

SLIDING-SHOE PUMP

**BUILT TO LAST.
NOT TO REPLACE.**



MEGATOR  **R**

PUMP COMPARISON

Due to the fact that the Megator Sliding Shoe Pump is a unique design, we are frequently asked by our prospective clients why they should install the Sliding Shoe Pump. Below is a comparison of the Sliding Shoe Pump in contrast to other pump designs.

PISTON & PLUNGER PUMPS

The absence of valves ensures greater reliability and easier maintenance.

Weight and space occupied are a fraction of that of a piston or plunger pump of equivalent rating.

The elimination of gearing and crank mechanism saves lubrication and maintenance.

Shock and vibration in pipelines are avoided by the smooth laminar flow of the Sliding Shoe Pump.

GEAR, VANE, SCREW & PROGRESSIVE CAVITY PUMPS

Effective pumping and self-priming in the Sliding Shoe Pump is not dependent on fine fits or clearances.

Positive seating and self-compensation for wear enable the Sliding Shoe Pump to keep going under conditions too severe for ordinary rotary positive pumps.

Sliding Shoe Pumps are not confined to liquids having recognized lubricating or sealing properties, as they work with equal efficiency and length of life on water and similar “non-lubricating” liquids.

Sliding Shoe Pumps will run for long periods with a completely dry suction without overheating or damage.

CENTRIFUGAL PUMPS

Self-priming of the Sliding Shoe Pump is spontaneous, without the use of any added priming device, and is completely reliable, even when the pump is in an old and worn condition.

Small seepages can be dealt with continuously and any increased flow up to the full capacity of the pump is instantly picked up. The last drop can be removed from containers.

Very high suction lifts and long suction lines can be handled reliably without reduction in capacity. Entrapped air presents no difficulty.

Fluid pumped at a given speed, instead of falling away rapidly with increase in head, is practically constant at all heads and suction lifts within the range of the pump.

The Sliding Shoe Pump cannot overload the motor as a result of reduced head, and for this reason smaller motors can generally be used.

Sliding Shoe Pumps have high efficiency over a wide range of heads and not merely at or near a single “duty point”.

The Sliding Shoe Pump at a given speed will work efficiently and give the same capacity with liquids of very low or very high viscosity.



THE SLIDING SHOE PUMP

Megator H-300 Cast Iron Pump, used in Mining & Railway applications.



Oily Waste Transfer Pump used in Navy surface ship bilge systems.



Oily Waste Transfer Pump on separator duty.



Megator, helping to guard your investment with rugged, dependable equipment, designed for efficiency and easy maintenance.



THE MOST SENSIBLE DESIGN ON

The Megator Sliding-Shoe Pump

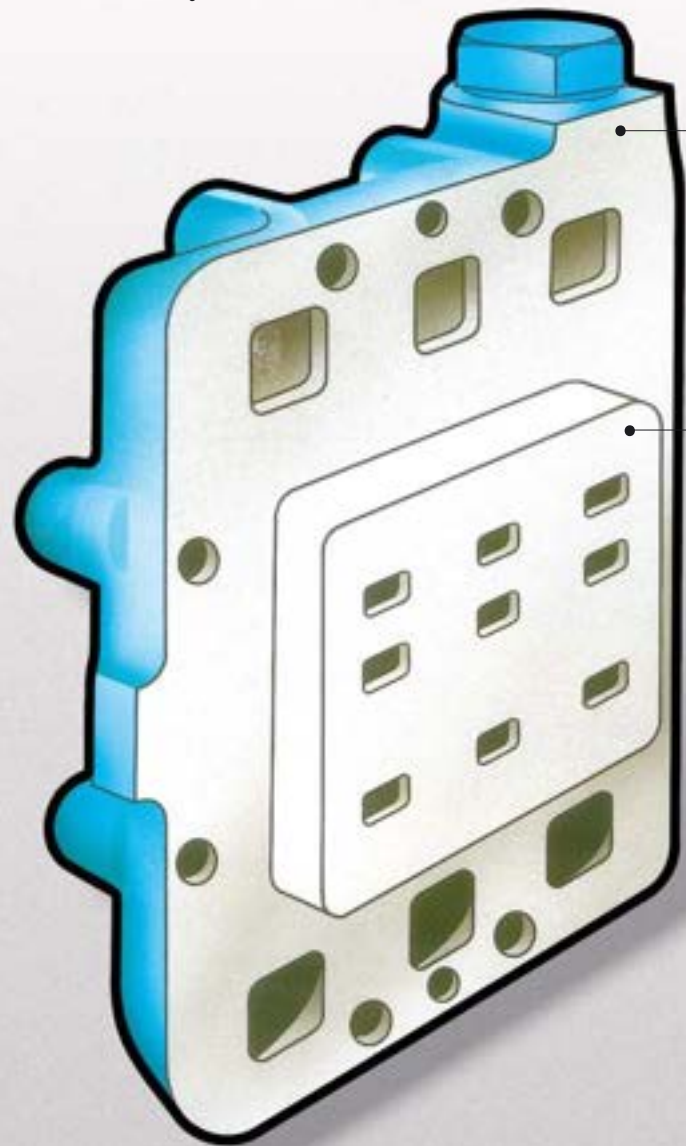
A positive pump with super-suction, self-priming, and dry-running abilities allows easy access to working parts resulting in reduced maintenance costs and down time.

First and foremost, the Sliding Shoe Pump is designed to operate consistently without the need for maintenance. But when maintenance is required, you won't have to spend your valuable time disassembling a complex piece of advanced technology. In fact, to access the heart of the pump, all you do is remove a few fasteners and remove the front cover. You'll reveal the most impressively simple pump design in existence. Few working parts ultimately means fewer problems. And when replacement of shoes or port plate is required, the task is done quickly and easily; without disturbing the drive, bearings, shaft seals or pipe connections.

Sensible design also means sound performance. The Sliding Shoe Pump offers more basic advantages than any other pump. In fact, when the pump was originally created, the most attractive features of various pumps on the market were incorporated into the design of the Sliding Shoe Pump. The problems which plagued other pumps were, of course, excluded from Megator's design.

The Sliding Shoe Pump primes itself instantly and can run without harm during dry suction. Every last drop is removed whether you're dealing with thin or viscous liquids. The pump delivers full capacity at high suction lifts. It's self-compensating for wear. And, as already stated, but worth repeating, it gives single-cover access to working parts.

The Pump provides exceptional suction performance, versatility, and ability to pump constant capacity against heads to 250 feet, and is used in a variety of applications: particularly where simple, rugged construction, inherent self-priming and high suction lift can save time and money.

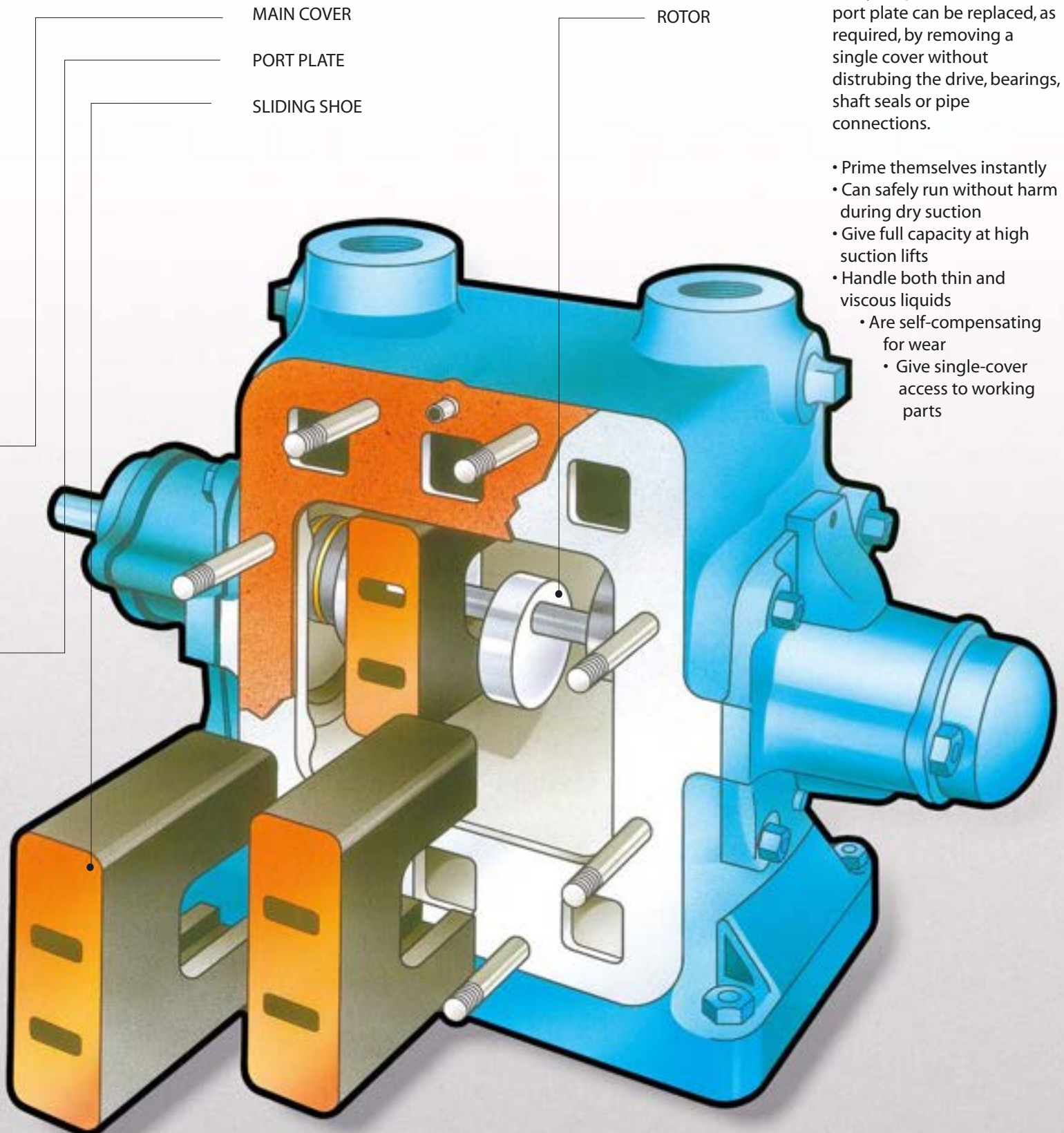


THE MARKET

SIMPLE AND ACCESSIBLE.

The working parts of the Sliding Shoe Pump can be easily inspected. Shoes and port plate can be replaced, as required, by removing a single cover without disturbing the drive, bearings, shaft seals or pipe connections.

- Prime themselves instantly
- Can safely run without harm during dry suction
- Give full capacity at high suction lifts
- Handle both thin and viscous liquids
- Are self-compensating for wear
- Give single-cover access to working parts





TAKING ON THE TOUGHEST JOBS

with Versatility and Consistency

ISO 9002 Certified

Sliding Shoe Pumps are available in our L-range designating total heads to 100 feet or H-range designating total heads to 250 feet. They have a maximum total suction lift to 27 feet. Suction and discharge ports 3/4" to 4". Pump Construction: cast iron, cast iron with Impreglon coating, bronze or aluminum

From the mines to the marines, the Sliding Shoe Pump has seen the worst of it. Specifically, recovering oil from sumps, pits, ponds, oil traps and other such areas. Gathering water in mines. Stripping sludge from tank bottoms. Pumping starch adhesive. Pumping diesel fuels and lubricating oils. And pumping liquids with minimal aeration, emulsification, or shearing.

In each application, the Sliding Shoe Pump has performed consistently, impressively and dependably.

The Sliding Shoe Pump delivers "super-suction" performance which it owes to a unique design feature. The working parts are entirely submerged and liquid sealed; even when pumping nothing but air. Liquid sealing also allows for self-priming and enables the pump to safely run with a completely dry suction without depending on a by-pass or other easily blocked device.

Importantly, the Sliding Shoe Pump will efficiently handle liquids of any viscosity to the maximum at which pumping is

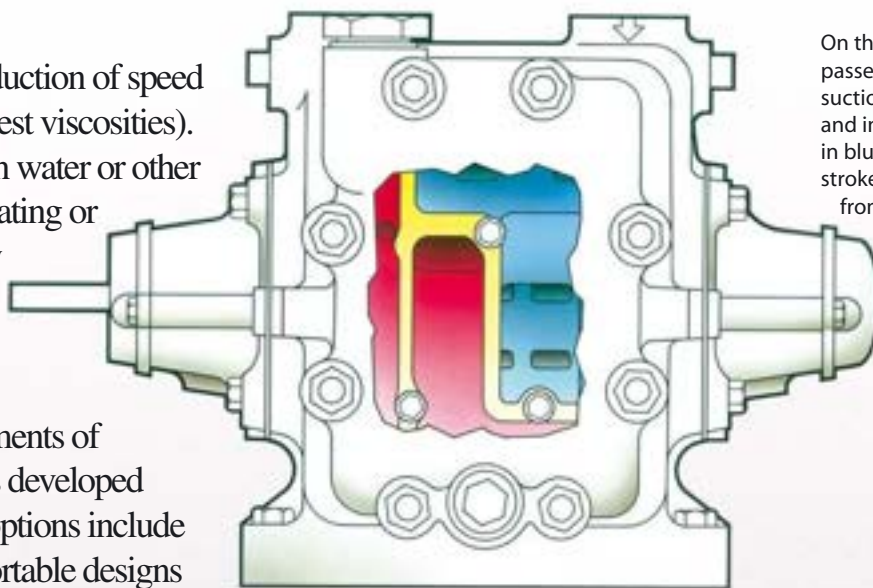


IN INDUSTRY

economically feasible (some reduction of speed being necessary only at the highest viscosities). The Pump is equally effective on water or other thin liquids that have little lubricating or penetrating properties. It readily handles free-flowing or viscous liquids, or a mixture of both.

To meet the specialized requirements of different industries, Megator has developed versatile assemblies. Available options include stationary, skid mounted, and portable designs featuring electric, gasoline, diesel, air, or hydraulic drives.

The pump is also available in a wide range of sizes. So you can be sure to get the right pump for your particular needs.



On the suction stroke, liquid passes down through the suction ports in the plate and into the shoes, as shown in blue. On the discharge stroke, liquid is displaced from the shoes through the discharge ports as shown in red.



Model H-300 for direct-drive arrangement.



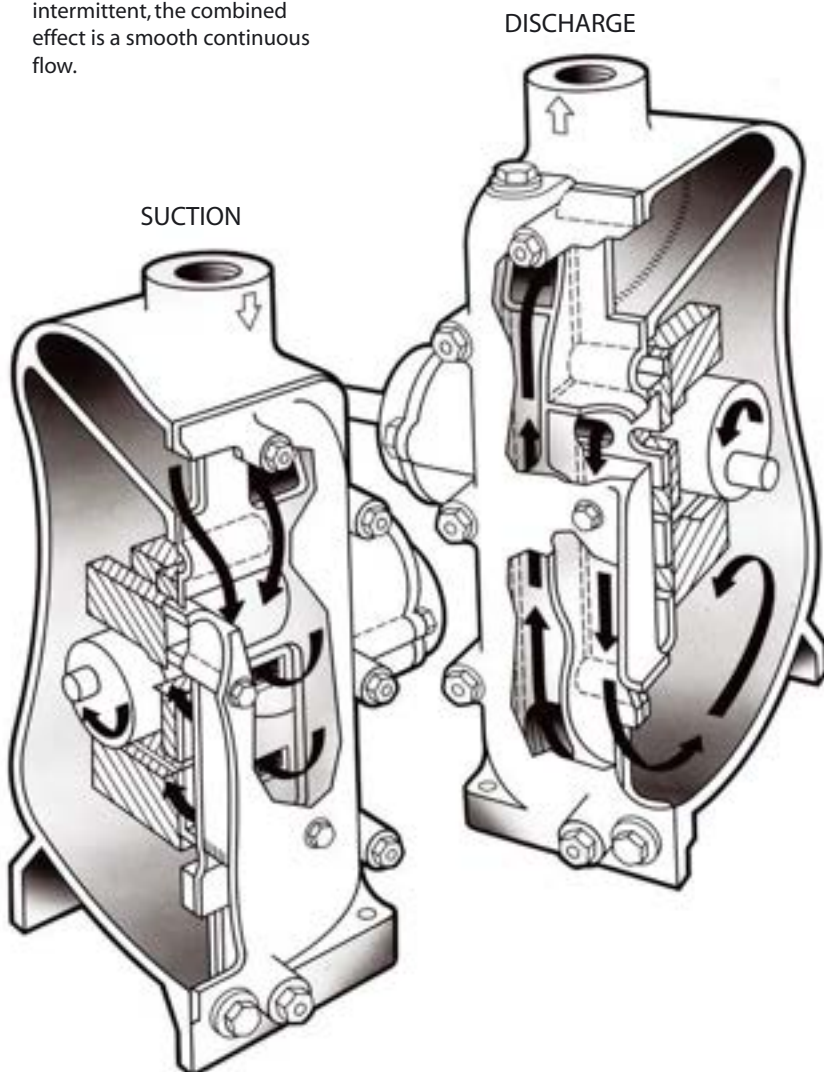
DEPENDABLE PUMPING ACTION- SMOOTH CONTINUOUS FLOW

“If it ain't broke, don't fix it” This old adage reflects the cautious, sensible approach we've taken when considering design changes on the Sliding Shoe Pump. The modern trend in pump design has been in the direction of greater technical complexity which, experience has shown, usually means a greater probability of downtime. The Sliding Shoe Pump is built to not break down; which is why industries of all kinds have come to rely on our pump.



Model H-300 for waste treatment.

The figure below illustrates the working cycle of a Sliding Shoe Pump. Although the displacement in each shoe is intermittent, the combined effect is a smooth continuous flow.



HOW THE PUMP WORKS

Pumping action is derived from the rotation of three or more eccentric discs, each of which is closely fitted into a displacement chamber or shoe of plastic material lined with synthetic rubber. The eccentric movement of each disc comprises horizontal and vertical components. The horizontal motion provides displacement; the disc reciprocates in the shoe like a piston in a cylinder. The vertical motion controls the valving, the entry and the discharge of the liquid through the pump.

When the pump is started, a hydraulic pressure differential is created which ensures a tight seal and maintains the shoes in close contact with a flat port plate forming the division between the suction and discharge sides of the pump. The plate has ports opposite each shoe, respectively, leading from the suction branch and into the discharge side of the pump. On the suction stroke, liquid passes down through the main cover and is drawn into the shoes through the suction ports in the plate. On the discharge stroke, liquid is displaced from the shoes through the discharge ports.

The liquid then passes down through the main cover into the bottom of the body before flowing through another passage in the main cover to the discharge branch. This arrangement helps to scavenge the bottom of the body and prevent the accumulation of solids. The outstanding performance of the pump does not depend upon fine clearances.

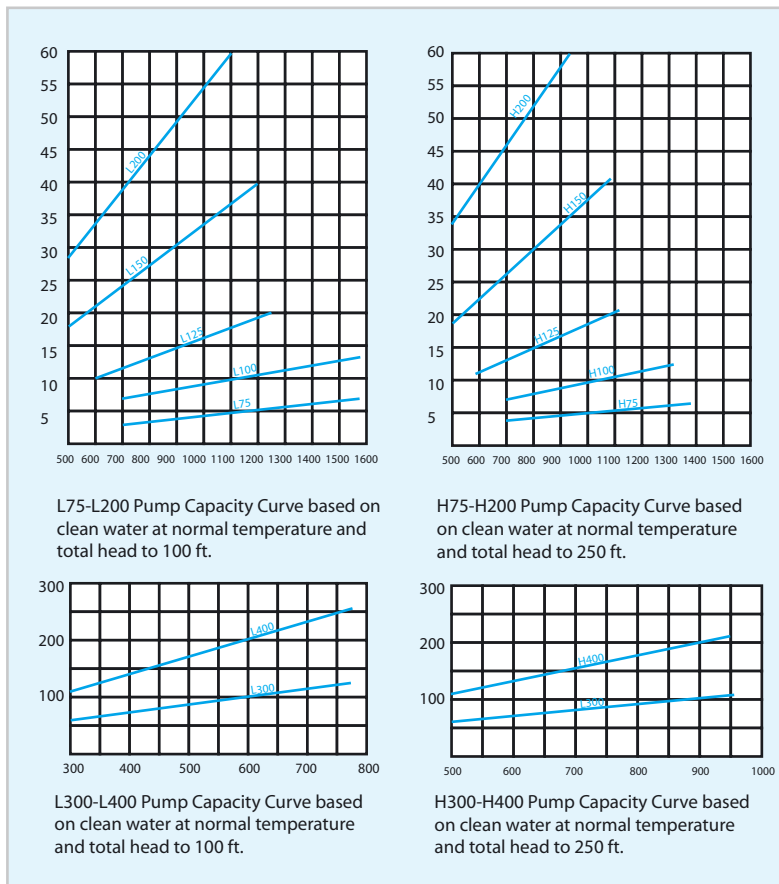
BUILT TO LAST, NOT TO REPLACE.

Megator developed a heavy-duty, reliable pump that can conceivably outlast any job it is assigned to.



The Sliding Shoe Pump is constructed of cast iron, cast iron with an Impreglon coating, bronze or aluminum. Port plates and rotors are made of precipitation-hardened stainless steel which can be coated for even greater wear resistance. Bearings are eccentric-locking with an inner ring of hardened stainless steel, which guarantees easy removal and quick access to shaft seals. Shaft seals are exposed to the cooling and flushing effect of the liquid flowing through the pump body.

If there is any possibility of excessive head or throttling of the discharge, a relief valve capable of passing the full pump capacity should be installed. The relief valve can be arranged to bypass to suction but an open and visible discharge is generally preferable.



Photo, Top Left
Model H-400
pumps on refinery
duty.

Photo, Left Sliding
Shoe Pumps
serving municipal
authority.

All these features make the Sliding Shoe Pump the most sensible, reliable pump in operation. Just as reliable as your Megator representative. So if you have any questions, give him a call at 412-963-9200 Outside PA call 800-245-6211.

Web: www.megator.com

e-mail: info@megator.com

Specifications and Dimensions

Megator Types L&H Pumps

Standard Ratings

HIGH SUCTION RATINGS

For very high suction lifts, high viscosities and dirty liquids consult factory.

CHARACTERISTICS

The Sliding-Shoe Pump delivers its rated capacity at any head and 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 straight line.

INTERMEDIATE CAPACITIES

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

MOTOR HOSEPOWERS

The standard motors listed provide for the maximum heads.

Pump	Capacity	Maximum Total Head		Motor HP		Maximum Total Suction Lift				Pump rev/min
	U.S. gal/min	feet water	lbs/in²	WATER	4500 SSU	WATER		4500 SSU		
						feet	in Hg	feet	in Hg	

TYPE L Belt-Drive: Total Heads To 100 Feet

L75	6	100	45	¾	1	23	20	20	18	1575
L100	12	100	45	1½	2	23	20	20	18	1575
L125	20	100	45	1½	3	23	20	20	18	1290
L150	40	100	45	3	5	23	20	20	18	1225
L200	60	100	45	5	7½	23	20	20	18	1120
L300	120	100	45	7½	15	20	17	18	16	780
L400	240	100	45	15	30	20	17	18	16	760

TYPE H Belt-Driven: Total Heads To 250 Feet

H75	6	250	110	1	2	23	20	20	18	1390
H100	12	250	110	2	3	23	20	20	18	1345
H125	20	250	110	3	5	23	20	20	18	1200
H150	40	250	110	5	7½	23	20	20	18	1120
H200	60	250	110	7½	10	22	19	20	18	960
H300	100	250	110	10	20	22	19	20	18	960
H400	200	250	110	20	40	22	19	20	18	960

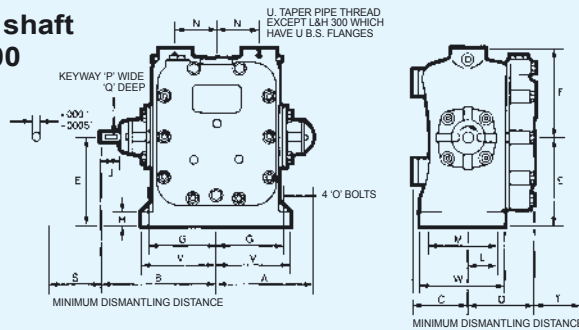
TYPE L Direct-Coupled: Total Heads To 100 Feet

L75	6.5	100	45	¾	1	23	20	20	18	1730
L100	13	100	45	1½	2	23	20	20	18	1730
L125	18	100	45	1½	3	23	20	20	18	1150
L150	36	100	45	3	5	23	20	20	18	1150
L200	60	100	45	5	7½	23	20	18	16	1150
L300	130	100	45	7½	15	20	17	18	16	865
L400	260	100	45	15	30	20	17	18	16	865

TYPE H Direct-Coupled: Total Heads To 250 Feet

H75	7.5	250	110	1	2	23	20	20	18	1730
H100	15	250	110	2	3	23	20	20	18	1730
H125	18	250	110	3	5	23	20	20	18	1150
H150	40	250	110	5	7½	23	20	20	18	1150
H200	54	250	110	7½	10	21	18	20	18	865
H300	90	250	110	10	20	21	18	20	18	865
H400	180	250	110	20	40	21	18	20	18	865

Pumps with bare shaft L & H 75 - L&H 300

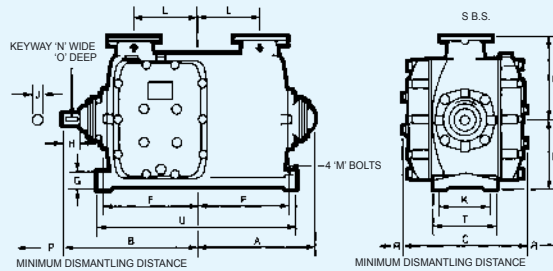


Approximate weights

	lbs.		lbs.
L75	38	H75	51
L100	56	H100	71
L125	80	H125	100
L150	122	H150	168
L200	166	H200	221
L300	406	H300	452

Pump type	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
L75	6¼	7¼	3¼	4	4½	4½	3¾	¾	1½	½	1¾	4	2¾	¾	½	¼	—	9¼	3	¾	¾	4¾	—
L100	7	8½	4	4¾	5	5	4	¾	1½	½	2	5¼	2¾	¾	½	¼	—	10¼	3¾	1	4¾	6	—
L125	7½	9	4½	5½	6	6¼	5	¾	1¾	¾	2¾	6¼	3¼	¾	¾	¾	—	12¼	4	1¼	5½	7½	—
L150	8¾	10	4½	6	7¼	7½	5¾	1¼	1¾	¾	2¾	6	3½	½	¾	¾	—	13¾	5	1½	6¾	7¼	—
L200	9¾	11½	5¾	6¾	8½	8¾	6	1¼	1¾	1	2¾	7	3¾	½	¾	¾	—	14¾	5½	2	6¾	8¼	—
L300	13½	16	7½	9¾	11	13	8	2	4	1¼	4¼	11	4½	¾	¾	¾	—	20	12	3	8½	12¾	—
H75	6½	8	3½	4½	4½	4½	3¾	¾	1½	¾	1¾	4¾	2¾	¾	¾	¾	—	10	3¾	¾	¾	5½	—
H100	7½	9¼	4½	4¾	5	5	4	¾	2	¾	2	5¼	2¾	¾	¾	¾	—	11½	4¾	1	4¾	6	—
H125	8¾	10½	4½	5½	6	6¼	5	¾	2	1	2¾	6¼	3¼	¾	¾	¾	—	13¼	5	1¼	5¾	7½	—
H150	9½	11¾	4¾	6½	7¼	7½	5¾	1¼	2½	1¾	3	7	3½	½	¾	¾	—	14½	5½	1½	6¾	8¼	—
H200	10¼	12½	6½	6¾	8½	8¾	6	1¼	2¾	1¼	3¾	8½	3¾	½	¾	¾	—	15½	6½	2	6¾	9¾	—
H300	14	17	7½	9¾	11	13	8	2	4	1½	4¼	11	4½	¾	¾	¾	—	21	12	3	8½	12¾	—

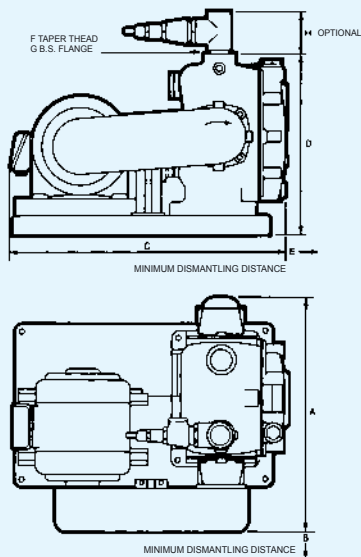
L & H 400



Pump type	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	R	S	T	U	V	Approx. wt. in lbs.
L400	18 1/4	21 1/8	19 1/2	11	13	14 3/4	2 3/16	4	1 1/4	8	10	3/4	3/16	5/8	30	12	4	10	31 1/2	—	710
H400	18 3/4	22 1/4	19 1/2	11	13	14 3/4	2 3/16	4	1 1/4	8	10	3/4	3/8	5/32	31	12	4	10	31 1/2	—	730

ROTATION Standard rotation is clockwise facing driving end and the standard assembly is with the suction at the non-drive end. Pump cannot be operated in the reverse direction but can be assembled so that the drive is at the opposite end.

Belt-driven assemblies



Pump type	A	B	C	D	E	F	G	H	Approx. wt. in lbs.
L75	14 3/4	9 1/4	20 3/4	10 1/2	3	3/4	—	3	105
L100	15 3/4	10 1/4	21 3/4	11 1/2	3 3/4	1	—	3 1/2	135
L125	17	12 1/4	23 1/2	14	4	1 1/4	—	3 3/4	155
L150	19	13 3/4	27 1/4	16 3/4	5	1 1/2	—	4	220
L200	20 3/4	14 3/4	30	20 1/4	5 1/2	2	—	4 1/4	320
L300	30	20	34 1/4	28 3/8	12	—	3	7	560
L400	44	30	54	28 1/2	12	—	4	9	1160
H75	15 3/4	10	21 1/8	10 1/2	3 1/4	3/4	—	3	120
H100	17 1/4	11 1/2	23 3/4	11 1/2	4 1/4	1	—	3 1/2	150
H125	19 3/8	13 1/4	26	14	5	1 1/4	—	3 3/4	205
H150	21 1/2	14 1/2	28 1/4	16 3/4	5 1/2	1 1/2	—	4	260
H200	23 1/2	15 1/2	30 1/4	20 3/8	6 1/2	2	—	4 1/4	355
H300	32	21	34 1/4	28 3/8	12	—	3	7	890
H400	44	31	54	28 1/2	12	—	4	9	1600

SUCTION LIFT

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

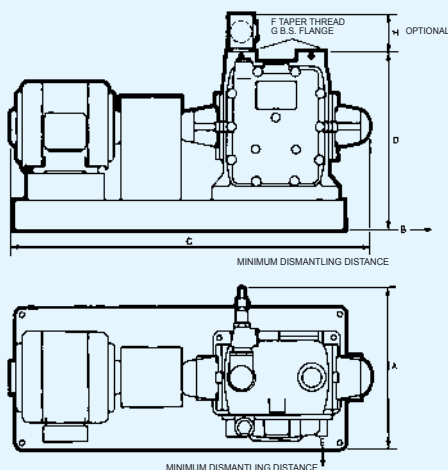
TEMPERATURE

The Sliding-Shoe Pump allows for temperatures up to 150° F, subject to the 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 are preferably used for dirty liquids. Under severe conditions still lower speeds may provide the most economical installation.

Direct-coupled assemblies



Pump type	A	B	C	D	E	F	G	H	Approx. wt. in lbs.
L75	10 3/4	9 1/4	25 3/8	10 1/2	3	3/4	—	3	135
L100	10 3/4	10 1/4	28 3/4	13	3 3/4	1	—	3 1/2	170
L125	12 1/4	12 1/4	30 1/4	15 1/4	4	1 1/4	—	3 3/4	195
L150	12 7/8	13 3/4	34 3/4	17 3/4	5	1 1/2	—	4	310
L200	14 1/4	14 3/4	40 7/8	21 1/4	5 1/2	2	—	4 1/4	460
L300	18 1/2	20	54	28	12	—	3	7	700
L400	21	30	67	28	12	—	4	9	1500
H75	14	10	28 1/4	10 1/2	3 1/4	3/4	—	3	150
H100	14	11 1/2	30 1/2	13	4 1/4	1	—	3 1/2	190
H125	13	13 1/4	35 1/8	15 1/4	5	1 1/4	—	3 3/4	260
H150	14 1/4	14 1/2	41 1/4	18 3/4	5 1/2	1 1/2	—	4	360
H200	15 1/4	15 1/2	43 1/8	21 1/4	6 1/2	2	—	4 1/4	510
H300	18 1/2	21	53	28	12	—	3	7	1100
H400	20	31	69	28	12	—	4	9	2100

As research and development proceed continuously, Megator reserves the right to make detailed modifications of design or dimensions without notice. Certified drawings are available to cover specific orders.

BENEFITS

- Self-priming
- Operates with dry suction
- Simple to install
- High suction lift
- Constant capacity at varying heads
- Single cover access
- Simple to operate
- Self-compensating for wear
- The same pump for water and oils
- Remove the last drop from containers
- Minimal shear/emulsification

FEATURES

- Capacities to 264 gpm
- Suction lifts to 27 ft.
- Viscosities to 21,000 SSU
- Heads to 250 ft.
- Available in bronze, cast iron, cast iron with Impreglon coating & aluminum casings
- Air, diesel, electric, hydraulic or gasoline driven
- Variable speed inverter control (VFD)
- Direct coupled or belt drive options
- Available assemblies include stationary, skid-mounted & mobile options



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