Open Die (Press) Forged Steel Forgings

- **Workmanship:**
  
  open die rough (black, free issue) forgings

  semi (rough) machined forgings with material allowance for final machining which can be adjusted as per customers requirements, surface roughness Ra=6,5

  rough machined and flame-cut forgings with allowance 5mm/ surface or as per customer requirement

- **Commonly used material types:**

  EN Norms:

  steel per EN 10083 - 1,2
  C- Mn steels per EN 10025+A1
  alloyed steels for refinement per EN 10083-1,3
  alloyed steels for cementation per EN 10084
  alloyed steels fornitridation per EN 10085
  stainless steels per EN 10088-1,3

  and ASTM and GOST norms or their deviations as per customer requirements.

- **Commonly applied heat treatment:**

  soft annealing
  normalization (also with tempering)
  quenching (oil/water) (max. length 2800 mm) (also with tempering)
  solution annealing
  stress relieving annealing

- **Commonly applied testing:**

  Brinell hardness testing
  Testing of mechanical properties by low and high temperatures
  metallography
  defectoscopy
  visual testing, dimensional testing
  UT testing per EN 10228-3 (up to level 4)
  MT testing per EN 10228-1 (up to level 4)
**Longitudinal Forgings**
(bars, stepped shafts, throughput shafts, combined shafts...)

Max. D: 540mm  
Max. L: 3500mm  
Max. H of flame-cuts 300mm  
Max. weight: 2800kg

**Flange Shafts**

Max. D: 1300mm  
Max. L: 1700mm  
Max. weight: 2800kg

**Rings**

Max. D: 1500mm  
Max. d: 1350mm  
Max. H: 500mm  
Max. weight: 2500kg  
Min. D: 350mm  
Min. d: 250mm  
Min. H: 100mm  
Min. weight: 40kg

**Discs**

Max. D: 1300mm  
Max. H: 500mm  
Max. weight: 2500kg  
Min. D: 300mm  
Min. H: 100mm  
Min. weight: 60kg  
Punching Range d: 80mm - 250mm (or without punching)
**Crankshafts**
(1 x cranked, 2 x cranked, 3 x cranked)

Max. L: 3500mm  
Max. weight: 2800kg

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**Flame-cut Connecting Rods**

Max. H: 300mm  
Max. weight: 2800kg