

Press-Formed PINION GEAR



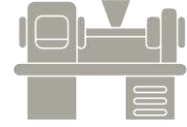
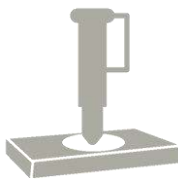
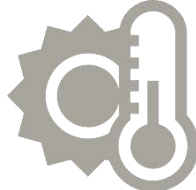
Reduction of tooth surface machining by **one-shot press forming**

Patented



Benefits of Application

- Material yield rate: **48% → 64%**
- Reduction of process due to the abolition of gear cutting processing and gear surface finishing process:
8 Processes → 6 Processes
- Reduction of industrial waste:
Phosphate coating → **Single liquid processing**

Process	Rough material 	Lubrication treatment 	Material molding 	Lubrication & release 	Gear cutting processing 	Finishing process1 	Heat treatment 	Finishing process2 
Conventional	Round rod cutting	Phosphate coating	Hot forging / Cutting processing	Acid cleaning	Hob processing/ Gear shaving processing	End face / Gear tooth surface finishing / Deburring	Carburizing treatment	Outer & inner diameter / End face / Gear tooth surface / Grinding process
Development	↑	Single liquid processing	One shot press forming (Cold forging)			End face / Chamfer / Deburring	↑	Inner diameter / End face