HOFMANN ENGINEERING

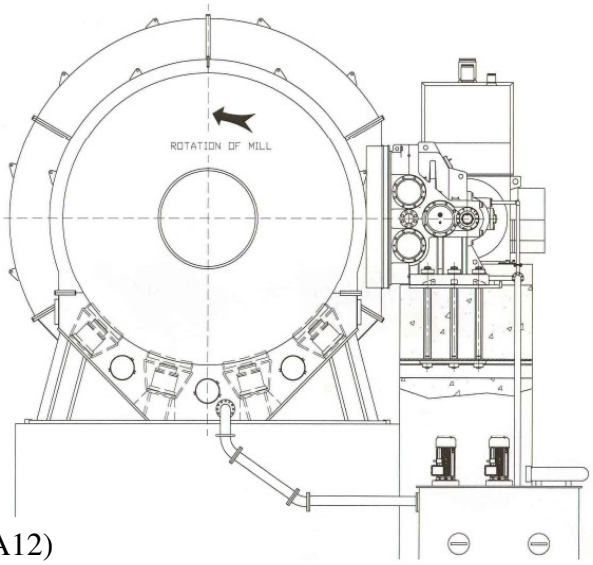
Forged Fabricated Girth Gears & SATP Gear Boxes

Self- Aligning Drives

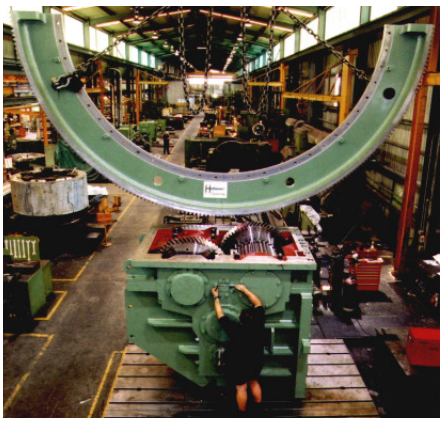
Automatically maintains 100% gear contact regardless of movement in foundation and / or driven component under all operating conditions. No shimming required on installation.

Case Hardened ground Gearing

Material: 17CrNiMo6
Hardness: 58 - 62 HRC
Quality: ≤ DIN 5 (≥ AGMA12)



Forged Fabricated Girth Gear without T-Section Gusset



Using forged steel rims eliminates cracking problems associated with castings.

Forged rim is connected to the web by a full penetration submerged arc weld to ensure it is free of fatigue crack initiation sites.

Material: HofAlloy ≥ 300 HB
Quality: ≤ DIN 7 (≥ AGMA 10)
Face width: 10 mm less than pinion.

Since 1969 Hofmann Engineering has provided specialist engineering services to Australia's industry leaders.

Quality Assurance accreditation by Bureau Veritas complements our total quality culture.

Our commitment to continuous quality-improvement touches every aspect of our products, services and customer support.

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HOFMANN Engineering

Certified ISO 9001 by BVQI

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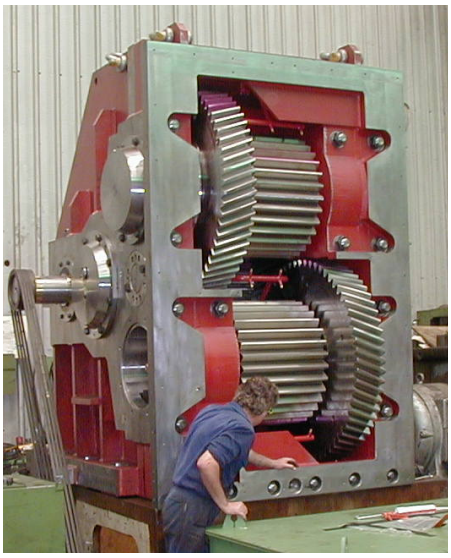
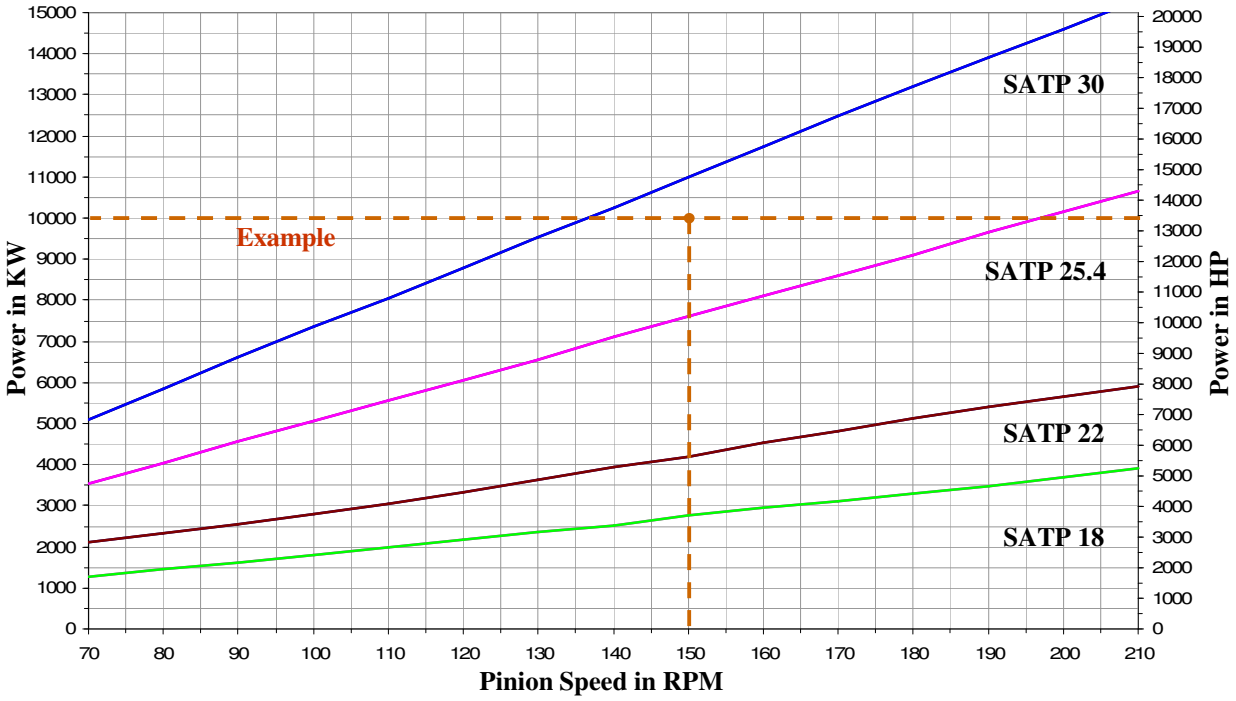
SATP- Self- Aligning Twin Pinion Drive



Four standard sizes M_n 18, M_n 22, M_n 25.4 and M_n 30 that cover the complete range to 10,000 KW per gearbox. The number of teeth of the output pinions is 31. Based on the gearbox size the Service factors are 2.0 to 2.4.

Single motor runs two self aligning, torque splitting pinions direct meshed with the forged fabricated girth gear.

Oil re- circulating system for gearbox and girth gear. Reduced foundation, installation and running costs. SATP Unit Size Selection can easily be done by the following diagram (required service factors are included).



Example:

Motor Output Speed: 990 min^{-1}

Mill Power 10 MW (13410 HP)

Required Mill Speed 15.25 min^{-1}

Girth Gear with 305 teeth

Calculation:

Output SATP Speed n_1 = 150 min^{-1}

$$n_1 = \frac{305}{31} \cdot 15.25\,\text{min}^{-1} = 150\,\text{min}^{-1}$$

Ratio of the SATP- Gearbox i = 6.6 : 1

$$i = \frac{990\,\text{min}^{-1}}{150\,\text{min}^{-1}} = 6.6$$

Result: Required SATP- Gearbox: SATP 30 with an internal ratio of 6.6 : 1

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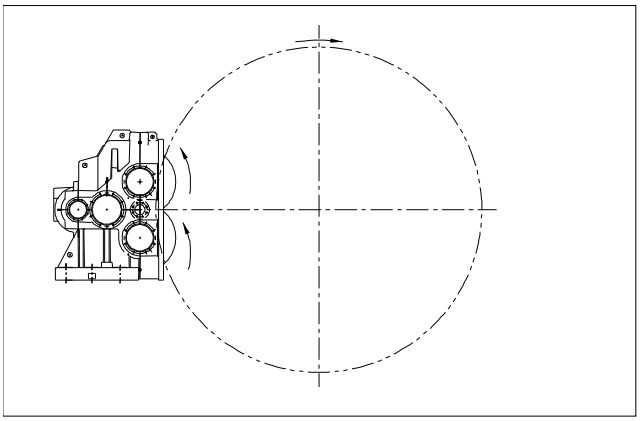
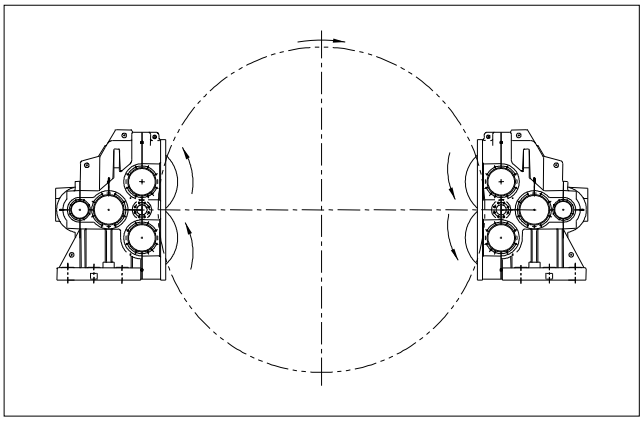
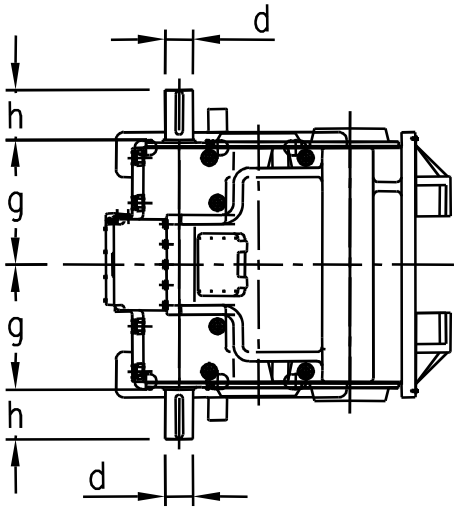


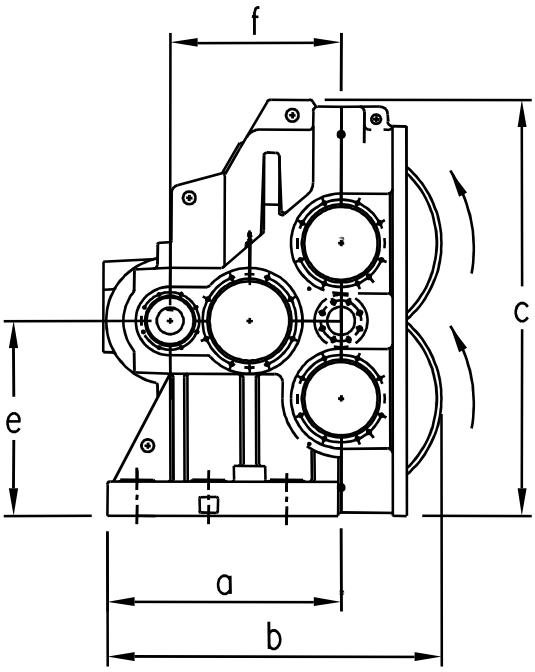
Single Drive with two pinions



Double Drive with four pinions

A Girth gear can have one or two gearboxes mounted in every position. The preferable position for the gearbox is to be turning up so that the gearbox is pushing down onto the base plate.





Shaft ends with keys to DIN 6885, sheet 1, shape A
Shaft centerings to DIN 322, shape DS (tapped)
Tolerance range for shaft ends ISO fit p6

SAPT Size	Gearbox Ratio i_N	Output Pinion			Dimensions in mm								Average Weight in kg
		Face width	Module	No. of Teeth	a	b	c	d	e	f	g	h	
18	5.5 - 12.4	460	18	31	1300	1710	2215	150	1040	910	665	265	18100
22	5.5 - 12.4	560	22	31	1500	2145	2670	180	1250	1100	800	320	28100
25.4	5.5 - 12.4	640	25.4	31	1665	2395	3050	200	1430	1255	915	365	48100
30	5.5 - 12.4	760	30	31	2160	3050	3640	240	1705	1500	1090	435	68100

Data subject to alteration and not binding
Motor Speed n_1 assumed to be 990 min^{-1}

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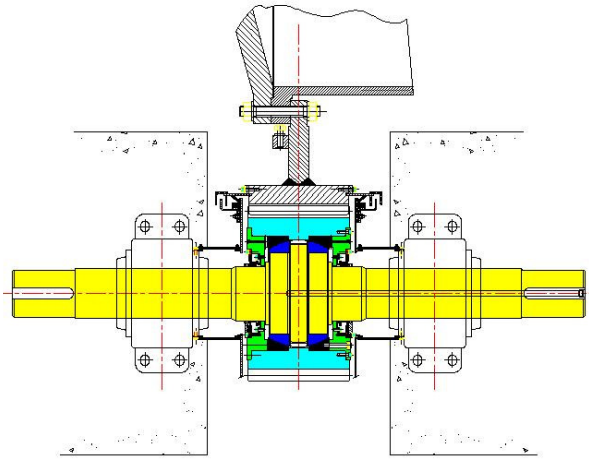
1) SAP - Self Aligning Pinion

Conventional Self Aligning Pinion with plumber block bearings.

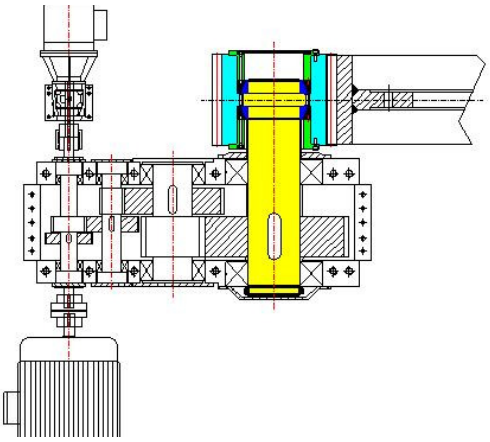
- Retrofit to existing mills and drives.
- Pinion shaft is reversible.



2) SAOP - Self Aligning Overhung Pinion Drive

Self-aligning overhung pinion mounts directly to output shaft main gearbox.

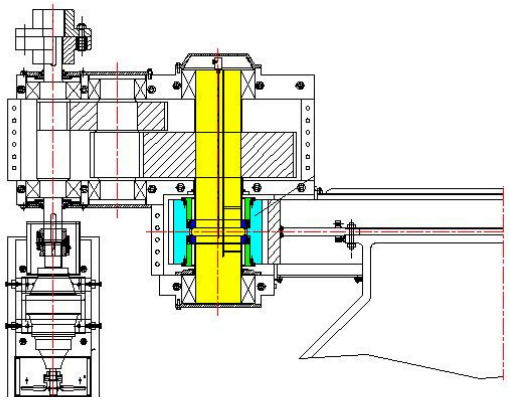
- Lowest foundation and installation costs.
- No low speed coupling or plumber bearings.
- Split lube system between gearbox and open gearing is now possible.



3) SASP - Self Aligning Single Pinion Drive

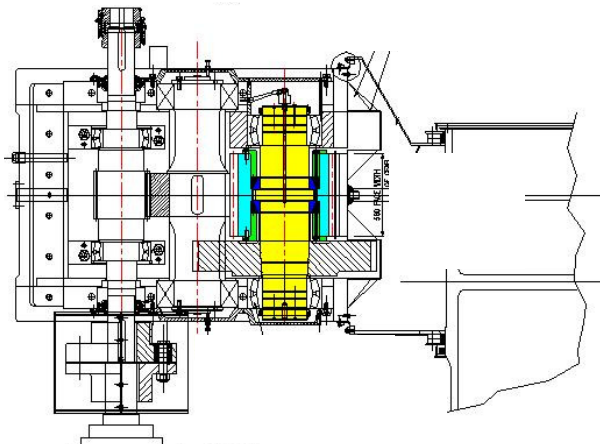
Self-aligning pinion mounts directly to the output shaft and is integral with the main gearbox.

- Reduced foundation and installation costs.
- No low speed coupling or plumber bearings.
- Split lube system between gearbox and open gearing is now possible.



4) SATP - Self Aligning Twin Pinion Drive

- 4 standard sizes 18Mn, 22Mn, 25.4Mn & 30Mn that covers the complete range to 10,000kW.
- Single motor runs two self aligning, torque splitting pinions direct meshed with the girth gear.
- Reduced foundation, installation and running costs.
- Oil re-circulating system for gearbox and girth gear.



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