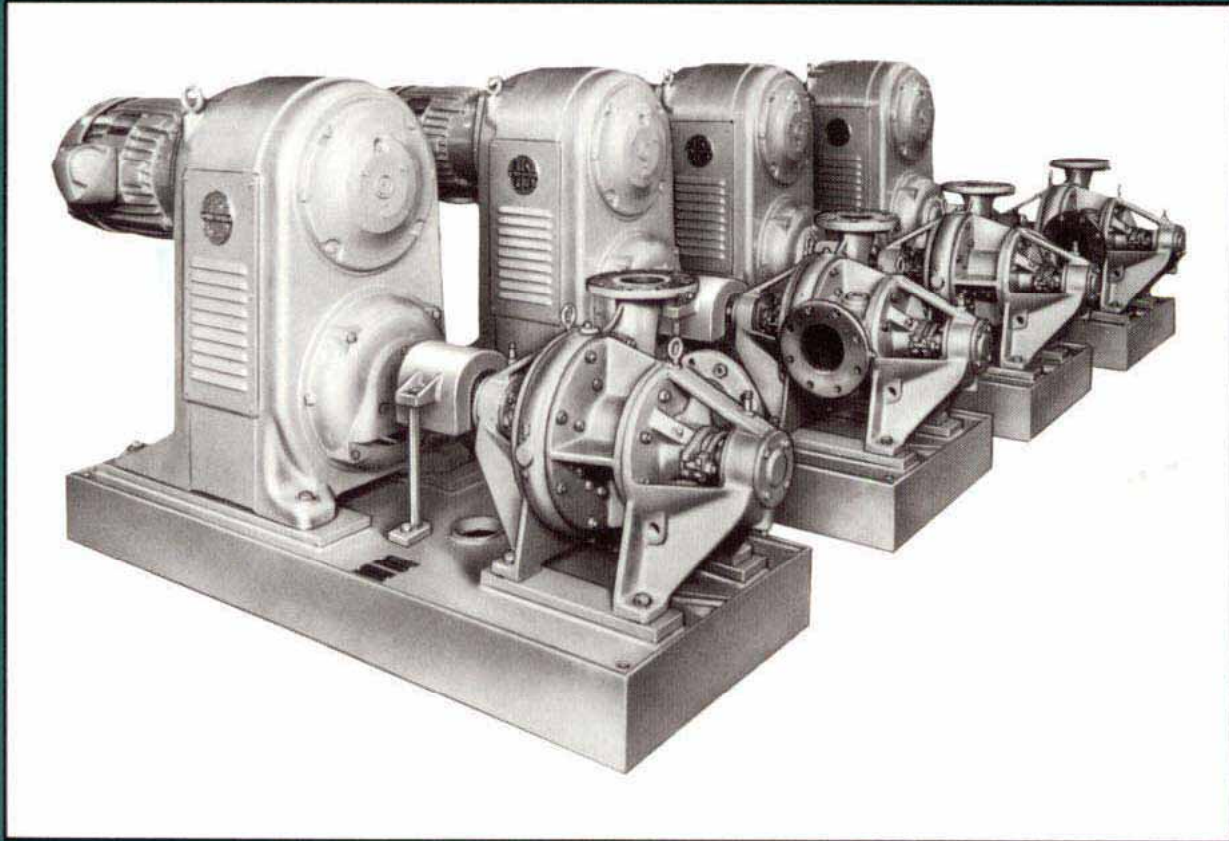
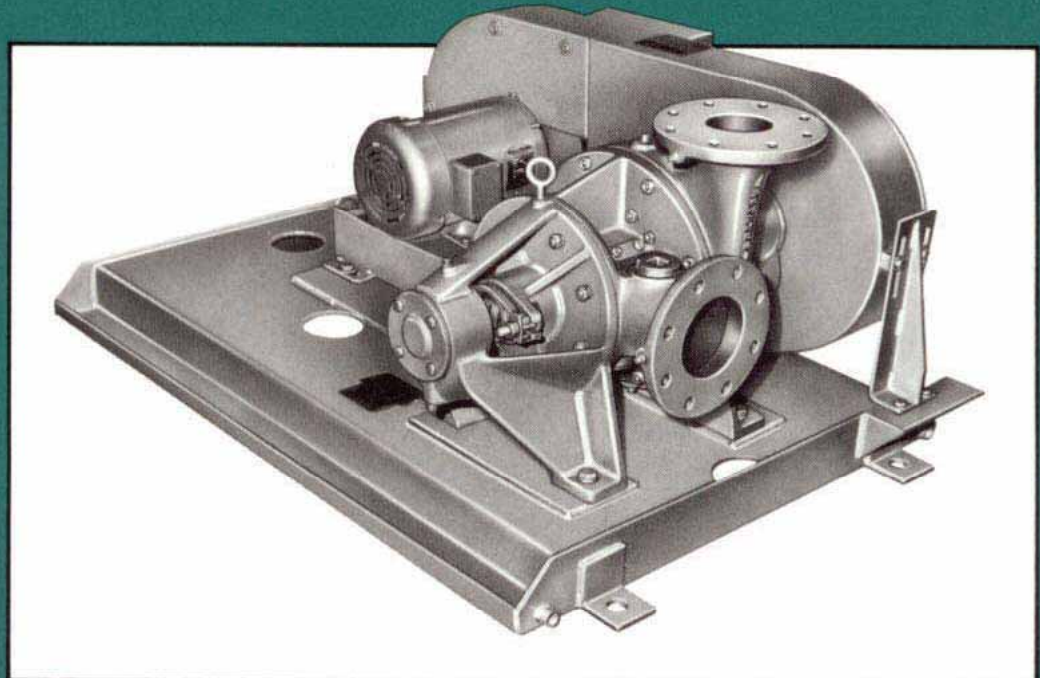


Chicago Pump[®] Scru-Peller[®] sludge pump



- Capacities to 700 GPM
Discharge heads
to 160 feet
- Continuous cutting
during pumping
- Economical, depend-
able operation



High grade materials and expert painstaking workmanship in every Scru-Peller[®] sludge pump

Scru-Peller sludge pump

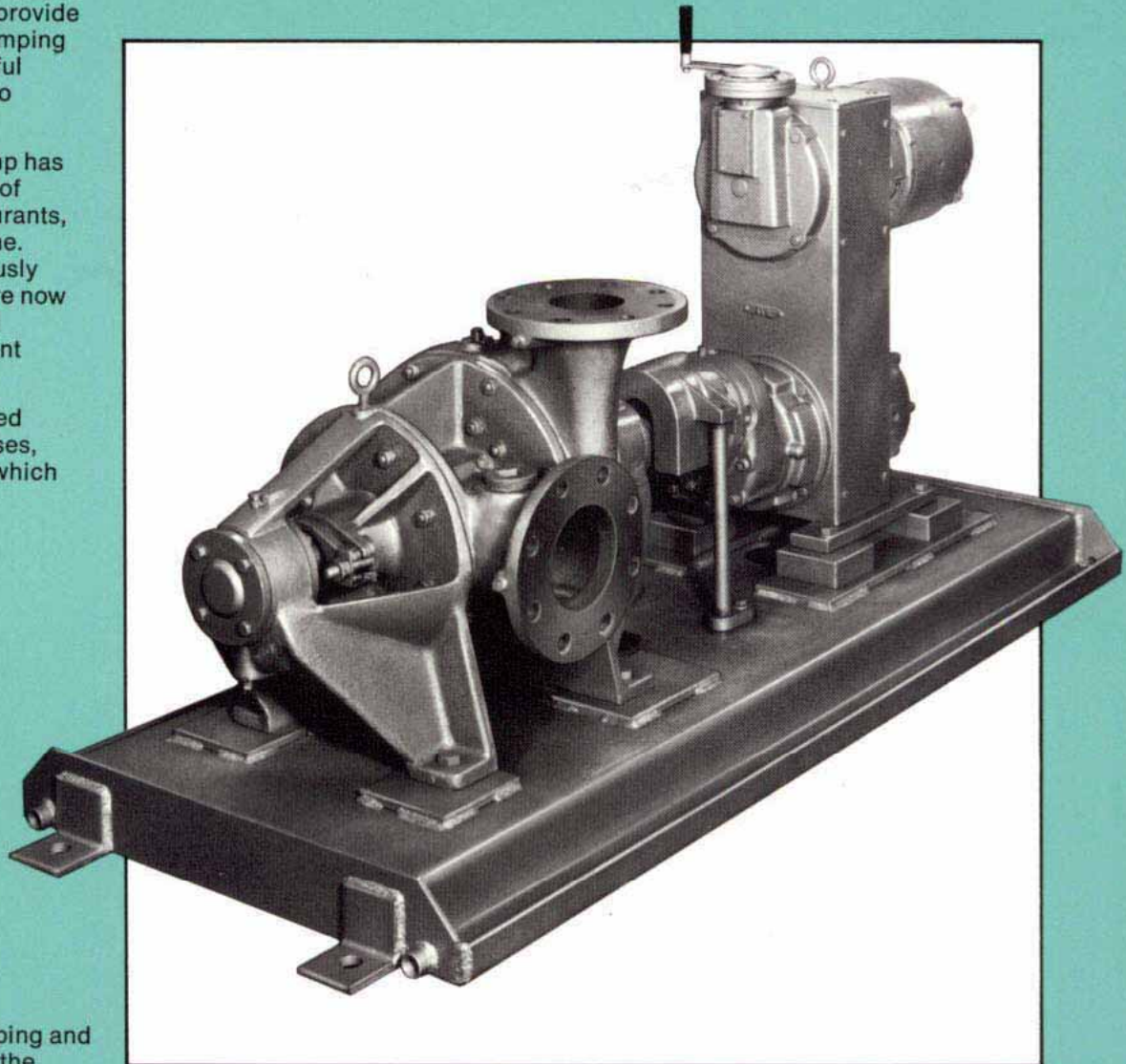
The Scru-Peller sludge pump was designed for the exclusive purpose of pumping sludge. This pump is not new to the sewage treatment field, but is an established product in use since 1934. The primary objective of the pump is to successfully and economically provide uninterrupted and clogproof pumping operations. Over 3,300 successful installations attest to its ability to provide this function.

The demand for this sludge pump has increased with the introduction of garbage disposal units to restaurants, industry, and the individual home. Objectional substances, previously discarded in the garbage pail are now discharged into the sewage and received by the sewage treatment plants.

Primary sludge consists of settled solids combined with fats, greases, vegetation, strings, sticks, etc. which

are difficult to pump and responsible for frequent plugging of the ordinary centrifugal sludge pump, or so-called non-clog pump. Cleaning and unplugging these pumps is an expensive, time consuming, unsanitary procedure.

Plugging of the impeller, wedging and accumulation of materials behind the impeller, which is common to the ordinary centrifugal sludge pump, is a remote occurrence in the Scru-Peller. The inherent qualities of the pump assure reliability in operation.



Principle of Operation

The Scru-Peller sludge pump simultaneously provides a pumping and cutting action. Sludge entering the suction of the pump is carried in a continuous stream by a two flight screw conveyor to an open type, two-blade impeller. The sharp edges of the screw conveyor and the impeller are of hardened stellite. Solids or stringy materials extending beyond the edge of the screw are cut up between the stellite edges of the screw and shear bars incorporated in the screw housing.

The edges of the impeller in conjunction with the shear bars in the

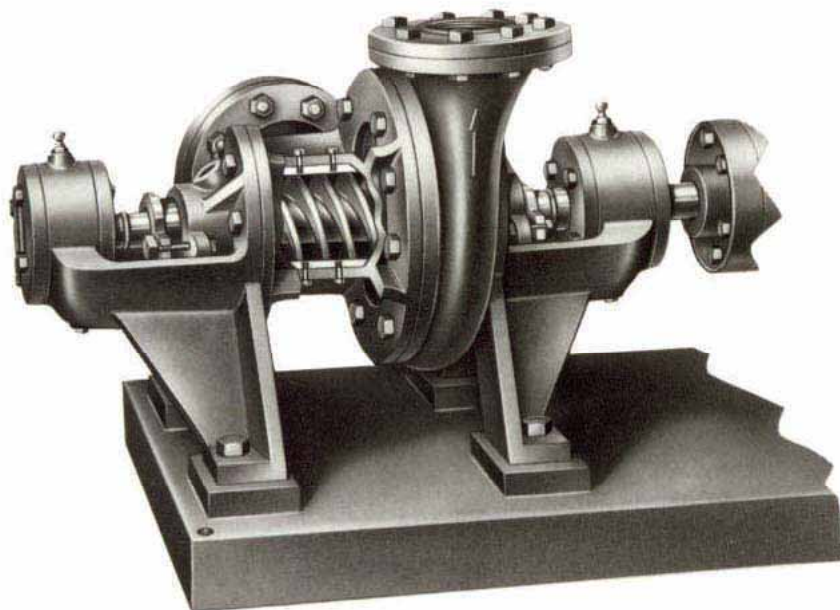
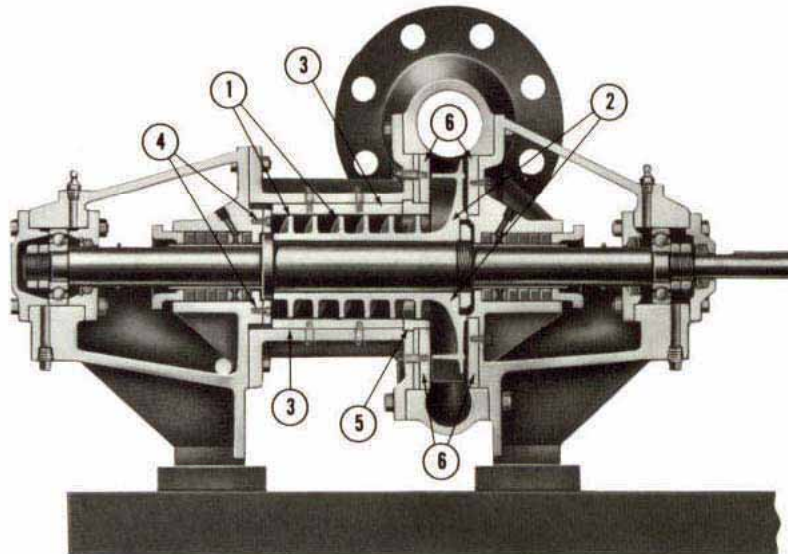
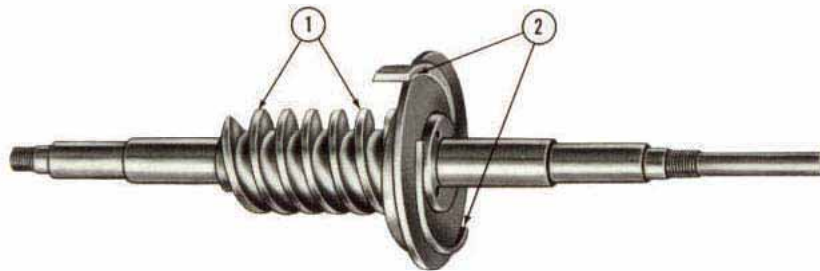
discharge casing also provide a cutting action.

As the screw conveyor has two flights, the impeller is provided with two blades. Each flight of the screw conveyor connects to its respective impeller blade, thereby assuring a smooth, continuous flow into, and out of, the impeller.

The effective position of the cutting elements make this pump practically

impossible to clog, since there is no place for materials to lodge or pack.

The Scru-Peller sludge pump is recommended for sludge pumping applications of intermittent nature. Continuous duties such as floor digester recirculation or activated sludge return may shorten the expected life of the cutting parts. Introduction of excessive abrasives to the pump should be avoided.



Exclusive Features of Design

The Scru-Peller sludge pump incorporates exclusive design features that allow the unit to pump and cut solids when required. Large size solids are substantially reduced by the cutting action of eight shear bars in the screw conveyor housing and impeller casing. Stellite cutting edges on the screw conveyor and on the two-blade impeller together with the shear ring provide additional cutting surfaces.

Cutting Elements

- 1) Continuous screw conveyor with stellite cutting edges.
- 2) Extended two-blade open impeller also with stellite cutting edges.
- 3) Two precision made horizontal shear bars located in the conveyor housing.
- 4) Two vertical shear bars mounted inside the front end bearing bracket at the upper end of the screw conveyor.
- 5) Shear ring surrounding the down stream side of the screw conveyor just preceding the impeller.
- 6) Four vertical shear bars located in the impeller casing on each side of the impeller.

Scru-Peller® sludge pump Dimensions

The Scru-Peller sludge pump is offered in the three following horizontal models: SSL-4 which is suitable for capacities up to 220 GPM, SLL-4 with a maximum capacity of 500 GPM, and SMM-6 with a maximum capacity of 700 GPM.

Power arrangements of the Scru-Peller sludge pump

Constant Speed-Belt Transmission—utilizing a standard constant speed induction motor. Multiple sizes of

pulleys are available for operation of the pumps at the indicated speeds.

Variable Speed-Belt Transmission—equipped with a constant speed standard induction motor in a variable speed drive arrangement for a manual speed adjustment.

Enclosed Variable Speed-Direct Connected—offering a direct connected variable speed enclosed drive. Manual or electric speed adjustment is available.

Water Seal

Water seal units are recommended as a precaution to prevent abrasives and other materials from scoring the shaft. Water seals prevent air from breaking through the stuffing box. Grease seals are furnished if water seals are not specified.

Enclosed Variable Speed-Direct Connected

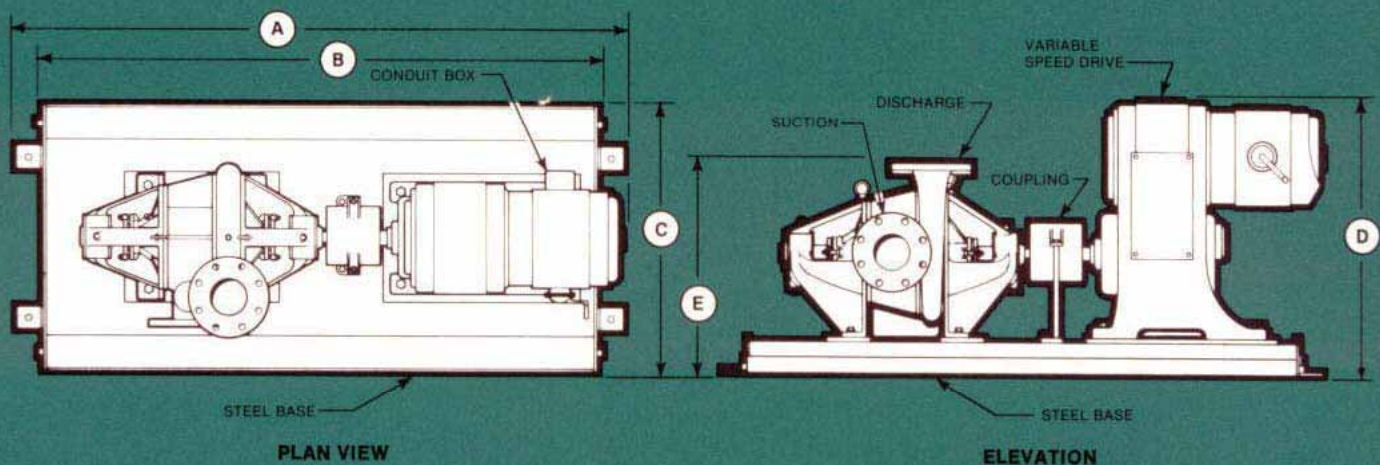


TABLE OF DIMENSIONS

Pump Frame	Disch.	Suct.	RPM Range	HP	A	B	C	D	E	
SSL4	4	4	950	3	64 $\frac{1}{2}$	59	27	25 $\frac{5}{8}$	23 $\frac{1}{2}$	
			475	5	77 $\frac{3}{4}$			32 $\frac{1}{4}$	24 $\frac{1}{2}$	
			1150	5	77 $\frac{3}{4}$			32 $\frac{1}{4}$	24 $\frac{1}{2}$	
			575	7 $\frac{1}{2}$	76 $\frac{1}{2}$	70 $\frac{1}{2}$	33	33 $\frac{1}{4}$	23 $\frac{1}{2}$	
			1350	7 $\frac{1}{2}$	76 $\frac{1}{2}$	70 $\frac{1}{2}$	33	33 $\frac{1}{4}$	23 $\frac{1}{2}$	
SLL4	4	5	1450	10	79 $\frac{3}{4}$			32 $\frac{1}{4}$	24 $\frac{1}{2}$	
			725	10	79 $\frac{3}{4}$			32 $\frac{1}{4}$	24 $\frac{1}{2}$	
			1750	15	83 $\frac{3}{4}$			39 $\frac{3}{4}$	23 $\frac{1}{2}$	
			875	15	83 $\frac{3}{4}$			39 $\frac{3}{4}$	23 $\frac{1}{2}$	
			800	3	66 $\frac{1}{4}$	59	27	25 $\frac{5}{8}$	23 $\frac{1}{2}$	
SLL4	4	5	400	3	66 $\frac{1}{4}$	59	27	25 $\frac{5}{8}$	23 $\frac{1}{2}$	
			950	5						
			475	5						
SLL4	4	5	1100	7 $\frac{1}{2}$	79 $\frac{1}{4}$	70 $\frac{1}{2}$	33	32 $\frac{1}{4}$	24 $\frac{1}{2}$	
			550	7 $\frac{1}{2}$	79 $\frac{1}{4}$	70 $\frac{1}{2}$	33	32 $\frac{1}{4}$	24 $\frac{1}{2}$	
			1250	10	81 $\frac{1}{4}$					
SLL4	4	5	625	10	81 $\frac{1}{4}$					

TABLE OF DIMENSIONS

Pump Frame	Disch.	Suct.	RPM Range	HP	A	B	C	D	E
SMM6	6	8	600	3	74 $\frac{3}{4}$	67 $\frac{1}{2}$		31 $\frac{3}{4}$	
			320	3	74 $\frac{3}{4}$	67 $\frac{1}{2}$		31 $\frac{3}{4}$	
			700	5					
			390	5					
			780	7 $\frac{1}{2}$	87 $\frac{1}{4}$	81 $\frac{1}{2}$	33	36 $\frac{3}{4}$	32
			390	7 $\frac{1}{2}$	87 $\frac{1}{4}$	81 $\frac{1}{2}$	33	36 $\frac{3}{4}$	32
			875	10	93 $\frac{1}{2}$			34 $\frac{1}{2}$	
			475	10	93 $\frac{1}{2}$			34 $\frac{1}{2}$	
			1025	15					
			585	15					
SMM6	6	8	1150	20	98 $\frac{3}{4}$	86 $\frac{1}{2}$		41 $\frac{3}{4}$	
			585	20	98 $\frac{3}{4}$	86 $\frac{1}{2}$		41 $\frac{3}{4}$	

Constant Speed-Belt Transmission

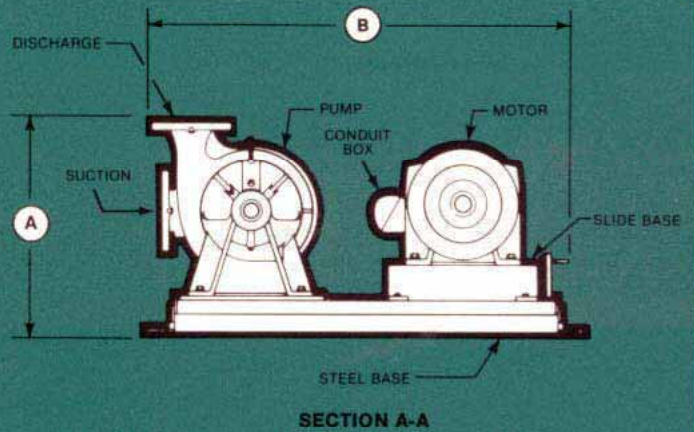
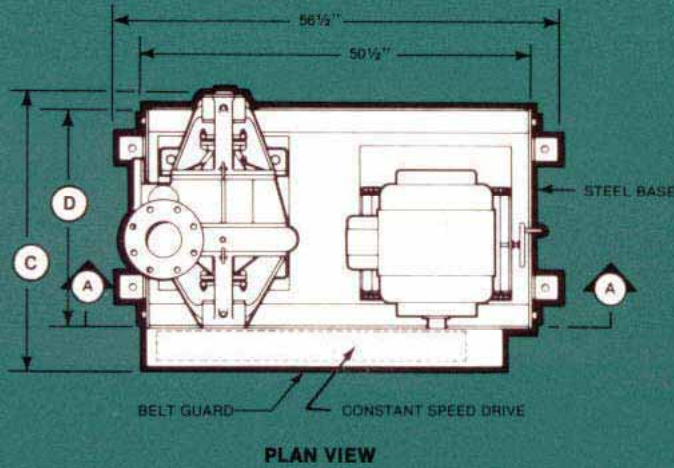


TABLE OF DIMENSIONS						
Pump Frame	Disch.	Suct.	A	B	C	D
SSL4	4	4	23½	50½	45	35½
SLL4		5	24	51		
SMM6	6	8	32	57	46½	41½

Variable Speed-Belt Transmission

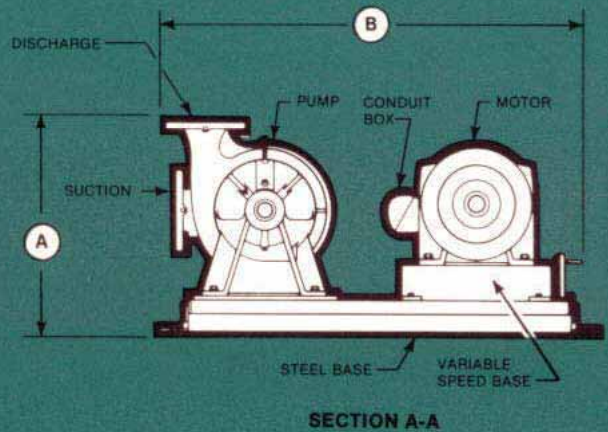
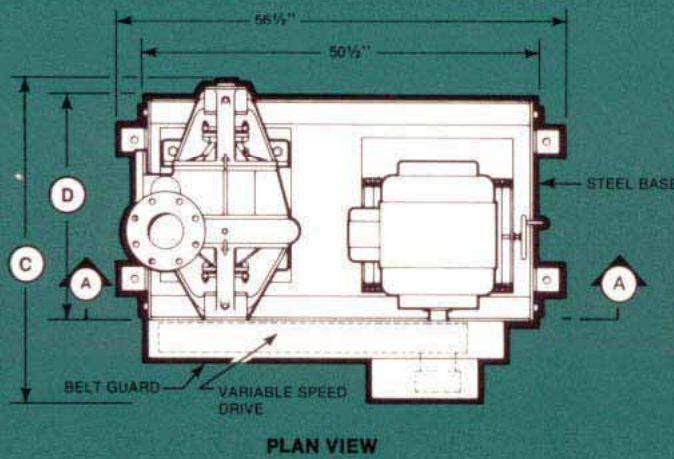
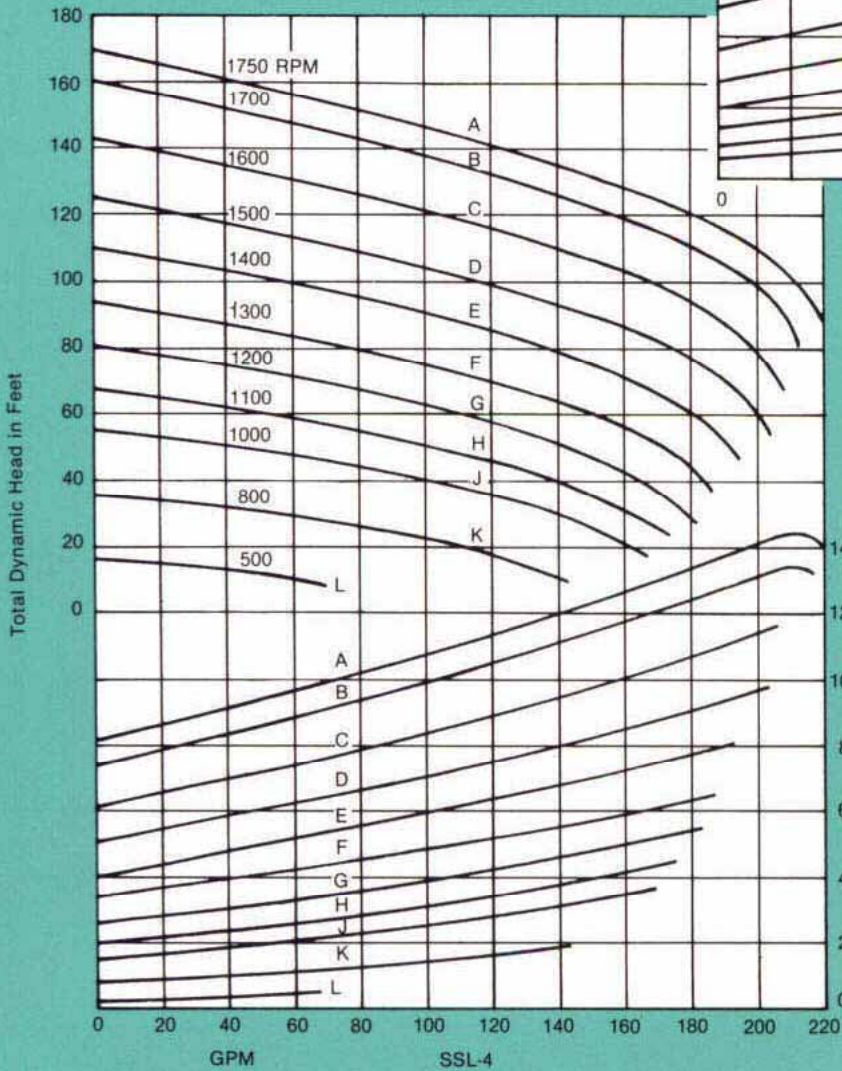
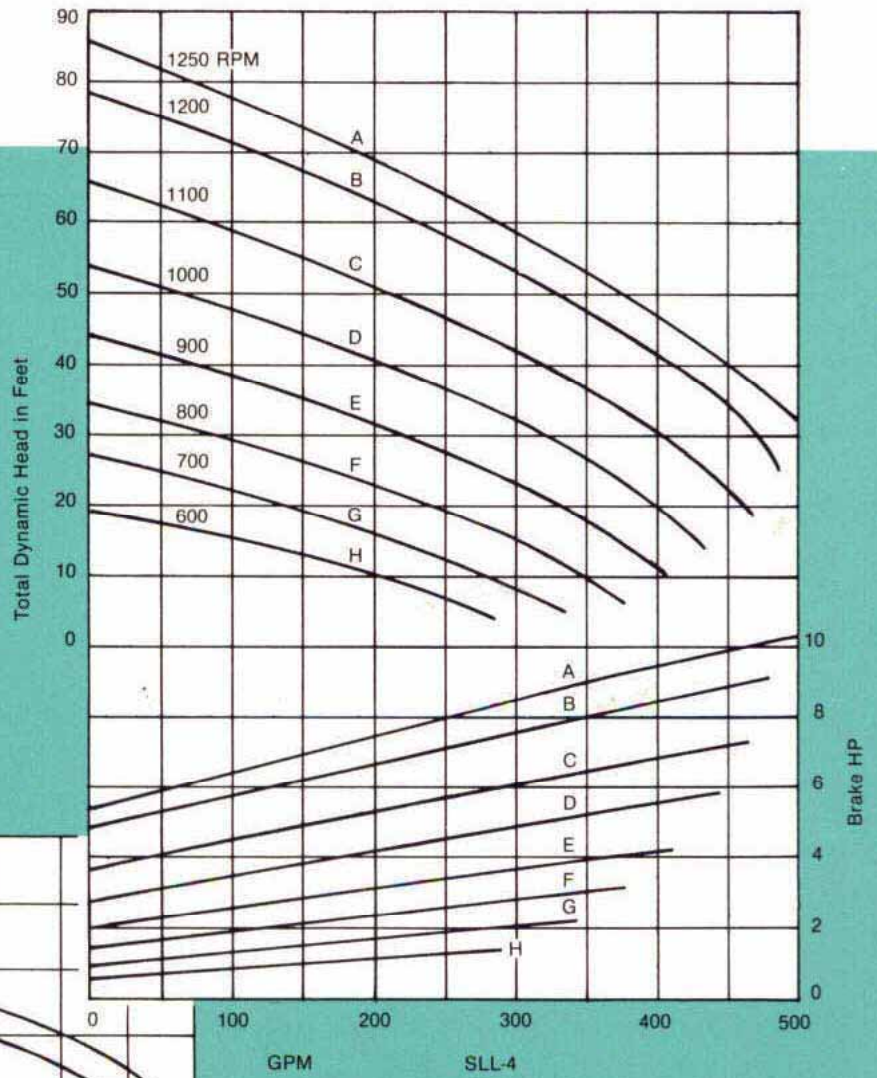
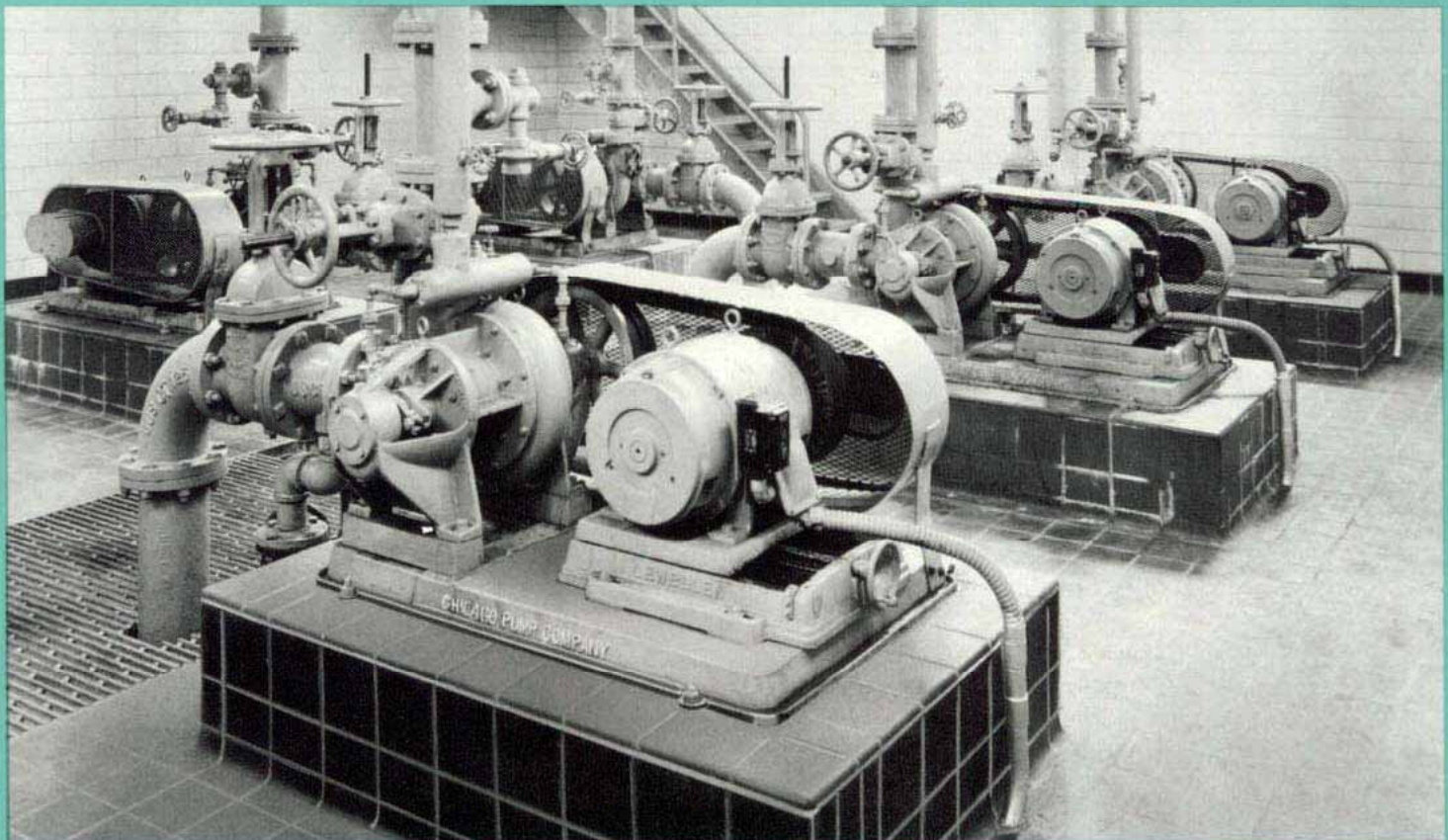
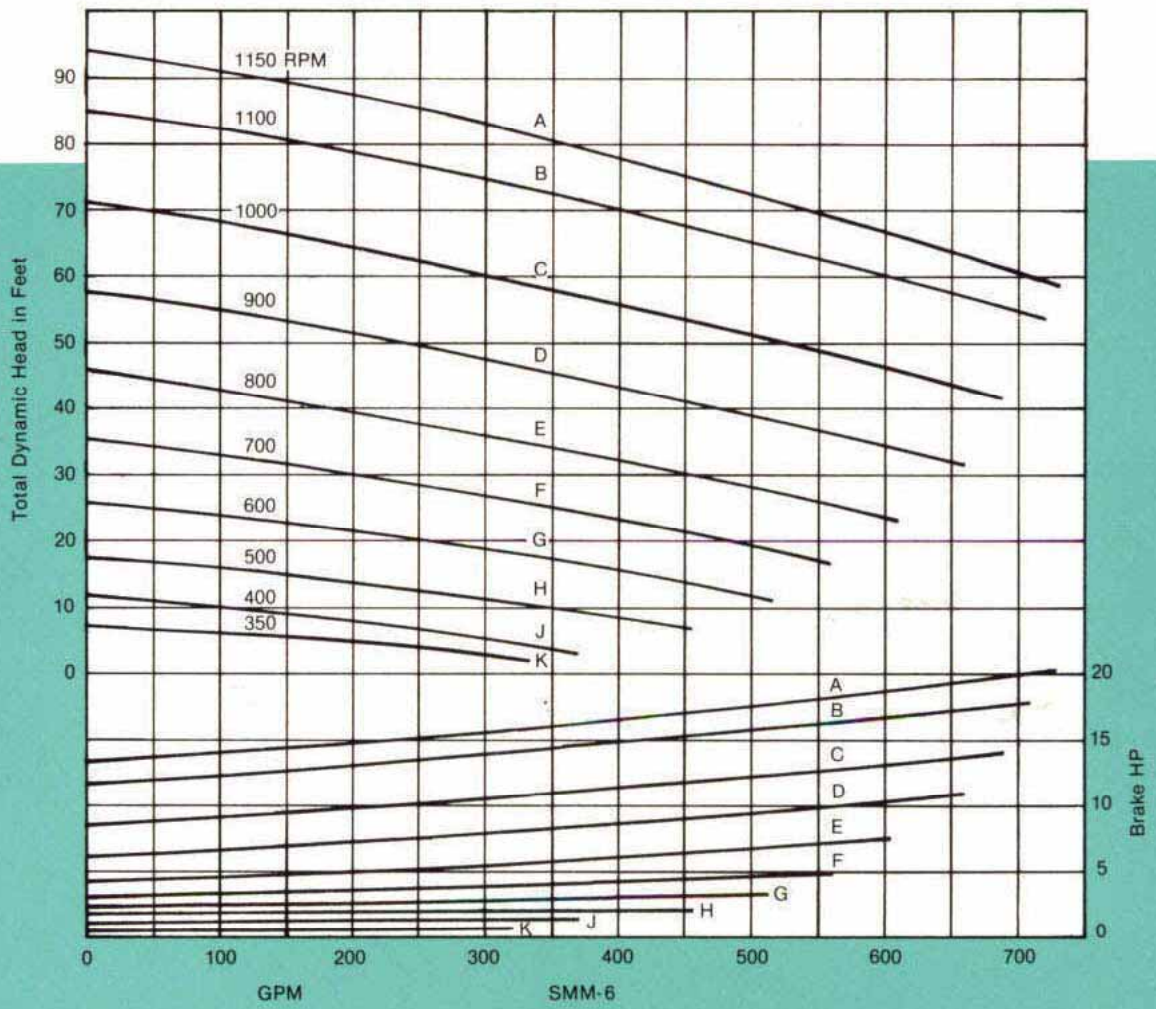


TABLE OF DIMENSIONS						
Pump Frame	Disch.	Suct.	A	B	C	D
SSL4	4	4	23½	53	45	35¾
SLL4		5	24	53½		
SMM6	6	8	32	58	51¾	41¾

Scru-Peller® Selection Curves





Scru-Peller® Typical Specifications

There shall be furnished and installed, as shown on the plans, _____ Chicago Pump Scru-Peller Sludge Pump(s) Model _____ as manufactured by Chicago Pump Company. The Scru-Peller sludge pump(s) shall be capable of delivering _____ GPM against a TDH of _____ feet when operating at _____ RPM.

Pump Construction

(The) (Each) pump shall be complete with a fine grade cast steel, stellite edged, dual flight screw conveyor and open impeller with two stellite edge blades extended to front and back of the impeller shroud. Top and bottom of the screw conveyor housing shall include closely aligned shear bars with edges having a minimum Brinnell hardness of 500, extended over the entire length of the conveyor housing. Additional shear bars and shear ring shall be located on the sides of the screw conveyor housing and in the volute casing on each side of the impeller.

The impeller and screw conveyor shall be keyed and locked to the alloy steel pump shaft. The shaft shall be of step design to provide seating surfaces for the bearing and sleeve mounting. The pump shaft shall be turned and finished ground to assure concentricity of alignment. To protect the shaft, renewable shaft sleeves shall be provided at the area of the shaft passing through the packing box. Each end of the pump shaft shall be sealed against leakage by a minimum of five square sections of packing and a lantern ring. The stuffing box shall

be tapped for a water seal or grease lubrication connection. Each pump shaft end shall be supported by a heavy-duty self-aligning bearing fitted into a solid bearing housing forming an integral part of the close grained cast iron pump casing.

Drive Arrangement (Select one of three drive arrangements)

1) Constant Speed Belt Transmission

The Scru-Peller sludge pump shall be driven by one (open dripproof) (totally enclosed) (explosionproof) horizontal constant speed motor _____ HP, 1750 RPM, _____ volts, 3 phase, _____ hertz. Motor and pump shall be complete with V-belt and pulleys sized to operate the pump at _____ RPM. A fabricated steel drive guard shall be included. Pump, motor and drive guard shall be mounted on a common fabricated steel base with drip lips and drainage connections at both ends.

2) Variable Speed Belt Transmission

Each Scru-Peller sludge pump shall be driven by one (open dripproof) (totally enclosed) (explosionproof) horizontal constant speed motor _____ HP, 1750 RPM, _____ volts, 3 phase, _____ hertz. The motor shall be complete with an open type variable speed belt transmission unit providing an output speed range from _____ RPM to _____ RPM. A handwheel to vary the output speed and a drive guard assembly shall be included.

The variable speed unit and motor, drive guard and pump shall be mounted on one common steel fabricated base with drip lips and drainage connections at both ends.

3) Enclosed Variable Speed Direct Connected

Each Scru-Peller sludge pump shall be driven by one direct connected enclosed variable speed drive assembly consisting of one electric motor in a belt drive as an integral unit. The motor shall be (open dripproof) (totally enclosed) (explosionproof) _____ HP, 1750 RPM _____ volts, 3 phase, _____ hertz. The output speed range shall be from _____ RPM to _____ RPM. Each drive unit shall include a manual handwheel to vary the speed. The variable speed drive and pump shall be mounted on one common steel fabricated base with drip lips and drainage connections at both ends. A coupling guard shall be mounted on the steel base.

Finish

Pumps, drives and bases shall have one coat of rust inhibitive primer and one shop coat of machinery enamel.

Optional Anchor Bolts

Sleeve type imbedded anchor bolts shall be furnished for securing the pump to the foundation.



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