



Euro Forming Services GmbH

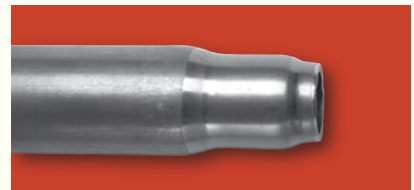
## SHAPING YOUR FUTURE



UPSETTING



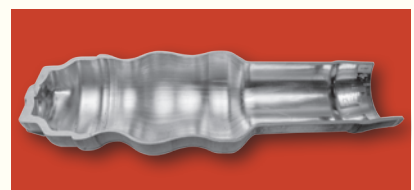
FORGING /  
ROTARY SWAGING (cold & warm)



REDUCING / EXPANDING



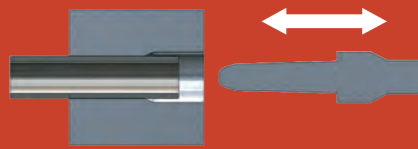
FLOW FORMING



HEATforming™



# 1 UPSETTING



- Advantages of the upsetting technology
- Weight reduction resulting from optimised distribution of wall thickness.
  - Near net-shape metalforming
  - Saving in material
  - Safety: increased strength due to more homogenous grain structure



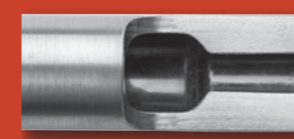
CAM SHAFTS



CAR AXLE SHAFTS



STABILIZER BARS

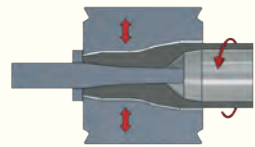


STABILIZER BARS

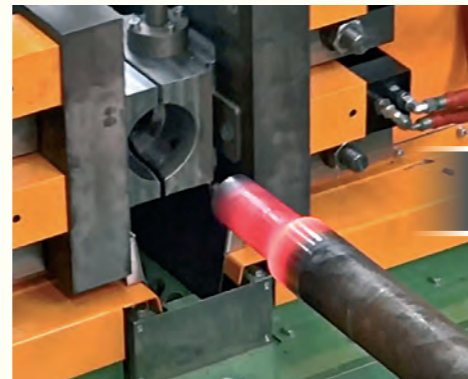


- Examples of application
- Cam shafts / tubes
  - Drill pipes
  - Drive shafts
  - Steering columns / steering shafts
  - Steering racks
  - Gearbox shafts
  - Rear axle shafts
  - Stabilizer bars
  - Pressure vessels
  - Tubes for the furniture industry

# 2 FORGING / ROTARY SWAGING (COLD & WARM)



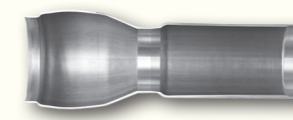
- Advantages of the forging / rotary swaging technology
- Weight reduction (optimised wall thickness distribution)
  - Material saving
  - Near net-shape production
  - Assemblies replaced by parts made as single piece components
  - Optimum grain structure



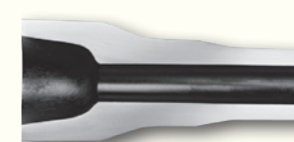
TRAILER AXLES



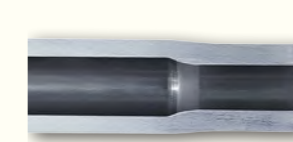
AIR SUSPENSION PISTONS



TRAILER AXLES

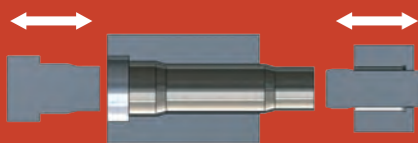


STABILIZER BARS



- Examples of application
- Drive axles
  - Drive shafts
  - Stabilizer Bars
  - Shock absorber tubes
  - Cam shafts
  - Air suspension pistons
  - Drill pipes
  - Gas pressure vessels
  - Lamp posts
  - Tubes for the furniture industry

# 3 REDUCING / EXPANDING



- Advantages of the reducing / expanding technology
- Cost reducing production method
  - Short cycle times
  - Low concentricities
  - Increased strength of the material in the deformed area
  - Very precise surface roughness



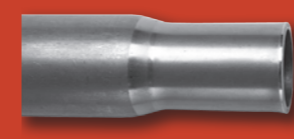
SPLINE SHAFTS



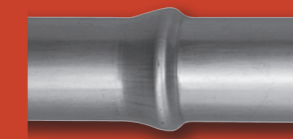
AIR BAG PRESSURE VESSELS



STEERING COLUMNS

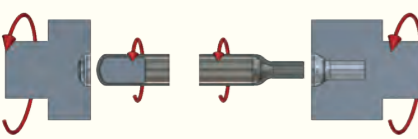


SHOCK ABSORBER TUBES



- Examples of application
- Air bag pressure vessels
  - Oil / gas casings
  - Shock absorber tubes
  - Servo steering cylinders
  - Chassis components
  - Steering columns
  - Transmission shafts
  - Spline shafts

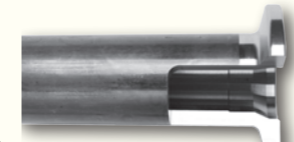
# 4 FLOW FORMING



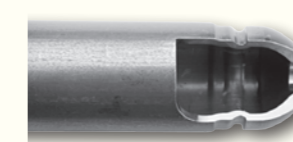
- Advantages of the flow forming technology
- Cost reduction
  - Assemblies replaced by parts made as single piece components
  - Reduced machining times – increased productivity
  - 100% gas tight closure
  - Optimum grain structure
  - Elimination of welding seams



GEAR FLANGES



AIR BAG PRESSURE VESSELS



SHOCK ABSORBER TUBES



CONVEYOR ROLLERS



- Examples of application
- Gas pressure vessels
  - Air bag pressure vessels
  - Shock absorber tubes
  - Gas springs
  - Gear flanges (sun gear shafts)
  - Gearbox shafts
  - Conveyor rollers
  - Printing rolls

# 5 HEATforming™



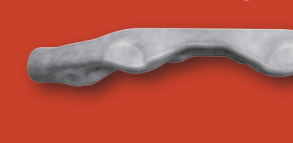
- Advantages of the HEATforming™ technology
- High forming ratios result in design freedom
  - Sharp-edged moulding possibilities (small radii)
  - Partial forming possible
  - Forming of thick-walled hollow parts
  - High precision level reduces subsequent machining
  - Applicable to most metal alloys



CAR BODY PARTS



FRAME MEMBERS



AIR INTAKE TUBES



HANDLES



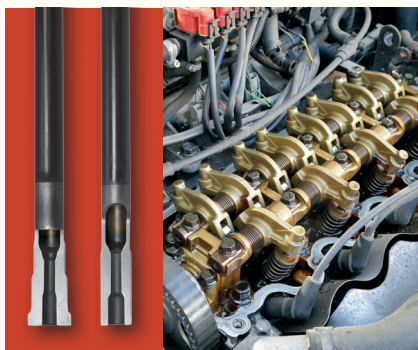
- Examples of application
- Air spring pistons
  - Frame members, connection joints
  - Roll-over bars
  - Air intake tubes
  - Floor heating distributors
  - Handles
  - Telescope housings
  - Door handles
  - Frame rails and cradles





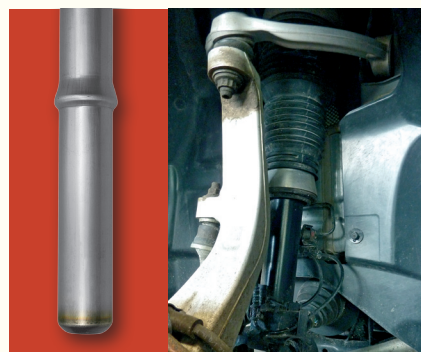
Euro Forming Services GmbH

A SINGLE SOURCE SOLUTION



## MANUFACTURING TECHNOLOGIES

In addition to our own tool shop we can also process the formed semi-finished products into ready-to-install components. For this we have an extensive machine park with modern turning and milling machines and the possibility of 3D measurement as well.



Founded in 1999 Euro Forming Services GmbH is the specialist in chipless transforming. Our profession is the middle- and large-batch production. Besides the automotive and components industry our scope of supply also captures parts for drilling applications (gas- and oilfield) and agriculture parts. Our head quar-

ter and the main production is placed in Bitburg/Germany. An other EFS production site is located in Heiligenkreuz/Austria. Specializing, the high graded quality awareness (international certified according to IATF 16949) and flexibility in thinking and acting makes EFS your capable and reliable partner

for solving sophisticated, innovative technical requirements. Another example for this is the implementation of a JIS (Just in Sequence) logistics concept to supply a well-known OEM. Based on this philosophy our partners honored us as "supplier of the year".



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