Cleveland Equipment

CE-500 Siphon Filler

Operation Manual

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Application

The CE-500 Siphon Filler offers a very economical system for small through medium volume production filling of glass, plastic or metal containers from 2 ounces through I gallon (and up to 2 gallon depending upon the dimensions of the container) of most low viscosity liquids.

Construction

The filler consists of a rectangular trough or tank with a float controlled valve to maintain the uniform level of the liquid in the tank. The filler is mounted on legs for convenient operating height and it is supplied with a bottle holder rack, a drip tray, spouts, a siphon starter and other accessories and fittings as required.

The spouts consist of specially designed tubular goosenecks mounted on brackets which serve as fulcrums; nozzles consisting of double tube assemblies are attached to the goosenecks. The outer tube of the nozzle has a weighted drop or bottle stop which serves as the contact area for the bottle or other container to be filled; when the outer tube is raised by the bottle, it exposes an opening on the inner tube permitting the liquid to flow into the bottle; when the bottle is removed, the weighted drop brings the outer tube down against a valve seat on the inner tube, thereby shutting off the flow before the bottle is completely removed from the spout.

Principle of Operation

The principle underlying the operation of the CE-500 Siphon Filler is the simple, natural one employed when siphoning liquid from one container to another; when the liquid levels in the two containers are balanced, the flow automatically ceases. It is this simple principle that controls the flow from the tank to the bottle. Once adjusted, the height of the bottle holder rack limits the level in the bottle so that there is no danger of overflow should the operator leave the filler unattended.

Operation

The supply for the siphon filler tank may be maintained by gravity feed from a raised storage vessel. When utilizing gravity the supply tank should be at least 3 feet above the siphon filler inlet; total head should not exceed 1 8 feet. Operating from a gravity feed storage vessel is more desirable. The outlet line from the storage tank is attached to the inlet of the siphon filler by means of a permanent pipe connection or with plastic or rubber hose. The bottle rack which is controlled by a screw is adjusted on the float valve so that the liquid in the tank is at the same height as the liquid level desired in the bottle. It is desirable to maintain the liquid level in the siphon filler trough as close to the top as is possible.

To start the flow in the spout, the siphon starter is slipped over the outer tube of the spout and pressed firmly against the weighted drop (bottle stop) on the spout so that the gasket on the starter forms a seal; the stop, in turn, should slide up until it is in contact with the gasket located immediately under the junction of the gooseneck and inner tube. While keeping the starter pressed against the bottle stop the bulb should be compresses and released by hand several times until liquid is drawn from the tube filling both the filling spout and the bulb. With the bulb full, the starter is withdrawn from the nozzle, permitting the outer tube to slide down thereby retaining the liquid in the spout. This same operation is repeated with each of the spouts after which it is not necessary to use the starter bulb again during the filling operation. It is

important that the spouts are filled at all times so that the flow will start immediately as the bottle is placed into position.

The operator should place the bottles on the machine, one under each spout. Usually, by the time last container is placed on the bottle rack, the first is filled. The first container is replaced with an empty one and same procedure continued, resulting in uniform, systematic and speedy filling operations.

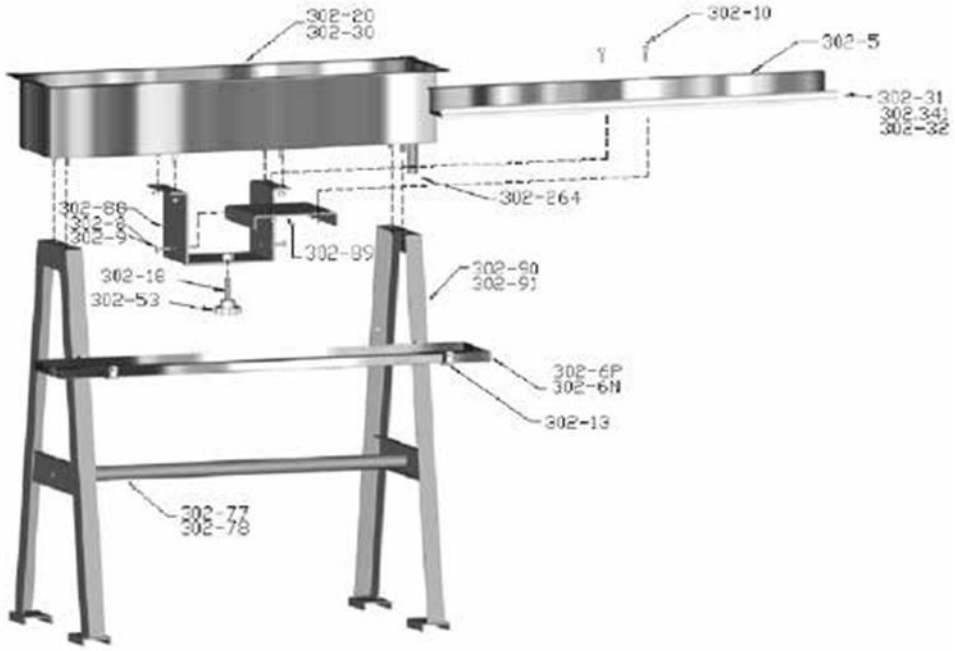
To prevent tubes from sticking and to prevent contamination or corrosion, it is strongly recommended that the filler be carefully cleaned after use. In handling siphon filler spouts, precautions must be taken to avoid bumping or dropping the spouts which may damage to the tubes so that they will not slide easily. The nozzle is attached to the gooseneck by tightening the nut by hand. Neoprene gaskets are used to obtain a leakproof seal. (Teflon and other materials can be supplied for special applications.) Care should be taken so that the gasket is placed uniformly inside of the nut. Be sure it is inserted to the full depth of the nut and lies flat against the seat. CAUTION - WRENCHES OR OTHER TOOLS SHOULD NEVER BE USED ON THE SPOUTS. USE HANDS ONLY WHEN TIGHTENING OR LOOSENING THE NUT WHICH HOLDS THE NOZZLE TO THE GOOSENECK.

Should it become desirable to fill containers in sizes other than those for which the unit was originally purchased, two systems may be used. Additional sets of nozzles are available in various sizes and can be readily interchanged on the gooseneck of the spout assembly, except for shallow container spouts (Part No. 302-325). However, some operators prefer using separate, complete sets of siphon filler spouts in which event it is necessary only to remove one complete spout and substitute another. Smaller spouts may be used for filling larger

containers but nozzles of the largest diameter which will fit the container opening should be used to obtain maximum flow.

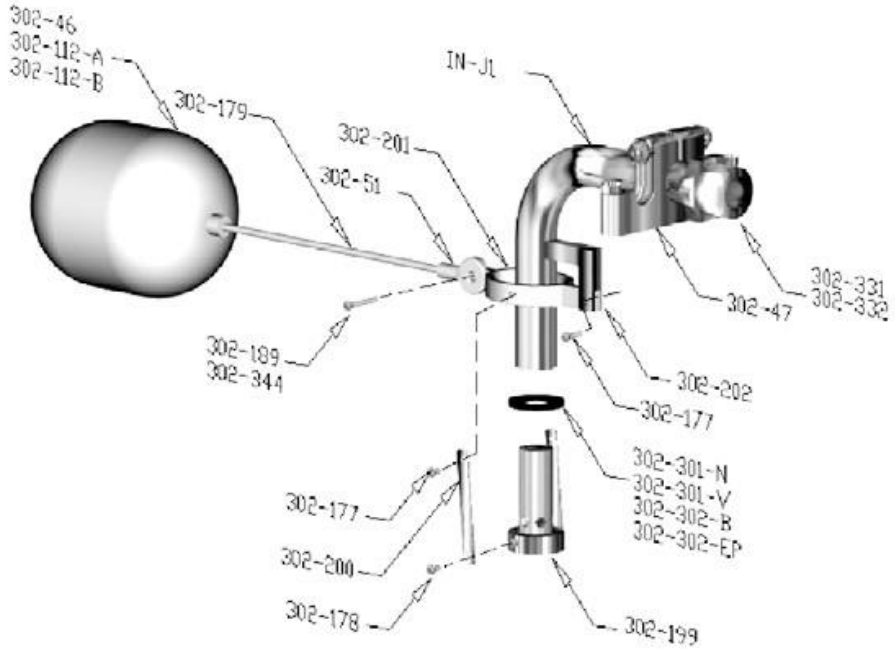
As already noted, proper care must be taken in using and handling of spouts. With good care this equipment will provide excellent service for many years. Forcing bottles onto tubes, dropping the spouts or nozzles, banging the bottles against the tubes, bending the tube, applying the wrenches or other tools to the tubes may cause irreparable damage. Handle the equipment with care for long trouble-free service.

Stand and Tank Assemblies



302-10 ¼-20 Hardware (pair)
302-13 Drip Pan Supports (pair)
302-18 Bottle Rest Threaded Height Adjustment Screw
302-20 Tank, T-316 S.S. (no saddle bar)
302-211-S Hooded Cover with open front T-304 S.S.(not shown)
302-264 Drain Cock
302-3 Saddle Rail with 2 S.S. Screws (not shown)
302-30 Tank, T-304 S.S. (no saddle bar)
302-31 White Hose for Bottle Rest (includes dowel & caps)
302-32 Wood Dowel for Bottle Rest
302-341 End Caps on hose bottle rest
302-5 Bottle Rest Assembly
302-53 Hand Wheel for Height Adjustment Bracket
302-6N Drip Pan, T-316 S.S.
302-6P Drip Pan, T-304 S.S.
302-77 ½-13 Threaded Rod
302-78 Support Pipe
302-8 Hinge Pin
302-88 Bottle Rest Bracket
302-89 Height Adjust Bracket
302-9 Cotter Pin
302-90 Stand – Mild Steel (pair)
302-91 Stand – T-304S.S. (pair)

Float Assembly



302-112-A Float Ball, T-304 S.S.
302-112-B Float Ball, T-316 S.S.
302-177-78 Round Head Machine Screw, T-316 S.S. for inlet valve
302-179 Inlet Float Rod w/ Float Ball Rod
302-189/344 1/4 x 20 Cap Screw & Wing Nut
302-199 Shut-off valve for inlet assembly, T-316 S.S. (2”lg)
302-200 Straps for Shut-off Valve
302-201 Stirrup for Inlet Assembly, T-316 S.S.
302-202 Angle Brackets for Inlet Assembly
302-218 Reducing Hex Nut for Inlet Valve, T-316 S.S
302-265 1” Ball Valve for Inlet, T-316 S.S.
302-301-N Inlet Valve Gasket, Neoprene
302-301-V Inlet Valve Gasket, Viton
302-302-B Inlet Valve Gasket, Buna-N
302-302EP Inlet Valve Gasket, EPDM (for use with acetone)
302-331 Sanitary (Acme) Inlet Ferrule,T-316 S.S.
302-332 Sanitary (clamp on) Inlet Ferrule,
302-46 Float Ball, Polypropylene
302-47 Inlet Tube Holder
302-70 Inlet Valve Mount Support (not shown)
IN-J-1A Inlet Subassembly,
T-316 S.S. Float Valve Assembly,
T-304 S.S. Float Ball
IN-J-2 Inlet Subassembly,
T-316 S.S. Float Valve Assembly,
T-316 S.S. Float Ball
IN-J1 Inlet Subassembly,
T-316 S.S. Float Valve Assembly,
Polypropylene Float Ball302-112-A Float Ball, T-304 S.S.
302-112-B Float Ball, T-316 S.S.
302-177-78 Round Head Machine Screw, T-316 S.S. for inlet valve
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Float Assembly Continued

302-331 Sanitary (Acme) Inlet Ferrule,T-316 S.S.
302-332 Sanitary (clamp on) Inlet Ferrule,
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302-47 Inlet Tube Holder
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IN-J-1A Inlet Subassembly,
T-316 S.S. Float Valve Assembly,
T-304 S.S. Float Ball
IN-J-2 Inlet Subassembly,
T-316 S.S. Float Valve Assembly,
T-316 S.S. Float Ball
IN-J1 Inlet Subassembly,
T-316 S.S. Float Valve Assembly,
Polypropylene Float Ball

Spout Assembly Tightening Instructions

To tighten nozzle put a pencil through the holes at the tip of the nozzle and turn. Pencil will break before gasket is cut or tube is damaged.(USE pencil only)