

Technical News Bulletin

December 2011

Emhart Glass Repair and Maintenance Services



Emhart Glass offers the world's most comprehensive product portfolio to the glass container industry, and this service extends long after the equipment has been supplied and taken into operation, over its entire lifetime. The severe environment and 24-hour operations encountered in glass container production inevitably lead to equipment wear, and this in turn creates a demand for maintenance, which can include repair of components, mechanisms and the entire machine after a certain time in operation.

To support our customers' installed equipment around the world, Emhart Glass offers a complete range of repair services to suit individual customer circumstances, in order to maintain the low operating costs which are achievable with our equipment.

The Repair Categories:

| Repair Category | Material | Labour | Location | Typical Items | Emhart Glass Contact |
|-------------------------|--------------|---|-----------------------|--|--|
| On-Site Repair | Emhart Glass | Emhart Glass Customer 3 rd parts | Customer plant | Section Exchange, Machine Upgrade | Account Manager |
| Repair Service | Emhart Glass | Emhart Glass | Emhart Glass facility | Gob Forming/ Section Mechanisms, Components (Motors, Valves, etc.) | Account Manager/ Customer Contact Parts CCP |
| Repair/Maintenance Kits | Emhart Glass | Customer | Customer plant | Mechanisms, Accessories | Customer Contact Parts CCP |
| New Replacement Part | Emhart Glass | Customer | Customer plant | All Items | Customer Contact Parts CCP |

On-Site Repair

This service supports the customer with major repair activities which involve section exchanges and major overhaul of mechanisms. Your Emhart Glass account manager is the primary contact to initiate these types of projects. If desired, an audit can be carried out by Emhart Glass service experts in order to assess the viability of this type of repair.

Repair Service

For many Gob Forming and Section Mechanisms as well as components, we offer individual repairs of the customer's own items in our facilities. This repair service is carried out by experienced manufacturing personnel, and covers a wide range of our products, from individual valves and motors up to complete gob forming and section mechanisms.

Quotations for own-material repairs can be supplied by your local Emhart Glass representative.

For frequently requested items, Emhart Glass may establish a pool of repaired items for exchange with the customer's own material, thus minimizing machine downtime. This step will depend on the demand for this service on an item base. Repair/Maintenance Kits (See also Technical News Bulletin 187)

Each Repair and Maintenance Kit has been designed to provide the customer's workshop with all the items required to refurbish a specific mechanism or accessory item. By ordering just one kit (instead of several individual parts), workshop personnel are assured of having exactly the right material to efficiently carry out maintenance and repair work, thus ensuring that the repaired item meets quality specifications. Each kit comes packed individually, together with an assembly drawing and an item list, at a lower price than purchasing the parts individually.

Two classes of kits can be ordered from your local Emhart Glass representative:

Maintenance Kits (B-Kits) include consumable items such as seals, bushings, rings, screws, washers, and springs, which should be replaced after about 2 years' operation, or during any disassembly of the mechanism for cleaning or other purposes.

Repair Kits (C-Kits) include the items from a B-Kit, plus all other items which are required to return equipment to its as-new condition after about 5-8 years' operation."

New Replacement Parts

All items contained in equipment supplied by Emhart Glass can also be supplied separately as loose parts, thus enabling the customer to replace specific worn or damaged items at any time.

Replacement parts can be ordered from your local Emhart Glass representative.

Why repair?

As a consequence of the state-of-art machining equipment and advanced hardening technologies utilized by Emhart Glass, the operating life of many components can now far exceed that in the past. Furthermore, intelligent control systems can protect mechanisms from damage.

However this does not mean that maintenance can be neglected. Even if the machine continues to run into its old age, inevitably tolerances will be exceeded and production rates, downtime and pack rates will suffer.

Taken together, these production losses will exceed the cost of maintaining equipment before it fails.

Worn pneumatic parts cause substantial leakage, resulting in increased energy costs. Properly maintained equipment can significantly reduce this wastage, making an additional contribution to the positive return on investing in maintenance and repairs.

To preserve the optimum cost-per-container standards, it is essential that equipment be maintained on a regular basis.

Why use original Emhart Glass parts?

Nobody knows our equipment better than the people who designed and built it. In addition to their advanced experience and training, they will always use original Emhart Glass material, which has been specified and produced precisely for the job it has to perform. This includes providing the correct material, precise tolerances and required degree of hardening, all of which are necessary to ensure proper operations and durability. We have the proper tools, jigs and fixtures, and offer a **12-month warranty** on all our in-house repaired items

Items not suitable for repair

Of course, some equipment cannot be practically and safely repaired on technical grounds – for example damaged cables. In other cases, the resources required to disassemble, clean, assess, repair, re-assemble and test the equipment may be out of proportion to the cost of a new item.

Your local Emhart Glass representative will be pleased to offer advice on the suitability for repair of your specific equipment.