

# Fox Valley Forge



## Press forging advantages over upset forging

### *Upset forging:*

- Utilize split die impressions to allow for bar end forging.
- Good for long shapes where only one end is forged (axles, bolts, etc.)
- Cannot forge entire part unless a second operation is added.
- Bar end forging requires bar end heating
- Usually performed in gas-fired slot furnace for maximum flexibility
- The time required to heat a steel bar in a gas-fired furnace creates surface scale
- Even with the best descaling equipment, some scale is impacted during forging
- Impacted scale creates scale pits and potential machining problems
- Extra stock is normally designed into the forging to compensate for scale
- Upsetter split dies create parting line flash that must be ground off
- Some ovality is designed into the parts to prevent bars from sticking in split dies
- Ovality / parting line flash (even after grinding) may create machining problems

### *Press forging:*

- Solid dies – no parting line flash or ovality
- Electric induction heating – quick heating – no surface scale
- Forge entire billet – no bar-end forging – forward extrusion possible
- Hot work 100% of forging for near net shapes
- Near net reduces weight – lower costs for steel, heat treatment, shipping
- Near net and clean surfaces facilitate machining operations