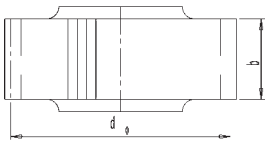
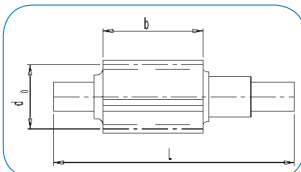
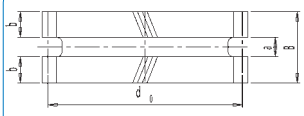
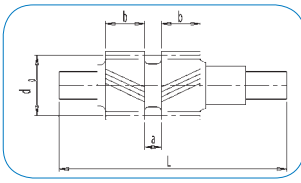
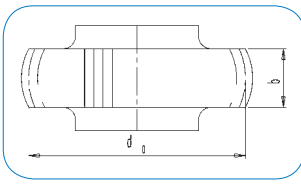
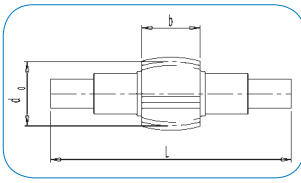
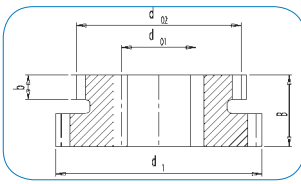
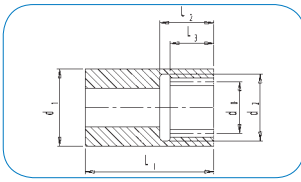
FLENDER
SERVICE

Job Work

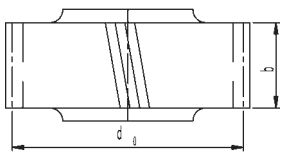
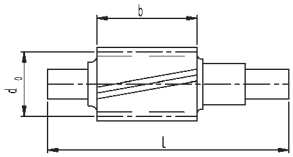
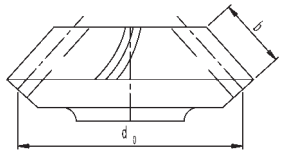
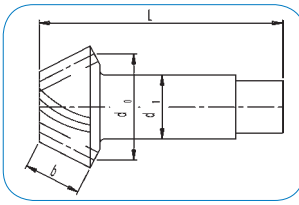
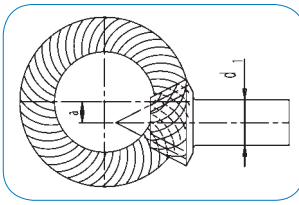
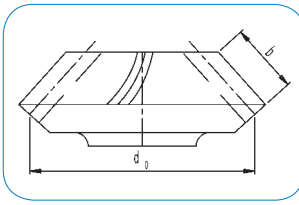
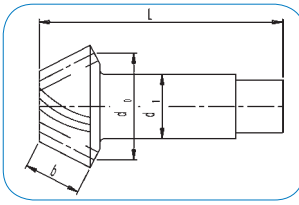
Work Program and Manufacturing Outline

Hobbing and Shaping by the Generating Process

		Manufacturing method	Pitch circle dia. d_0	Sizes	Module m_n
1		Hobbing Spur and helical gears	20 - 1750 mm*)	b = 580 mm	1.5 - 24*
2		Hobbing Spur and helical gears of pinion shafts	20 mm and above*)	b = 580 mm L = appr. 2000 mm*) ab = 2000 mm	1.5 - 24*
3		Hobbing Double helical gears Size of gap „a" equal to 8 - 10 times module	20 - 1750 mm*)	b = 580 mm + a	1.5 - 24*
4		Hobbing Double helical gears Size of gap „a" equal to 8 - 10 times module	20 mm and above*)	b = 580 mm L = appr. 2000 mm*) ab = 2000 mm	1.5 - 24*
5		Hobbing Crowned gears	20 - 1750 mm	upon request	1.5 - 16*
6		Hobbing Crowned gears	20 - 1750 mm	upon request	1.5 - 16*
7		Shaping Internal and external spur gears	up to 1000 mm external 1000 mm internal 700 mm	b = 210 mm B = 380 mm	DIN 867 1 to 10 DIN 5480 1 to 10
8		Shaping Internal and external spur gears	upon request	upon request	DIN 867 1 to 10 DIN 5480 2 to 10

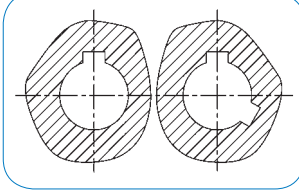
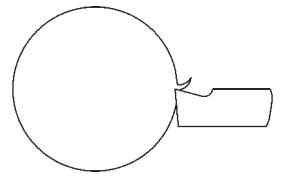
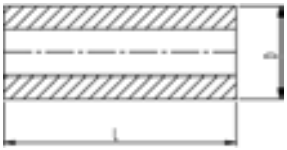
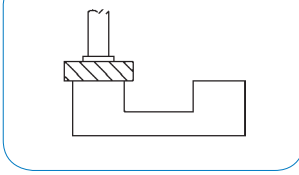
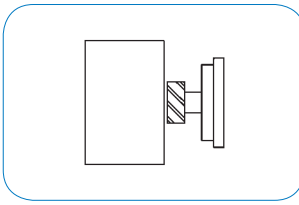
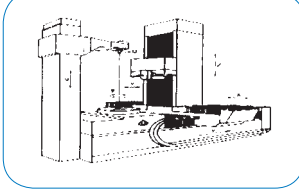
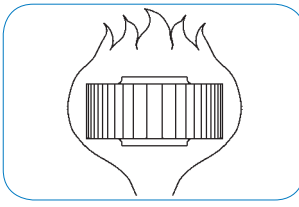
*) upon request

Tooth flank grinding, Klingelnberg Spiral Gearing

		Manufacturing method	Pitch circle dia. d_0	Sizes	Module m_n
1		Tooth flank grinding Spur and helical gears	25 - 1450 mm	b = 720 mm	1.5 bis 25
2		Tooth flank grinding Spur and helical gears on pinion shafts	25 mm and above	b = 720 mm	1.5 bis 25
3		Klingelnberg cyclo-palloid spiral gearing design: lapped design: HPG	 up to 730 mm up to 1000 mm	 b = 7 to 11 x m_n b = 7 to 11 x m_n	 1.5 to 13 up to 21.5
4		Klingelnberg cyclo-palloid spiral gearing design: lapped design: HPG	 d1 = clamping dia. up to 160,4 mm d1 = clamping dia. up to 250 mm	 b = 7 to 11 x m_n b = 7 to 11 x m_n	 1.5 to 13 up to 21.5
5		Klingelnberg hypoid spiral gearing design: lapped	up to 730 mm d1 = clamping dia. up to 160.4 mm	a = 0,1 * d_{02}	1.5 to 13
6		Klingelnberg cyclo-palloid spiral gearing design: with ground tooth flanks	up to 800 mm	b = 7 to 11 times m_n	1.5 to 18
7		Klingelnberg cyclo-palloid spiral gearing design: with ground tooth flanks	d1 = clamping dia. up to 160,4 mm	b = 7 to 11 times m_n	1.5 to 18

*) upon request

Metal Cutting, Testing, Heat-Treatment

		Facilities	Applications	
1		Hydraulic keyseating machine	Keyways of 3 mm up to max. 100 mm Splines are possible up to 90 mm width	Special design keyways: upon request
2		- Vertical boring and facing mill - Center lathe - NC lathe - CNC lathe	up to 1650 mm dia. up to 1000 mm dia. and 3200 mm length up to 650 mm dia., up to 300 mm width and up to 1500 mm length up to 430 mm dia., 650 mm length	
3		Boring and surface grinding machine	d = up to 1200 mm L = up to 550 mm D = up to 1300 mm max. unit weight = 3500 kg	Suitable for small production lots
4		Portal milling machine	Max. clamping surface with a table coupled 2 x 3650 mm long travels: - l = 6000 mm - w = 2000 mm - h = 1750 mm	Height corresponds with base of cutter head
5		Horizontal boring and milling machine	Clamping surface: 2500 x 3000 mm travel: 3500 mm table sizes: 2500 x 3000 mm table load: 25,000 kg	Boring machine with drilling dia. from 75 mm to 150 mm
6		Gear testing machine PNC - 130 HFR-2400	 1300 mm dia. 2400 mm dia. up to 36 module	Gear testing machine with automatic evaluating unit
7		Heat treatment and hardening (see leaflet W 130)	Case-hardening; gas nitriding Hardening under the press Straigtening and centering Pre-treatment (normalising, BG-annealing, through-hardening, stress relieving)	Metallurgical analyses including structure and hardness annalyses, Hardening specimens, polished crosssections (Vickers, Rockwell, Brinell to DIN)

Job Work

We rely on optimum treatment

Job Work

For any job work you may be ordering from FLENDER SERVICE, you are free to choose one of the following manufacturing methods for gears being used in all fields of power transmission engineeering: according to your own drawings or specimens or according to dimensions taken individually.

We do have all the facilities at our works that permit to make any sort of gear, specialising on through-hardened and case-hardened spiral bevel gears manufactured by the Klingelnberg cyclo-palloid process and which are lapped, made with ground tooth flanks or which are of the HPG-S (hard-cut) type. Our in-process quality control guarantees high quality standards in every operation throughout the manufacturing process up to and including the final inspection test.

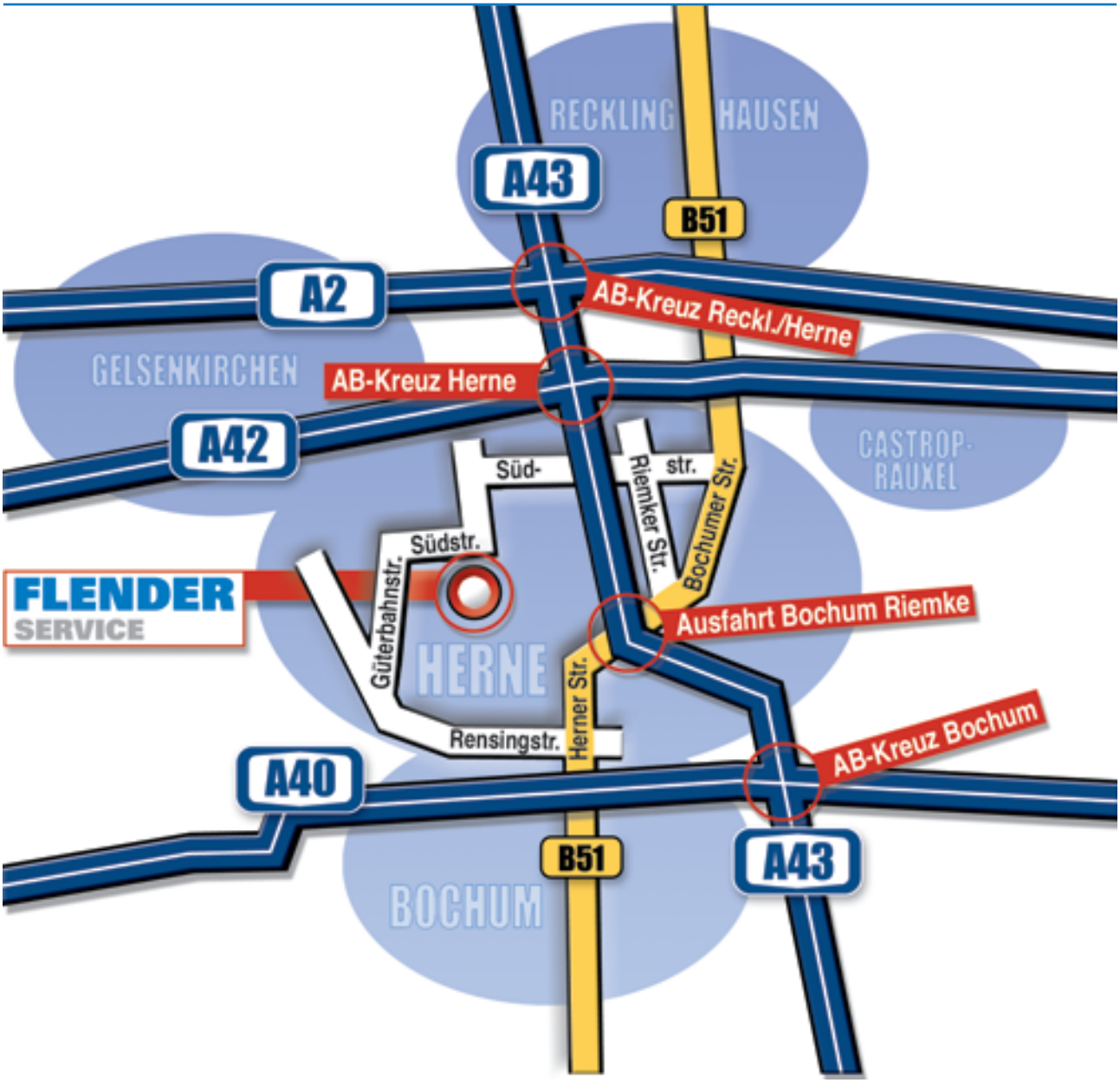
Heat treatment

Capability and timeliness - such are the most important features to characterise our heat treatment shop in the Herne works, with the service range including case-hardening, through-hardening, gas nitriding, metallographic analyses, structure and hardness analyses, heat treatment specimens.

Please consult us for information on how FLENDER SERVICE can ensure utmost availability of your drives:
++49 (0)2323 940 - 260.
Call our 0172 - 28 10 100 Hotline 24 hours a day.

Job Work

How to find your way to our works:



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