10	PUMP SHAFT	AISI304	AISI316
11	PUMP CASING (SUC. AND DEL.)	AISI304	AISI316

\* The availability of Inline pumps in MOC SS316  
is against special requirement with higher delivery periods

## Family curves



Cross-Sectional Drawing of KSIL 1,3,5 Series



Cross-Sectional Drawing of KSIL 10, 15, 20 Series

