MEGATOR

Pumping & Pollution Control Solutions

Standard Ratings

PUMP SETS SUITABLE FOR CLEAN LIQUIDS

Pump type	Capacity		Maximum total head				Motor rating		Maximum total suction lift				Pump speed
							0 - 75cSt	1000cSt	0 - 75cSt		1000cSt		
	m^3/hr	U.S. gpm	m H_2O	Bar	ft H_2O	lb/in^2	hp	hp	m H_2O	ft H_2O	m H_2O	ft H_2O	r.p.m.
L75	1.5	7	30	3	100	45	0.75	1	7	23	6.1	20	1760
L100	3	13	30	3	100	45	1.5	2	7	23	6.1	20	1760
L125	5	22	30	3	100	45	1.5	3	7	23	6.1	20	1440
L150	10	44	30	3	100	45	3	5.5	6.7	22	6.1	20	1370
L200	15	66	30	3	100	45	5.5	7.5	6.7	22	5.4	18	1250
L300	30	132	30	3	100	45	7.5	15	6	20	5.4	18	850
L400	60	264	30	3	100	45	15	30	6	20	5.4	18	850

H75	1.5	7	45	4.5	150	65	0.75	1.5	7	23	6.1	20	1550
			75	7.5	250	110	1						
H100	3	13	53	5.3	175	75	1.5	3	7	23	6.1	20	1500
			75	7.5	250	110	2						
H125	5	22	45	4.5	150	65	2	5.5	7	23	6.1	20	1350
			75	7.5	250	110	3						
H150	10	44	60	6	200	90	5.5	7.5	7	23	6.1	20	1250
			75	7.5	250	110	7.5						
H200	15	66	45	4.5	150	65	5.5	10	6.7	22	6.1	20	1030
			75	7.5	250	110	7.5						
H300	22.5	99	53	5.3	175	75	7.5	20	6	20	6.1	20	960
			75	7.5	250	110	10						
H400	45	198	53	5.3	175	75	15	40	6	20	6.1	20	960
			75	7.5	250	110	20						

PUMP SETS SUITABLE FOR DIRTY LIQUIDS

Pump type	Capacity		Maximum total head				Motor rating		Maximum total suction lift				Pump speed
							0 - 75cSt	2500cSt	0 - 75cSt		2500cSt		
	m^3/hr	U.S. gpm	m H_2O	Bar	ft H_2O	lb/in^2	hp	hp	m H_2O	ft H_2O	m H_2O	ft H_2O	r.p.m.
L100	2	9	30	3	100	45	1	2	8.2	27	5.2	17	1200
L125	3	13	30	3	100	45	1	3	8.2	27	5.2	17	900
L150	6	26	30	3	100	45	2	5.5	8.2	27	5.2	17	850
L200	10	44	30	3	100	45	3	7.5	7.5	25	5.2	17	850
L300	20	88	30	3	100	45	5.5	15	7.5	25	4.5	15	570
L400	40	176	30	3	100	45	10	30	7.5	25	4.5	15	570

H100	2	9	53	5.3	175	75	1	3	8.2	27	5.2	17	1000
			75	7.5	250	110	1.5						
H125	3	13	45	4.5	150	65	1.5	5.5	8.2	27	5.2	17	850
			75	7.5	250	110	2						
H150	6	26	55	5.5	180	78	3	7.5	8.2	27	5.2	17	800
			75	7.5	250	110	4						
H200	10	44	55	5.5	180	78	4	10	7.5	25	5.2	17	720
			75	7.5	250	110	5.5						
H300	15	66	60	6	200	87	7.5	20	7.5	25	5.2	17	650
			75	7.5	250	110	7.5						
H400	30	132	60	6	200	87	15	40	7.5	25	5.2	17	650
			75	7.5	250	110	15						

DIRECT COUPLED PUMPS (50Hz)

Pump type	Capacity		Maximum total head				Motor rating		Maximum total suction lift				Pump speed
							0 - 75cSt	1000cSt	0 - 75cSt		1000cSt		
	m^3/hr	US gpm	m H_20	Bar	ft H_20	lb/in^2	hp	hp	m H_2O	ft H_2O	m H_2O	ft H_2O	r.p.m.
L75	1.25	5.4	30	3	100	45	0.75	1	7.0	23	6.1	20	1440
L100	2.5	11	30	3	100	45	1	2	7.0	23	6.1	20	1440
L125	5	22	30	3	100	45	1.5	3	7.0	23	6.1	20	1440
L150	6.5	30	30	3	100	45	2	5.5	7.0	23	6.1	20	960
L200	11	52	30	3	100	45	4	7.5	7.0	23	6.1	20	960
L300	25	110	30	3	100	45	10	15	6.1	20	5.5	18	720
L400	50	222	30	3	100	45	15	27	6.1	20	5.5	18	720
H75	1.3	6	45	4.5	150	65	0.75	1.5	7.0	23	6.1	20	1440
			75	7.5	250	110	1						
H100	2.6	12	55	5.5	180	75	1.5	3	7.0	23	6.1	20	1440
			75	7.5	250	110	2						
H125	3.6	16	55	5.5	180	75	2	5.5	7.0	23	6.1	20	960
			75	7.5	250	110	3						
H150	7.5	34	40	4	130	55	3	7.5	7.0	23	6.1	20	960
			75	7.5	250	110	5.5						
H200	13.5	60	50	5	160	70	5.5	10	6.7	22	6.1	20	960
			75	7.5	250	110	7.5						
H300	22.5	100	53	5.3	175	75	10	20	6.7	22	5.5	18	960
			75	7.5	250	110	15						
H400	45	200	53	5.3	175	75	15	40	6.7	22	5.5	18	960
			75	7.5	250	110	20						

DIRECT COUPLED PUMPS(60Hz)

Pump type	Capacity		Maximum total head				Motor rating		Maximum total suction lift				Pump speed
							0 - 75cSt	1000cSt	0 - 75cSt		1000cSt		
	m^3/hr	US gpm	m H_20	Bar	ft H_20	lb/in^2	hp	hp	m H_2O	ft H_2O	m H_2O	ft H_2O	r.p.m.
L75	1.5	7	30	3	100	45	0.75	1	7.0	23	6.1	20	1760
L100	3	13	30	3	100	45	1.5	2	7.0	23	6.1	20	1760
L125	4	18	30	3	100	45	2	3	7.0	23	6.1	20	1150
L150	8.5	36	30	3	100	45	3	5.5	7.0	23	6.1	20	1150
L200	13.5	60	30	3	100	45	5.5	7.5	7.0	23	6.1	20	1150
L300	31	132	30	3	100	45	10	15	6.0	20	5.5	18	865
L400	62	264	30	3	100	45	15	30	6.0	20	5.5	18	865
H75	1.7	8	60	6	200	90	0.75	1.5	7.0	23	5.5	18	1760
			75	7.5	250	110	1						
H100	3.5	15	45	4.5	150	65	1.5	3	7.0	23	5.5	18	1760
			75	7.5	250	110	2						
H125	4.3	19	55	5.5	180	80	2	5.5	7.0	23	5.5	18	1150
			75	7.5	250	110	3						
H150	9.3	41	45	4.5	150	65	5.5	7.5	7.0	23	5.5	18	1150
			75	7.5	250	110	7.5						
H200	12.3	54	60	6	200	90	5.5	10	6.7	22	5.5	18	865
			75	7.5	250	110	7.5						
H300	20	90	55	5.5	180	80	10	20	6.7	22	5.5	18	865
			75	7.5	250	110	15						
H400	40	176	55	5.5	180	80	15	40	6.7	22	5.5	18	865
			75	7.5	250	110	20						

Characteristics

The capacity of each Megator positive displacement pump is directly proportional to each individual pump speed. Therefore any pump capacity can be interpolated from the standard ratings tables. The pump curve therefore is virtually a straight line. For pump speeds higher or lower than those shown in the standard ratings table please consult Megator.

The Megator Sliding Shoe Pump delivers its rated capacity at any head and at any suction lift within its range. The head developed is the head imposed by the system at the rated flow. A head capacity curve on the conventional basis would be a vertical straight line.

Intermediate Capacities

For intermediate capacities, the pumps can be run at speeds lower than those listed in the tables. The head is independent of the speed. The capacity and the horsepower at a given head are approximately proportional to the speed.

Motor Ratings

The standard motors listed provide for the maximum heads. In the case of type H pumps, an intermediate head is also listed. Where the heads are substantially below those listed, smaller motors can frequently be used.

Suction Lift

The suction lifts listed assume normal temperature. Installations combining suction lift with temperatures above normal should be referred to Megator.

Temperature

The ratings listed in the tables are valid for temperatures up to 100°F (38°C), subject to the above note on suction lift. Where higher temperatures are involved, it is advisable to consider them in conjunction with the other working conditions and such cases should be referred to Megator.

Dirty Liquids

Reduced pump speeds give a markedly increased resistance to wear, and the high suction ratings are recommended for dirty liquids. Under severe conditions still lower speeds may provide the most economical installation.

Conversion Tables

Quantity

Imp gal/min	U.S. gal/min	m^3/hr	liters/min
1	1.2	0.273	4.546
0.833	1	0.227	3.785
3.667	4.4	1	16.67
0.22	0.264	0.06	1

Volume

Imp. gallons	U.S. gallons	liters	m^3	ft^3
1	1.2	4.546	0.00455	0.161
0.833	1	3.785	0.00379	0.134
0.22	0.264	1	0.001	0.0353
220	264.2	1000	1	35.32
6.229	7.475	28.32	0.028	1

Pressure or Head

feet of water	lb/in^2	meters of water	kg/cm^2	inches of mercury	mm of mercury
1	0.434	0.305	0.031	0.881	22.42
2.307	1	0.703	0.07	2.036	51.71
3.281	1.422	1	0.1	2.896	73.55
32.81	14.22	10	1	28.96	735.5
1.133	0.491	0.345	0.035	1	25.4
0.045	0.019	0.014	0.001	0.039	1

Electric Motors

Electric motors should be arranged for direct-on-line starting and have a starting torque not less than 150% of full-load torque. Where local regulations prohibit direct-on-line starting, the use of slip-ring (wound rotor) motors or centrifugal clutches should be considered. In the case of belt-driven sets, flexible conduit must be used adjacent to the motor terminal box to allow the movement necessary for belt tensioning.

Switchgear

Every electrically driven pump must be fitted with a starter with suitable overload releases. The releases should be set to the full load current of the motor, unless the starter manufacturer instructs otherwise. Adjustable time lags should be set to the maximum. Starters should be direct-on-line type rated for use with motors having a starting torque equivalent to 150% full load torque, and incorporate single-phase prevention. Fuses should be the cartridge type and rated to the manufacturer's recommendation to carry the starting currents (3 to 5 times full load current in the case of single-phase motors and 6 to 8 times in the case of three phase motors started direct-on-line).

Piping

The piping should be as short and direct as possible. Use gradual bends and avoid sharp elbows and tees. The size of pipe should not be smaller than the pump branches and for long pipes should generally be larger. If the pipe run is very complicated, the actual pipe losses should be estimated to check the total head on the pump. The advice and assistance of *Megator* engineers should be sought if required. It is quite common for the pipe losses to be greater than the static head. The piping must be accurately cut and fitted, so that it can be connected to the pump branches without putting any strain on the pump or on the pipe joints. Particular care must be taken to make the joints in the suction line absolutely tight, in order to avoid loss of capacity or difficulty in priming due to air leaks.

Pumps in Parallel

All *Megator* pumps will operate perfectly in parallel with one another, or with other pumps, but certain points should be observed with regard to the piping. A common suction pipe for two or more pumps may cause one pump to interfere with the effective priming of another. Each pump should preferably have an individual suction line. If this is impractical, each pump suction should be fitted with a non-return valve.

When two or more pumps discharge into the same delivery system, the junction should be made with a twin elbow or pitcher tee, so that the streams of liquid easily merge. If an ordinary tee is used, it may give rise to damaging pulsations.

Relief Valve

If the pump is run with the discharge throttled or shut off, it will develop very high pressures and serious damage will probably occur. It is therefore best, where practical, to avoid having any stop valves in the discharge line (non-return valves will often serve the same purpose). If a stop valve has to be employed, or if it is possible for an excessive head to be imposed on the pump by any other cause, a relief valve must be fitted. It is essential that the relief valve should be capable of passing the full output of the pump without exceeding a safe pressure and it is preferable to use the *Megator* relief valve designed for the particular pump.