MAG TOOL
HOT & COLD FORMING

Product Flyer
Tube expander TES97 2/1

1) Tube Expander TES97 2/1 overview

2) General information

One of the fastest and most economical way to fixes tubes in a plate or a flange and to prepare for the welding is the application with the Tube Expander TES97.

The Tube Expander TES97 consists of a hydraulic unit, two hydraulic hoses and the expanding cylinder.

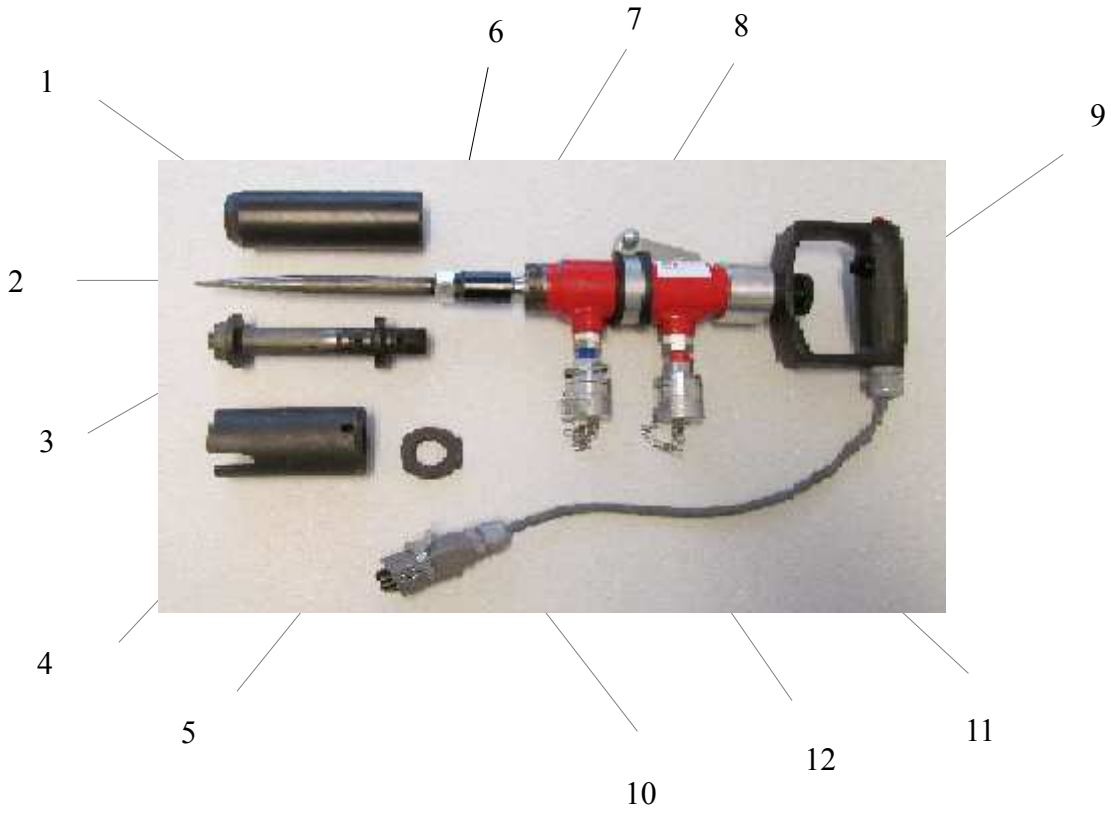
The hydraulic unit is controlled by a control block, which presets the set shut-off point via pressure or stop and the pressure adjustment valve.

In the case of thin-walled pipe bottoms in apparatus engineering, it is of great advantage - to prepare conical connections or to expand them in preparation for welds. This is especially true for the welding / widening combination, since the widening primarily takes over the function of the "application" of the tube in the tube.

The TES 97 has been developed to be able to carry out tube work with a very handy and mobile device for the preparation of welds, in particular thin-walled tubes (for example, in condenser construction).

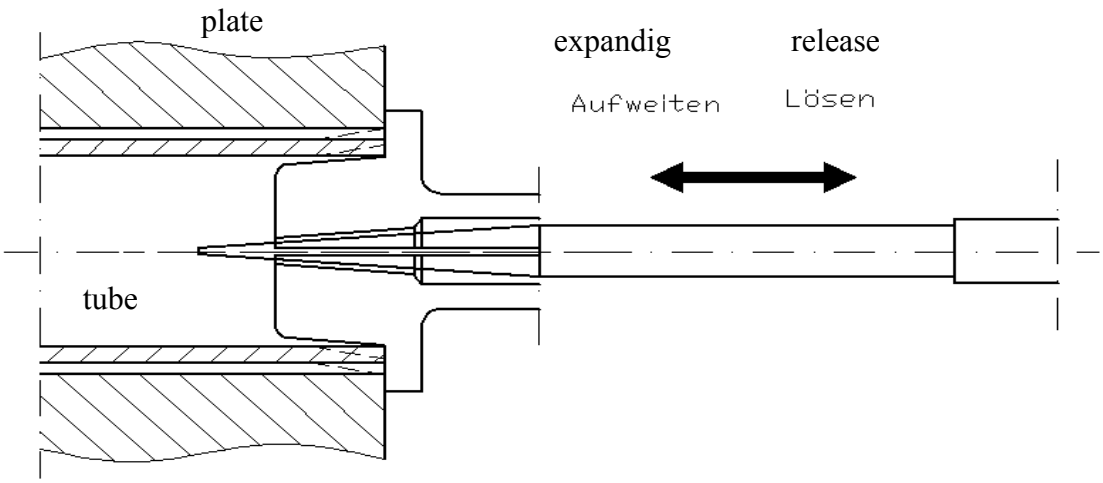
Depending on the different tool design, the tube guide, tube residue and tube flush can be manufactured with the TES 97. In particular, the extremely low weights allow flexible and fatigue-free working.

3) Expanding cylinder overview



1) Expanding sleeve receptacle
2) Expanding mandrel
3) Expanding sleeve
4) Spacer sleeve
5) Lock nut expansion sleeve
6) Locknut expansion mandrel
7) mandrel receptacle
8) Suspension device
9) Handle
10) Connection cable
11) Pressure line feed
12) Pressure line return

4) Functional principle - expansion (fixation of pipe)



The expanding cylinder is acted upon by the hydraulic unit by means of oil pressure, and the piston of the spreader cylinder moves out.
The expansion mandrel is fastened to the piston (push rod) by means of the expansion mandrel receiver.
As a result of the thrust movement of the expanding mandrel, the expansion sleeve is pressed and thereby widens the tube until a plastic deformation is achieved.

The widening (fixing) can take place in two ways (1st setting Is common):

1. The spreader cylinder is regulated and switched off via the set pressure. This is set at the pressure control valve.
In doing so, the tolerances of the bore are bridged and there is always one Uniform fastening in the bore.

2. The spreader cylinder moves to the stop. The pressure is set above the required value. The piston moves out to its maximum position. The spreading sleeve is now turned so far that the required diameter is reached at the spreading sleeve. The tolerances of the bore are not compensated for.
The outer diameter is always the same.

The tube is now fixed in the bore and it may be e.g. Start welding.
The advantage of this method is that the tube is centered in the bore and When applied e.g. The pipe is uniformly deformed and a very high quality connection is produced.

4) Hydraulic aggregat

MOD. FPH9-ME2-10-HTW-AO

Technical specifications:

- Three-phase motor 1,1 KS, 2 polig 220/380V
- Power connection 400V / 50Hz
- Axial piston pump mod. FPT9
- Flow rate 7,5 l/min 0-80 bar and 0,8 l/min 80-700 bar
- Oil tank 10 Liter
- Time relay for automatic shutdown
- Hydraulic oil recommendation : ISO 32
- Weight incl. Oil: 51 kg
- Max. nois level: 81 dBA