Visual Index

Fitting Instructions:

The life of a rotary fitting depends considerably in a stress-free line connection. Therefore, the direct connection with tube is to be avoided. For connection to hoses, the use of swivel nut fittings is recommended with short, straight lines (approx. length 5x hose O.D.). Thus, shocks and vibrations can be absorbed.

Non-Return Valves

Characteristics: Sealing is achieved by using a 90° cone with a packing washer of synthetic material. Valve has a lift stop which provides safe free outlet, shock-absorbing, muffled opening and no reduction of cross section. Maximum flow velocity not more than 8 m/sec (for higher flow velocities special tests are required).

Opening Pressure: Approximately 1 bar standard (on request also 0.2, 0.5, 2, 3, 4, 5 & 6 bar are available). Please specify nonstandard opening pressures on order as follows: Tube Fitting part number, opening pressure, material. Ex: RHD12L2BCF is a RHD12LCF with 2 bar opening pressure. Tolerance of (cracking) pressure is ±20%.

Tube Recommendations

For steel fittings:

Seamless cold drawn steel tubes made from material St. 35.4 or from conditioned base material St. 37.4 in accordance with DIN 1630, state of delivery NBK (normal annealed) with tube outer and inner diameter tolerances in accordance with DIN 2391/ISO 3304. Max. hardness: HRB 75.

For stainless steel fittings:
Material no. 1.4571 and 1.4541

Seamless drawn tubes made from austenitic, stainless steel materials no. 1.4571 and 1.4541, in accordance with DIN/EN/ISO 1127. Max. hardness: HRB 90.

These tubes are particularly recommended for tube fittings, since the tube outer diameter and wall thickness, tolerances correspond to those of steel tubes in accordance with DIN 2391/ISO 3304.

For brass fittings:

Seamless drawn copper tube made from material with short code SF-Cu F37 in accordance with DIN 1786.

Tube wall thicknesses:

In order to determine the necesary tube wall thicknesses for applications, refer to the calculated pressures provided in the tables for EO metric tubing. The calculated pressures DIN 2413-I are for static and DIN 2413-III for dynamic loads.

The maximum wall thickness is based on the pressure holding capacity of the fitting. In some cases, the wall thickness of the tube might be too thin for reliable service and an insert must be used to prevent excessive tube collapse. See assembly section for recommended tube wall thicknesses.

Plastic tube:

EO fittings are suitable for use with various types of plastic tubes such as nylon, polyethylene, etc. When used with plastic tube, an insert (see page F15) must be used to prevent tube pull out due to tensile loading.

Features, Advantages & Benefits

- **Visible Bite —** The critical front bite of the progressive ring is clearly visible to tube fitters & inspectors. The presence of the recommended bite virtually eliminates any risk of catastrophic blow-off. This is a very important safety feature.
- **Sealing Capability —** EO fittings have demonstrated a remarkable ability to remain leak free under various service conditions ranging from sealing high vacuum and small molecules gases to high pressure hydraulic fluids.
- **Distributed Stresses —** Stresses due to service flexural loading are distributed at several points in the joint, thus stress concentration in the bite is minimized.
- **Vibration Control —** The rear bevel of the ferrule firmly grips tubing, thus dampening the effects of system vibration in the joint.
- **Progressive Ring Design —** The progressive ring design provides a second bite for improved reliability and higher working pressure capability. This design also decreases the risk of improper assembly because of the sharp, high torque rise which occurs when the fitting is properly tightened.
- **Envelope Size —** EO fittings are relatively small and compact, making it a suitable selection for plumbing in limited or tight space.
- **Temperature Rating —** EO fittings are suitable for sub-zero through elevated temperature applications. Service temperature rating is limited by the material chosen.
- **Compatibility —** Since EO fittings can be manufactured from a wide range of metals, its compatibility factor with various fluids and atmospheric conditions is virtually limitless. One simply has to select and specify EO fittings from an acceptable material that best satisfies the service conditions.
- **Tube Wall —** EO fittings are suitable for use with light wall, medium wall, heavy wall, and extra heavy wall tubing. (Light wall tube may require support sleeve (VH), as shown in Assembly/Installation Section.)
- **Re-Usability / Remakeability —** Joints can be disassembled and reassembled many times to facilitate system maintenance. This reduces the labor and material costs that would otherwise result from tube and fittings replacement.
- **Assembly —** No expensive, complicated tooling is necessary to assemble EO fittings. Assembly is simple when the procedures described in the Assembly / Installation section are followed (see pages T28 - T33).
- **Materials —** EO fittings can be manufactured from almost any metallic material. The more popular materials currently used for EO fittings are: stainless steel, carbon steel, and brass. On request, the Tube Fitting Division will machine EO fittings from other appropriate material specified by users.
- **Manufacture —** EO fittings are manufactured under tight quality control which ensures that the product routinely satisfies or surpasses the requirements of the pertinent industrial standards.
- **World Wide Popularity —** The bite type fitting design has worldwide acceptance and is especially popular in Europe.