

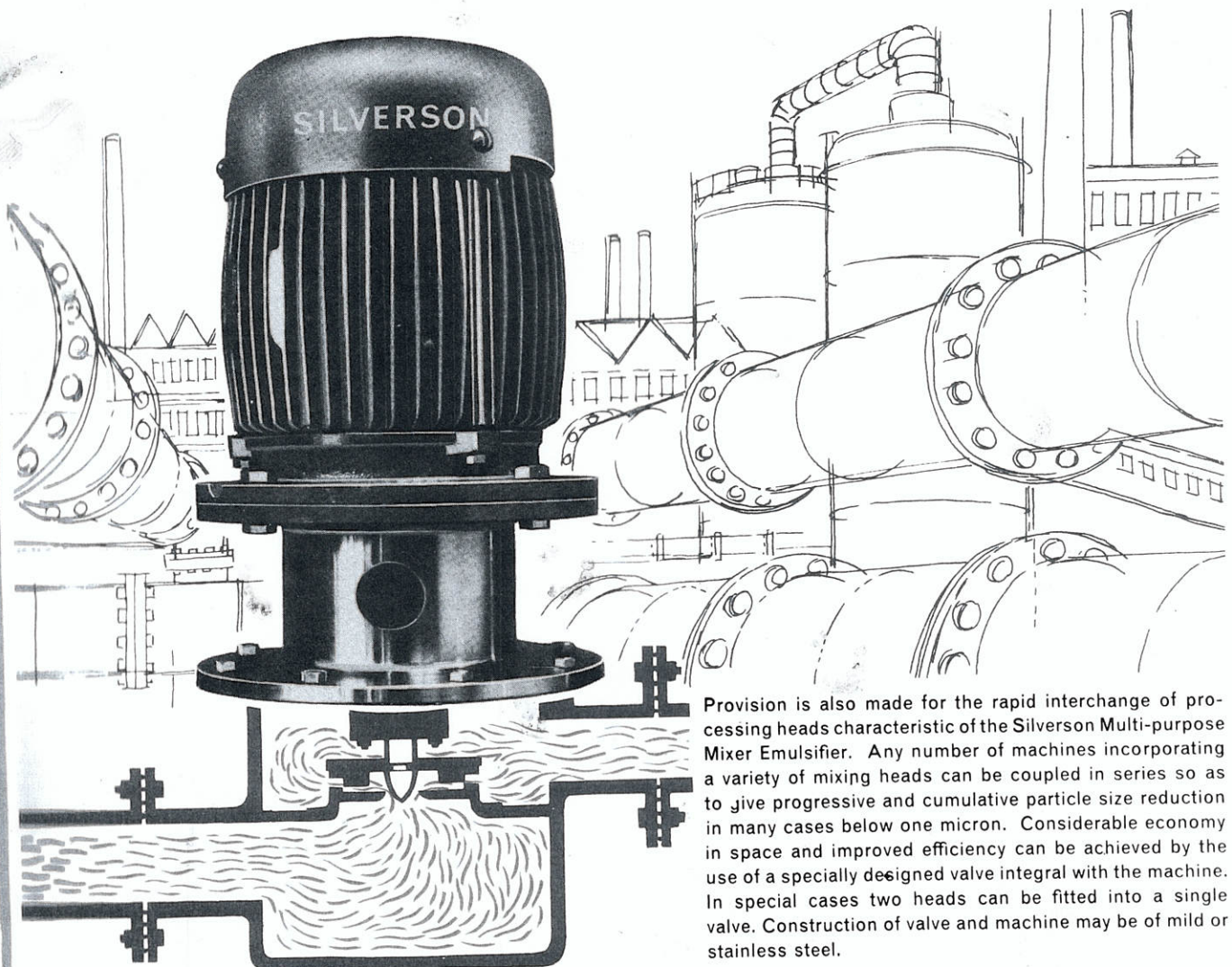
# SILVERSON

## IN-LINE MIXER EMULSIFIERS

The SILVERSON IN-LINE MIXER EMULSIFIER provides for the first time a method of disintegrating solids, reducing agglomerates and producing stable emulsions, suspensions and gels of uniform quality rapidly as a continuous process. It is the only in-line positive mixer which guarantees that every particle of the mix has been processed. A specially designed processing head is incorporated into a valve in the pipeline. The construction is such that before the mix can escape through the outlet port it must pass through the processing head. Inside the head it is subjected to a tremendous mixing action by the high-speed rotation of the blades in the enclosed space. It is then mixed, emulsified or disintegrated by a shearing action against the emulsor mesh or disintegrator head and expelled with great velocity into the outlet port. Uniformity of

product obtainable by no other process is guaranteed by the fact that the whole of the material entering the inlet port must pass through the processing head and be thoroughly processed before passing through the outlet port.

This type of machine is recommended for the large-scale continuous blending, emulsification, disintegration and solution of oils, waxes, resins, bitumen, pitch, dried milk, etc., etc. In addition to positive mixing the machine also produces sufficient pressure to obviate in most cases the need for any additional pumping. A pumping/processing rate of many thousands of gallons per hour is obtainable, the rate of flow depending upon the nature and viscosity of the material, the bore of the pipeline and the size of the machine.



Provision is also made for the rapid interchange of processing heads characteristic of the Silverson Multi-purpose Mixer Emulsifier. Any number of machines incorporating a variety of mixing heads can be coupled in series so as to give progressive and cumulative particle size reduction in many cases below one micron. Considerable economy in space and improved efficiency can be achieved by the use of a specially designed valve integral with the machine. In special cases two heads can be fitted into a single valve. Construction of valve and machine may be of mild or stainless steel.



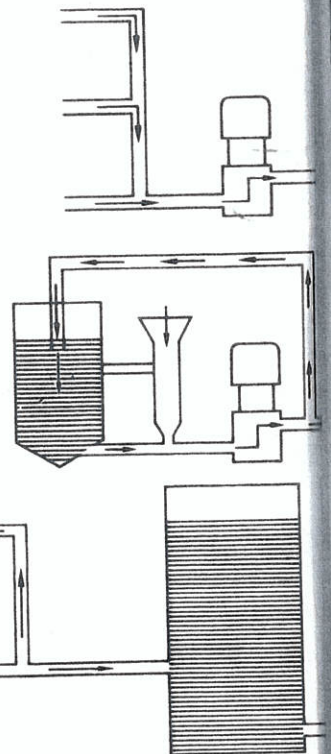


**Silverson Pilot In-Line Mixer Emulsifier**

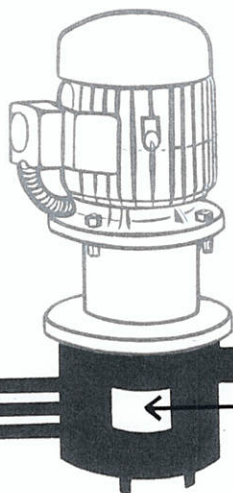
SILVERSON IN-LINE MIXER EMULSIFIERS are in service in virtually every industry engaged in some form of fluid and semi-fluid processing – including effluent disposal. The highly efficient disintegrating action of the machine permits the discharge of industrial effluent directly into the sewage system. The machines carry out virtually every mixing operation – emulsifying, homogenising, suspending, dispersing, solubilising, reduction of agglomerates, disintegrating of animal, vegetable, mineral and any synthetic solid matter, etc., under their own pumping pressure – auxiliary pumping being seldom necessary. Output is dependent upon the nature of the materials. The smallest machine in the range, the laboratory/pilot scale model illustrated on the left which is powered by a half horse power motor will handle up to 870 gallons per hour. A 5 h.p. model attains an output of 4,000 gallons per hour in a mix of low viscosity and when processing is complete any Silverson in-line machine will discharge the material directly to storage, filling machine, etc.

Processes can be carried out either with one pass through or coupled to a suitable vessel on a recirculating basis according to the materials used and type of mixing involved. Two or more machines with different type working heads can be connected in series. Various processing heads for specific mixing tasks are available.

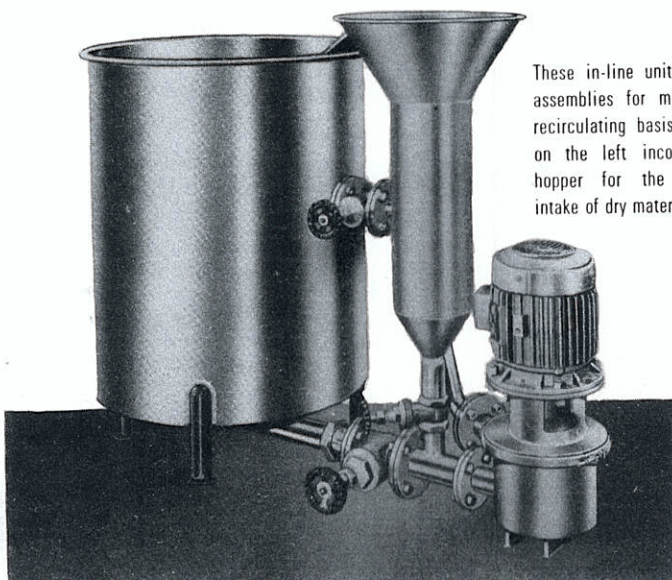
The Silverson In-Line Mixer Emulsifier can be incorporated into a variety of layouts. These illustrations illustrate a few examples. Solid materials can be fed into a separate hopper and fluids can be fed into the machine in a number of different ways. Machines can also be used in series incorporating different processing heads.



A number of streams of liquids can be fed simultaneously or independently into the inlet port or directly into the processing head and will be immediately and perfectly mixed. If suitable metering arrangements are adopted, the finished product is obtained instantly.



Construction is such that before discharge into the outlet port all materials are homogeneously mixed inside the working head.



These in-line units illustrate assemblies for mixing on a recirculating basis. The unit on the left incorporates a hopper for the controlled intake of dry materials.

