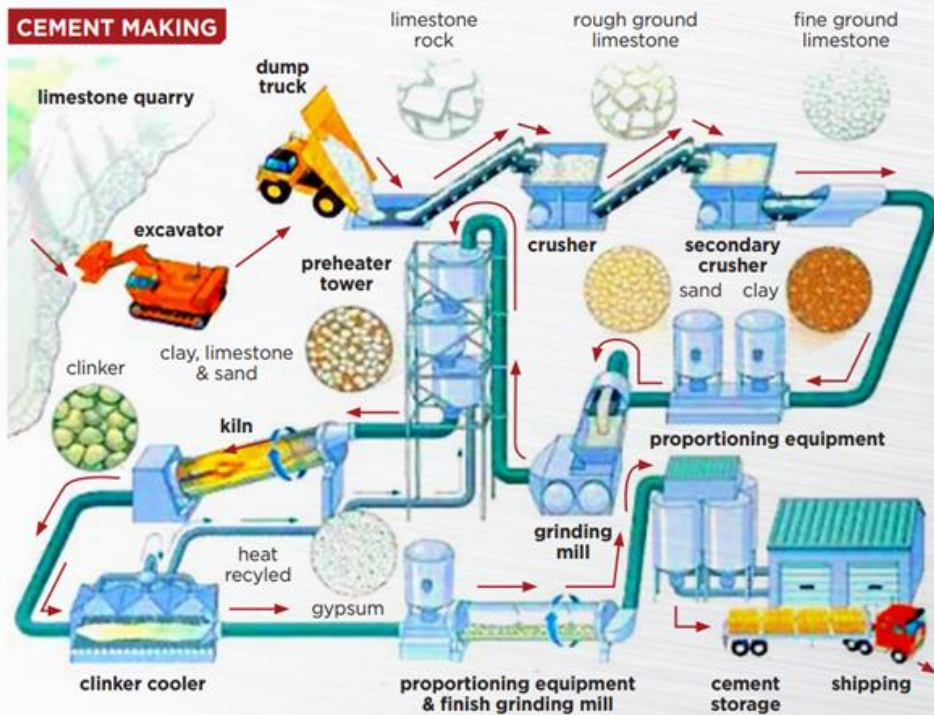


호프만 (Hofmann Engineering) Girth Gear for Kiln, Mill



제조사 : HOFMANN ENGINEERING PTY LTD.
한국 독점공급권 : 호성테크놀로지(주)

Hofmann Engineering - 시멘트산업 부문 사업영역



HOFMANN ENGINEERING CAN SUPPLY EQUIPMENT THAT WILL ASSIST IN THE FOLLOWING:

- 1. EXTRACTION OF RAW MATERIALS**
 - Excavators
- 2. TRANSPORT BY CONVEYOR BELT**
 - Pulleys, idlers and gearboxes
- 3. GRINDING OF MATERIALS**
 - HPGRs (High Pressure Grinding Rolls)
 - Crushers
 - Sizers
 - Mills
- 4. BURNING**
 - Clinker rotary kiln

Hofmann Engineering - 제조 거점 (호주, 북미, 칠레, 페루)



• Hofmann **BENDIGO**, VIC



• Hofmann **MELBOURNE**, VIC



• Hofmann **NEWCASTLE**, NSW



• Hofmann Engineering
CHILE



• Hofmann Engineering
NORTH AMERICA



• Hofmann Engineering
PERU



• Hofmann **PERTH**, WA

Sales and engineering sourcing offices with detailed metallurgical, mechanical and inspection capability:

- Hofmann Engineering
CHINA
- Hofmann Engineering
INDIA
- Hofmann Engineering
USA - TEXAS
- Hofmann Engineering
SOUTH AFRICA

Hofmann Girth Gear

“ 세계 최대 FORGED STEEL GIRTH GEAR ”

Full Line-up Provided

- SG iron
- Cast steel
- Austempered SG iron
- Forged fabricated
- Forged fabricated, induction hardened



Hofmann Girth Gear 강점

- High Quality - Forged steel & High technology
- 'One stop shop' – 모든 관련 Machinery와 Tool을 Hofmann Engineering 내부 직접 생산

- **Global Leading Mill & Kiln Girth Gear** (up to 2.5m face width x 15m dia.)
- **High Quality, Long Service Life**
 - a. Forged steel → forged to a third of its original thickness
 - Gear precision grade : AGMA 10 (DIN 7), Hardness : 52 HRC (500 BHN)
 - b. Induction hardening heat treatment
 - c. High speed gear tooth cutting
- **Total Solutions (Full turn-key tooling services)**
 - 설계, 제조, 가공, 조립, Testing, 설치, 현장 서비스
 - 광범위한 라인업 : Cast steel, SG iron, Forged steel → Hofmann 자체 제작
- **50개 이상의 다양한 Major International OEM 공급**
 - FLSmidth, Rexnord, Flender, Falk, Valmet, Polysius, 그 외 다수



비교 Test 결과 (1) - 재료와 열처리의 차이로 인한 Hardness 및 Quality 우위

GIRTH GEAR RATING COMPARISON

The effect of different material and heat treatment on hardness and quality.

| | SG IRON NORMALISED INDIVIDUAL RISER | | CAST STEEL NORMALISED FULL RING RISER | | AUSTUF AUSTEMPERED SG IRON | | FORGED FABRICATED QUENCH AND TEMPERED | | FORGED FABRICATED CONTOUR INDUCTION HARDENED | |
|----------------------------|---|---------|---|---------|----------------------------------|---------|---|---------|---|---------------------------|
| MATERIAL | AS 1831-700-2 | MAX | AISI 4140 | MAX | AS 1831-700-2 | MAX | HOFALLOY | MAX | HOFALLOY | MAX |
| HEAT TREATMENT Hardness | NORMALISED 280 BHN | 330 BHN | NORMALISED 280 BHN | 360 BHN | AUSTEMPERED 350 BHN | 400 BHN | QUENCH & TEMP 330 BHN | 380 BHN | INDUCTION HARDENED Core = 280 BHN Case = 50 HRC Depth = 5mm | 300 BHN 58 HRC 10mm |
| QUALITY Machining | AGMA 10 (DIN 7) Hobbed | 10 | AGMA 10 (DIN 7) Hobbed | 10 | AGMA 10 (DIN 7) Hobbed | 10 | AGMA 10 (DIN 7) Hobbed | 10 | AGMA 10 (DIN 7) Hob/Hardcut | 10 |

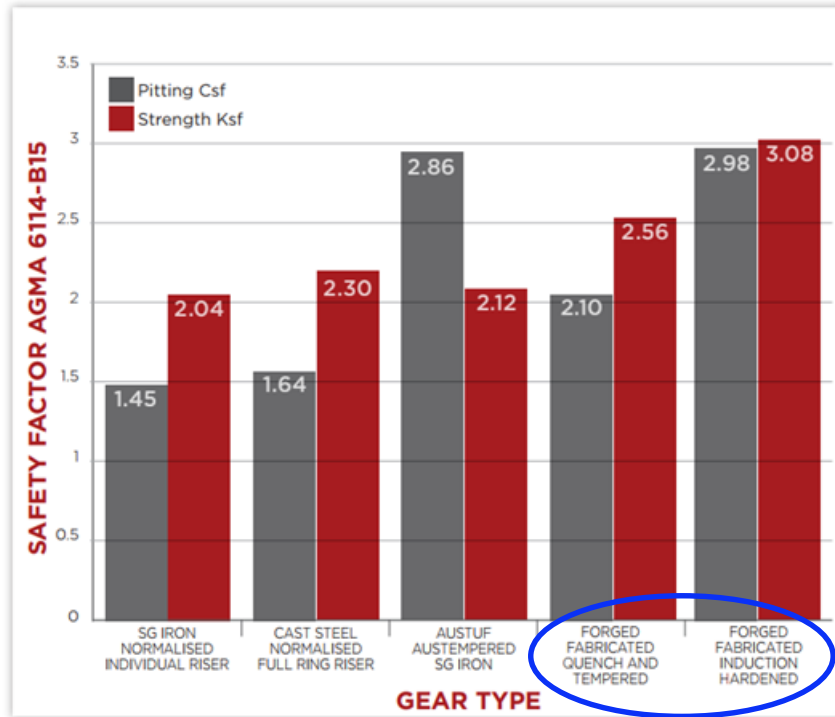
EXAMPLE:
Power Details:
Power (kW) 4000
G Speed (RPM) 14



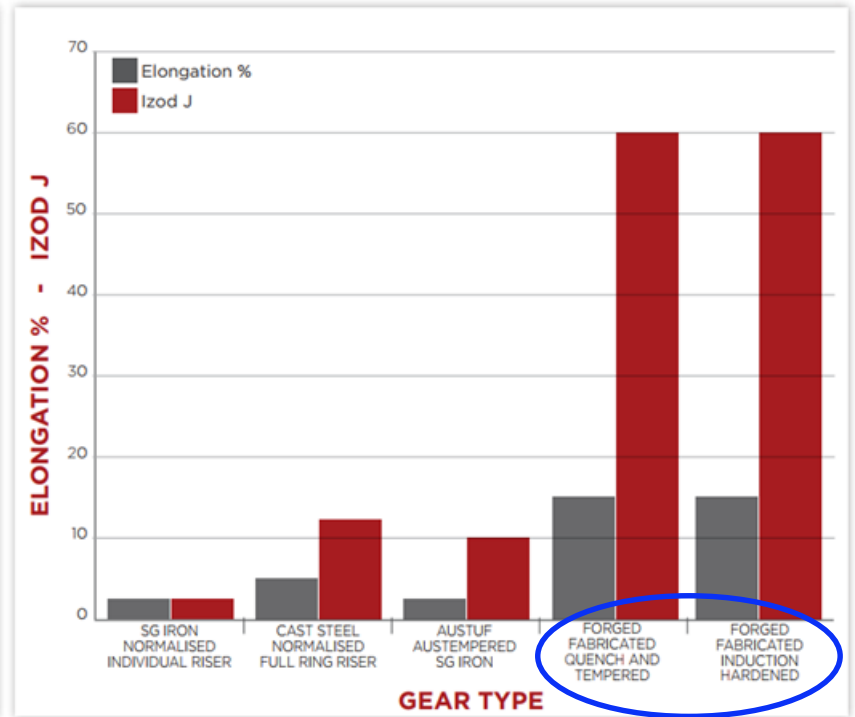
| GEOMETRY (Example) | Hofmann Maximum Cap | Hobbing (HSS) | | Skiving (Carbide Hob) | | Form Milling (Carbide) | | Finger Milling + Double Helical | |
|----------------------|------------------------|---------------|---------------|-----------------------|---------------|------------------------|---------------|---------------------------------|---------------|
| | | External | Internal Gear | External | Internal Gear | External | Internal Gear | External | Internal Gear |
| Module Mn 25.4 | Max Module | 50 Mn | 25 Mn | 50 Mn | 25 Mn | 100 Mn | 60 Mn | 100 Mn | 60 Mn |
| Pressure Ang a 25° | Max Press Ang | 45° | 45° | 45° | 45° | 45° | 45° | 45° | 45° |
| Helix Angle β 5° 30' | Max Helix Ang | 45° | 45° | 45° | 45° | 45° | 45° | 45° | 45° |
| Nos Teeth Z 282 | Max No Teeth | 700mm | 700mm | 700mm | 700mm | 700mm | 700mm | 700mm | 700mm |
| Face Width F 840 | Max Face Width | 2500mm | 500mm | 2500mm | 500mm | 2500mm | 600mm | 2500mm | 600mm |
| Outside Dia da 7244 | Max Outside Dia | 14000mm | 14000mm | 14000mm | 14000mm | 14000mm | 14000mm | 14000mm | 14000mm |
| Weight (t) W 50 | Max Weight | 130t | 130t | 130t | 130t | 130t | 130t | 130t | 130t |
| % PRICE (Example) | 100% | 115% | | 135% | | 120% | | 140% | |
| DELIVERY (Example) | 36 weeks | 36 weeks | | 34 weeks | | 16-39 weeks* | | 20-45 weeks* | |

비교 Test 결과 (2) - Forged Q&T, Forged Induction Hardening의 Safety factor 및 Elongation 탁월성

LARGE GEAR COMPARISON



MECHANICAL TEST RESULTS



Hofmann Engineering - 시멘트부문 주요 Customers

SATISFIED CUSTOMERS:

- COCKBURN CEMENT AUSTRALIA
- CEMENT AUSTRALIA
- ASSOCIATED PAN MALAYSIA CEMENT SDN BHD
- LAFARGE INDIA PVT LTD (JOJOBERA CEMENT PLANT)
- BLUE CIRCLE SOUTHERN CEMENT
- ADELAIDE BRIGHTON CEMENT LTD.
- LAFARGE CEMENT INDONESIA PT
- MORGAN CEMENT LTD
- YTL CEMENT
- QUASSIM CEMENT CO.
- ACICO CEMENT & CONSTRUCTION CO.
- CEMENTOS AVELLANEDA S.A.
- EMIRATES CEMENT
- HOLCIM CEMENT
- GOLDEN BAY CEMENT
- LAFARGE EMIRATES CEMENT PLANT
- AJ JABOR CEMENT INDUSTRIES COMPANY
- GREEN ISLAND CEMENT COMPANY LIMITED
- OHORONGO CEMENT (PTY) LTD
- SECIL
- CIMENTOS MACEIRA E PATAIAS
- CIMA
- **AND OTHERS**

Hofmann 인증서

AEROSPACE/DEFENCE AS9100



QUALITY, SAFETY & ENVIRONMENT ISO9001, ISO14001, ISO45001



AGMA (AMERICAN GEAR MANUFACTURERS ASSOC.)



ITAR (INTERNATIONAL TRAFFIC IN ARMS REGULATIONS)



HOFMANN ENGINEERING
COMPLIANT FOR F35
JOINT STRIKE FIGHTER PROGRAM

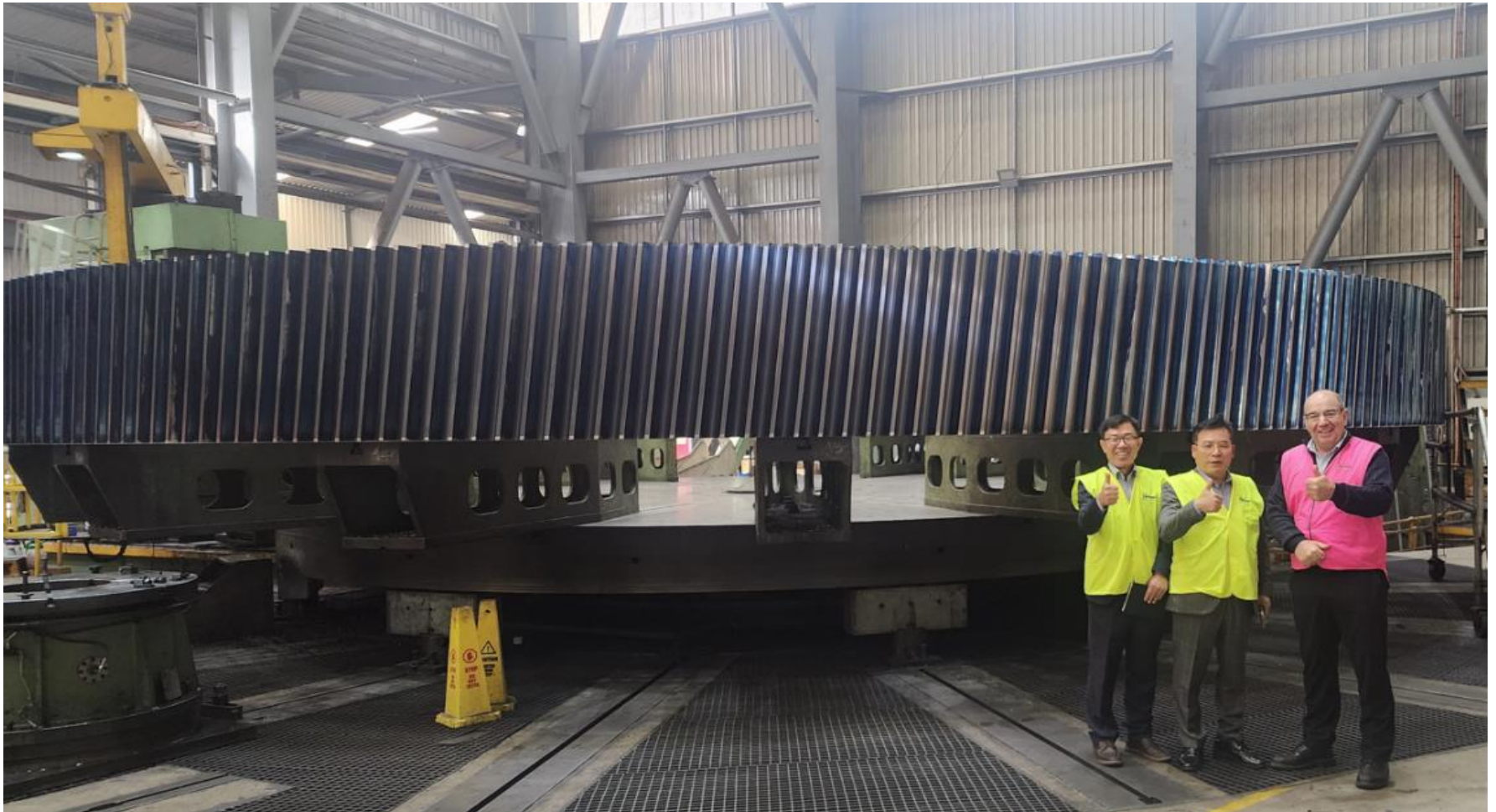
WELDING EN15085-2, ISO3834 PART2, DIN2303



CYBER SECURITY WORKING TOWARDS ISO27001



Hofmann 방문 (호주 본사)



- > Hofmann Engineering Facilities
- > International Sales Partners

International Sales Partners



Hofmann 홈페이지 (한국 독점 공급권)

PHILIPPINES

Engineered Solutions International Corp.

All Products and Services

Francisco Benito M. Echavez ("Binky")

No.5 Guada Sanchez Street
BF Resort Village, Las Pinas City,
Philippines 1740

Phone: (+63) 2874 1194

Email: binky@engineeredsi.com

USA (Eastern States)

Pratt Gears LLC

All Products and Services

Patrick Pratt

Phone: (+1) 414 708 5462

Email: prattgears@yahoo.com

SOUTH KOREA

Hyosung Technology Co., Ltd.

All Products and Services

Deukchoon Lim

910, Ace Highend Tower Classic,
Beotkkot-ro 24-gil 26,
Geumcheon-gu, Seoul, Korea

Phone: (+82) 10 5249 4414

Email: hs040@hanmail.net

CANADA (MB, ON, QC & SK)

Industrial Solutions of Value

All Products and Services

Brian Gumb

Phone: (+1) 519 709 5171

Email: BrianG@ISOV.online

HOFMANN ENGINEERING PTY LTD.

www.hofmannengineering.com

효성테크놀로지(주)

Tel : 02) 853-9053

Email : hs040@hanmail.net

www.hsteco.co.kr