FORGING MACHINE
ESA-10R

MESKO Spółka Akcyjna
122 Legionów St.
26-111 Skarżysko-Kamienna
POLAND
info@mesko.com.pl
mesko.com.pl

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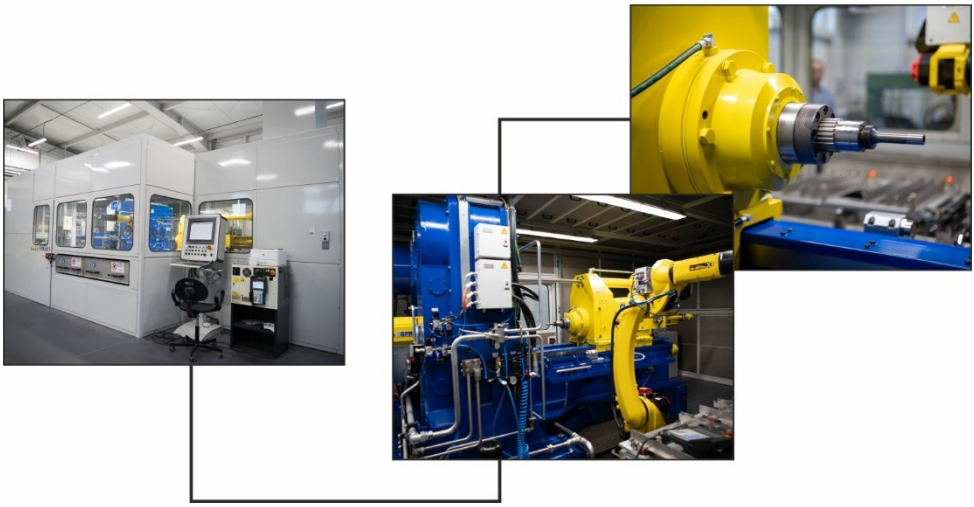

Purpose:

The forging device enables cold forging and work with additional equipment in fully automatic mode (Fig. no 1). The blanks are placed manually on the loading table on the head side, from where, with the help of a robot arm, they are picked up and inserted into the forging axis. The forging piece is secured between the steady rest and the head holder. The clamping force is programmed according to the requirements of the forging process.

The forging hammers and workpiece are cooled by coolant (water with anti-corrosion additive) during the forging operation, which eliminates unintentional heating of the component. The pre-forging is forged according to a pre-selected program. Once the forging is complete, the workpiece returns to the unloading position with the help of a robot.

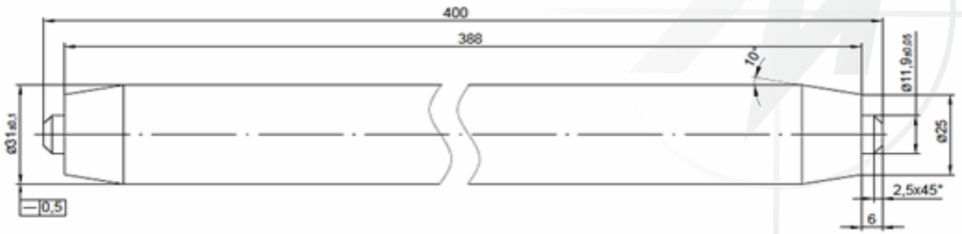

Fig. no 1

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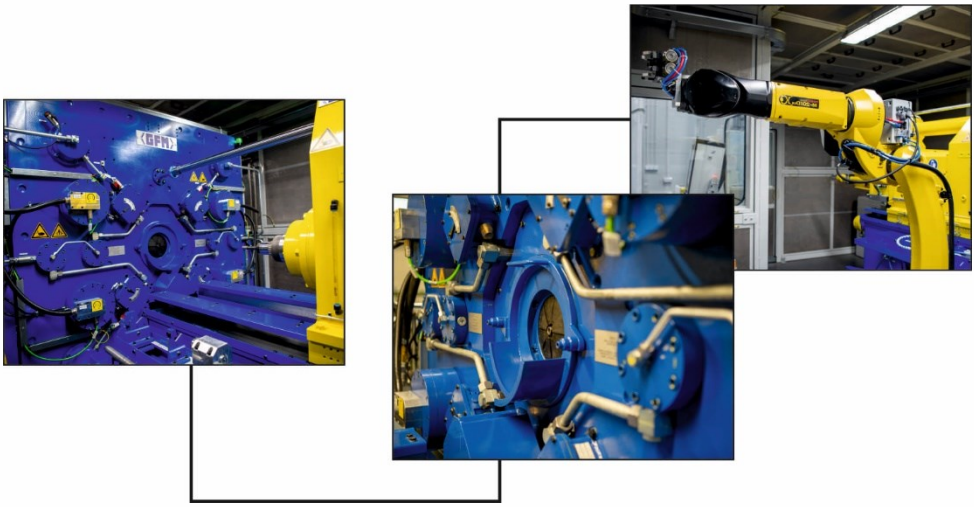

Parameters of the machine according to the Technical and Operational Documentation:

a) Number of forging hammers: 4;
b) Max. forging force: 1800kN;
c) Max. blank diameter: Ø 40 mm;
d) Initial blank length min./max.: approx. 150/650 mm;
e) Final blank length max.: approx. 900 mm;
f) Number of forging strokes, approx. 1200 /min;
g) Infinitely variable feed rate of the head: 2÷450 mm/s (feed speed range of forged bars – infinitely adjustable);
h) Linear speed of forging during forging process: 2-6mm/s;
i) Hammer feed rate (diameter adjustment) infinitely variable: 0.1÷16 mm/s;
j) Rotational speed of the forging during the forging process (infinitely variable): 30 rpm;
k) Speed range of forging during the process (infinitely adjustable): 30÷60 rpm;
l) Workpiece weight max.: 10kg;
m) Tolerances:
    - Chuck head positioning accuracy: ±0,15 mm
    - Hammer adjustment positioning accuracy: ±0,025 mm
n) Diameter blank accuracy: 0,2 mm;
o) Acceptable blank straightness over its entire length, max: 0,6mm.

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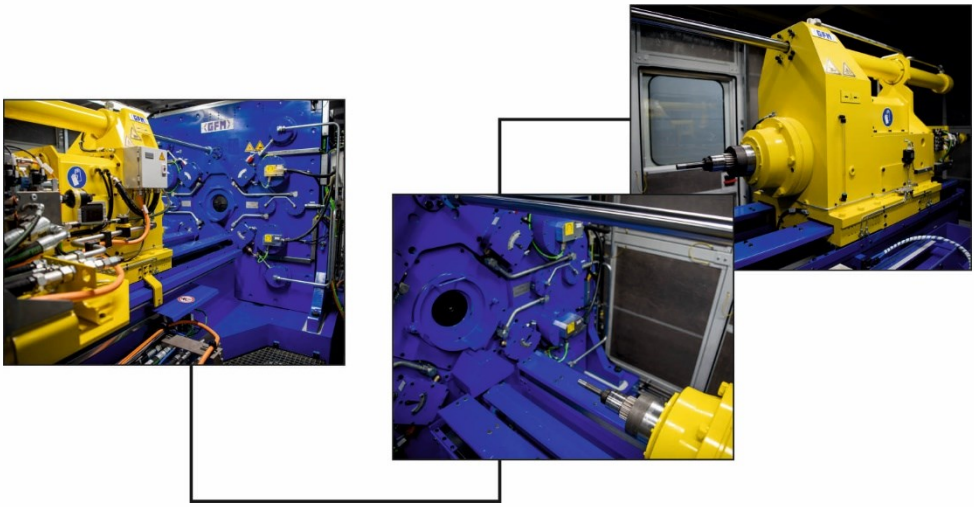

Capabilities of the machine including tooling:

a) Max. initial diameter of forging: Ø31 mm;
b) Min. initial diameter of forging: Ø18 mm;
c) Initial length of forging min/max: approx. 150/500 mm;
d) Max end length of forging: approx. 700 mm.

Advantages of ESA-10R Forging Machine

a) Excellent surface and straightness;
b) High efficiency;
c) Achieving high degrees of forging;
d) High forging accuracy (possibility of using small machining allowances in the case of finished forging);
e) Low deformation speed, which allows for processing a wide range of steel grades;
f) High level of process automation;
g) High reliability and repeatability of the forging process.