

SEISA



LARGE-SIZE CEMENT MILL DRIVE



SEISA Gear, Ltd.

Affiliated Company of Sumitomo Heavy Industries, Ltd.

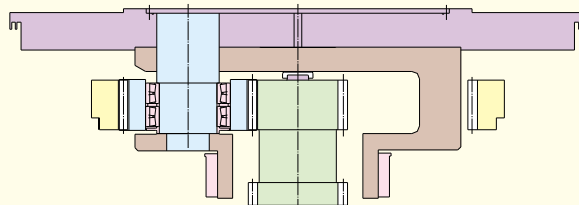
SEISA Large Vertical Roller Mill Drive

This gear reducer is the most suitable for driving a cement raw mill, a clinker mill and a slag mill. Seisa is one of world's leading companies for a gear reducer of a mill and have supplied more than 300 sets to world's customers which are highly evaluated.

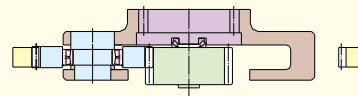
Features 1. High Reliability

Our vertical roller mill drives are standardized building block design as following block assemblies. Simple constructions and highest reliability.

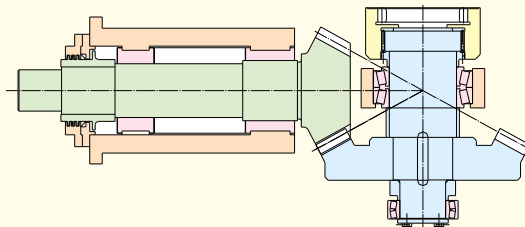
a. Output Flange & Main Planetary Gear Parts



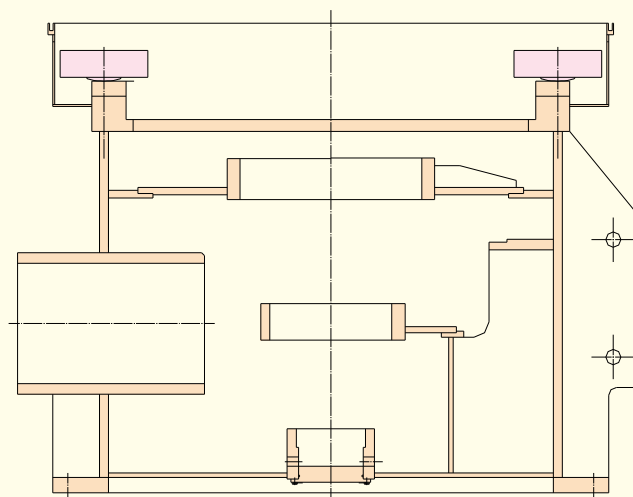
b. Intermediate Planetary Parts



c. Bevel Gear Parts



d. Thrust Bearing & Casing Parts



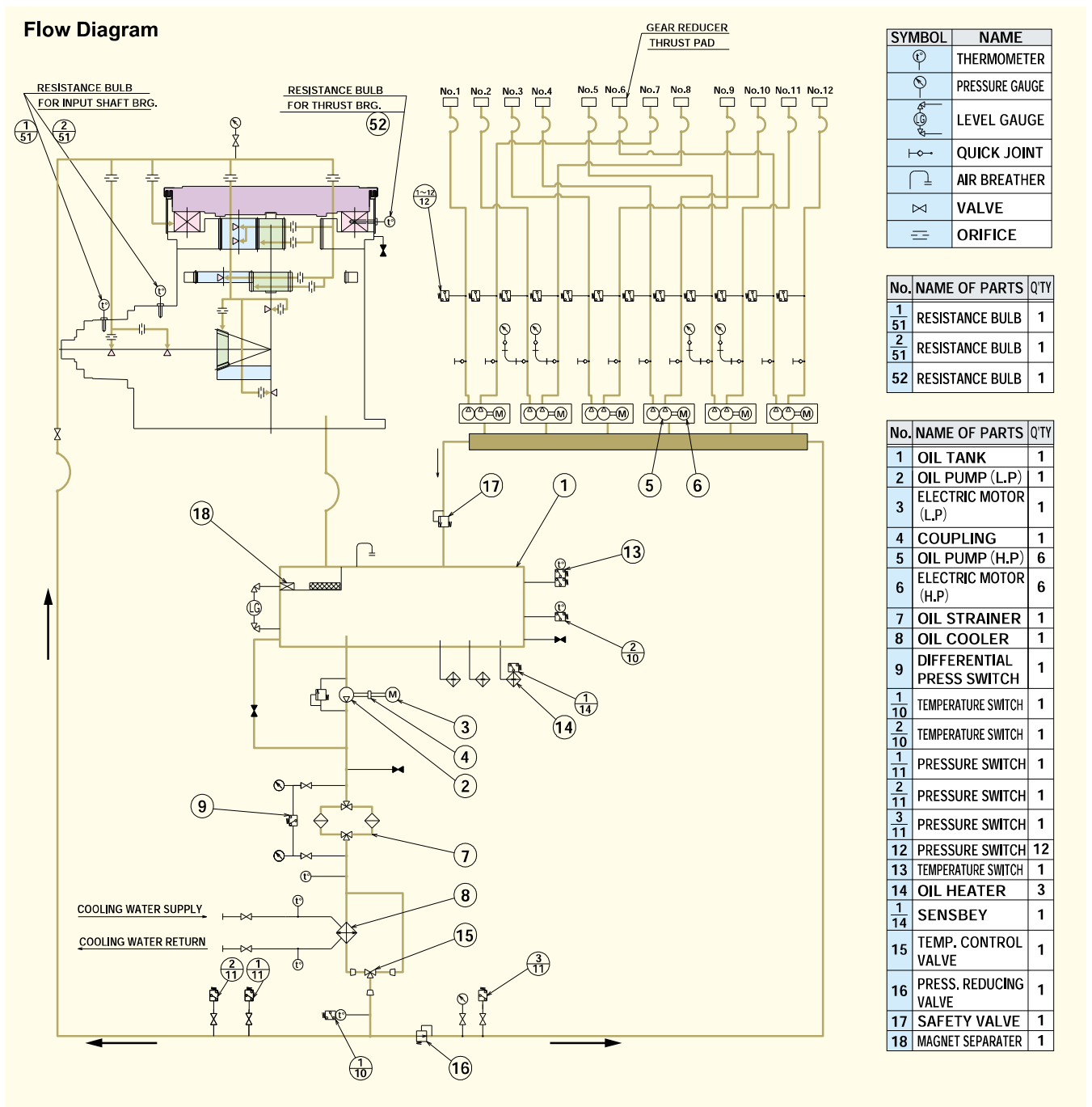
Features

2. Saving Installation Cost

- a. Because of compact size and light weight unit, a completely assembled unit is delivered to an actual site.
- b. Adjustment of gear tooth contact, thrust bearings contacts and oil supply volume of each lubricating portion and flushing works are not required at the actual site, which make possible a short time installation at the site.

3. Easy Maintenance

Maintenance is required mainly for check of lubrications



TYPE BPP & BHP

Gears

The design of gears is based on AGMA standards and all gears are designed with AGMA service factor **2.5** min.

Planetary Gearings

The basic tooth form for planetary gearings employed by us has a **25 deg.** pressure angle and 1.1 module addendum. As compared with a tooth form with a pressure angle 20 deg. generally used, this tooth form is **13%** higher in strength and **18%** higher in durability.

Sun pinion and Planet gears

Sun pinion and planet gears of Cr-Mo or Ni-Cr-Mo forged steel are precisely machined and tooth-grinding finished after carburized and hardened.

Internal gear

Internal gear made of carbon steel or Cr-Mo forged steel is gear shapering finished or ground after quenched and tempered.

Spiral Bevel Gears

After carburized and hardened, the gear teeth are carbide tool cut finished by using special cutter blades on Klingelnberg or Gleason spiral bevel gear cutting machine to **JIS Accuracy Class O or 1** (equivalent to AGMA Class 12 or DIN Class 4).

Non-Destructive Check of Gears

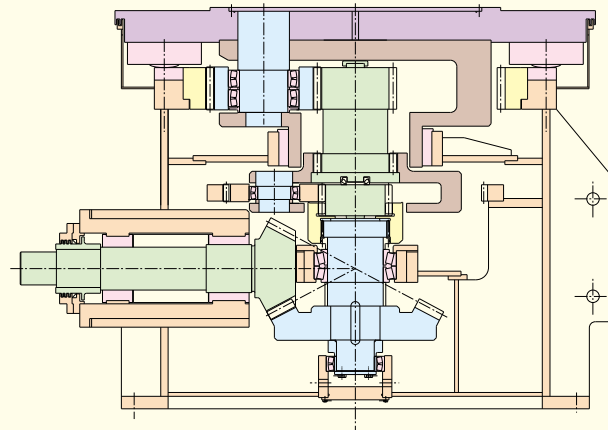
1. Chemical composition and mechanical properties of materials are inspected by the mill sheet of first class steel maker.
2. After heat treatment, a ultrasonic inspection is performed to make sure that there are no internal defects in materials or no defects caused by heat treatment.
3. After tooth-grinding finished, subjected to a magnetic particle inspection is applied to surface-hardened gear teeth to make sure that there are no hair cracks and/or like on the surface.

Thrust Bearings

Hydro-static thrust bearings for larger size units:

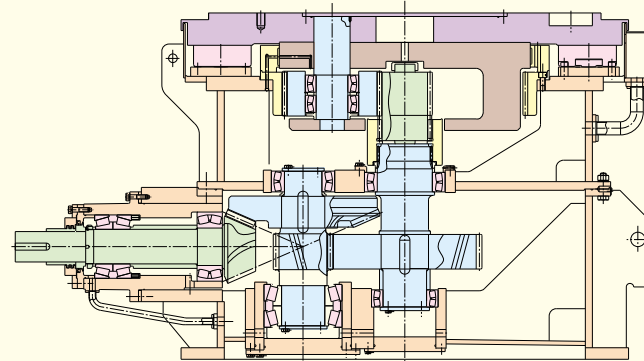
A high pressure oil is fed to each sliding surface of thrust pad and a required oil film thickness is kept by hydro-static pressure. Since the high pressure oil is fed to each thrust pad independently, a certain oil volume is always kept to each pad and a required oil film thickness is always kept under different thrust loads on each thrust pad

TYPE BPP



The gear reducer for a large size mill consists of triple stage reduction of Bevel/Planetary/Planetary type.

TYPE BHP



The gear reducer for a medium size mill consists of triple stage reduction of Bevel/Helical/Planetary type.



3800kW Bevel Planetary Gear Reducer for Vertical Type Roller Mill

3300kW Bevel Helical Gear Reducer for Vertical Type Roller Mill



Internal Gear



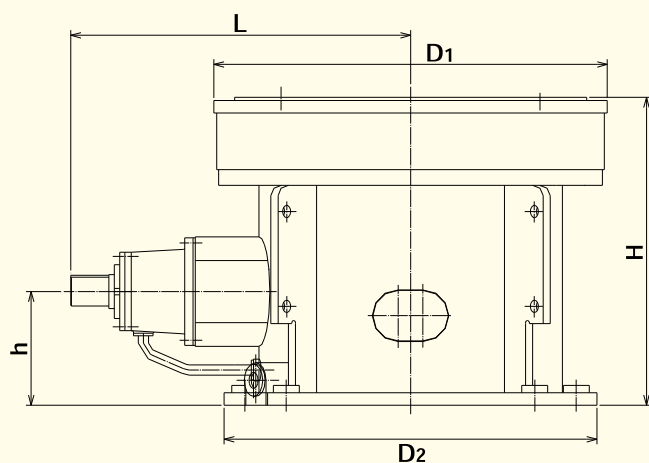
Spiral Bevel Gear



Thrust Pads

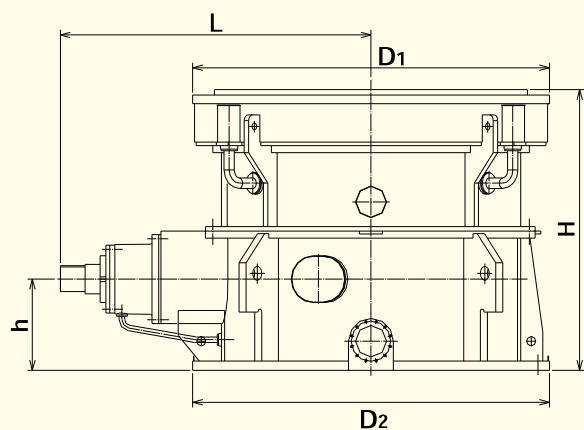
Selection of Gear Unit & dimension

For Large Size Mill



TYPE	NOMINAL POWER (kW)	H	D1	L	D2	h	MASS
		mm	mm	mm	mm	mm	
BPP164V	2900	2300	2900	1920	2850	700	47
BPP176V	3300	2450	3000	2000	2950	750	56
BPP190V	3600	2610	3250	2150	3200	800	70
BPP202V	4300	2740	3400	2300	3350	850	81
BPP215V	5000	2850	3550	2500	3500	930	98
BPP230V	5600	3065	3800	2650	3700	1000	120

For Medium Size Mill



TYPE	NOMINAL POWER (kW)	H	D1	L	D2	h	MASS
		mm	mm	mm	mm	mm	
BHP106V	1200	1815	2200	2080	2300	710	21
BHP115V	1500	1815	2200	2130	2300	710	23
BHP127V	1750	2000	2680	2200	2400	720	33
BHP131V	2000	2220	2700	2400	2550	733	37
BHP133V	2300	2250	2750	2500	2800	760	45
BHP167V	2600	2400	3100	2700	3000	780	51

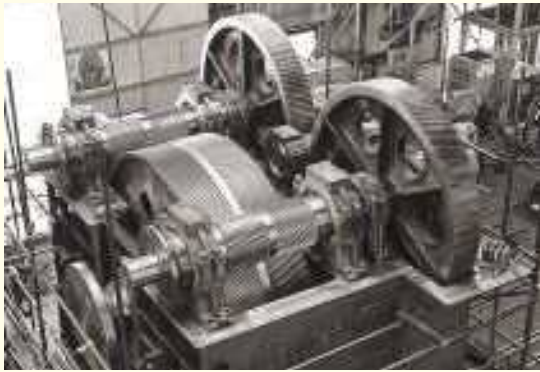
SEISA Horizontal Mill (Ball Mill) Drive



1500kW Planetary Gear Reducer for Cement Mill



6300kW Planetary Gear Reducer for Cement Mill

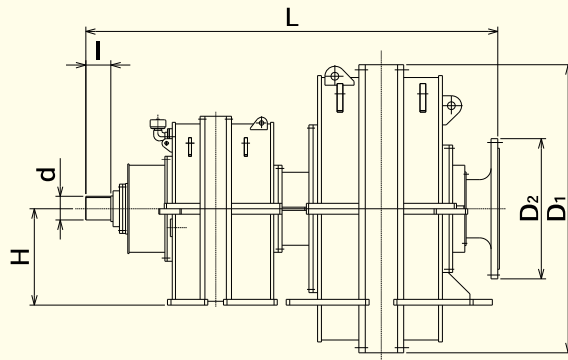
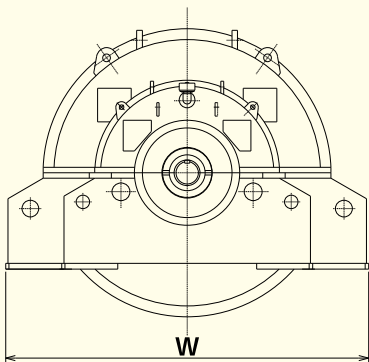


3700kW Symmetry Type Gear Reducer for Cement Mill



Inching Device for Cement Mill

Selection of Gear Unit & Dimension

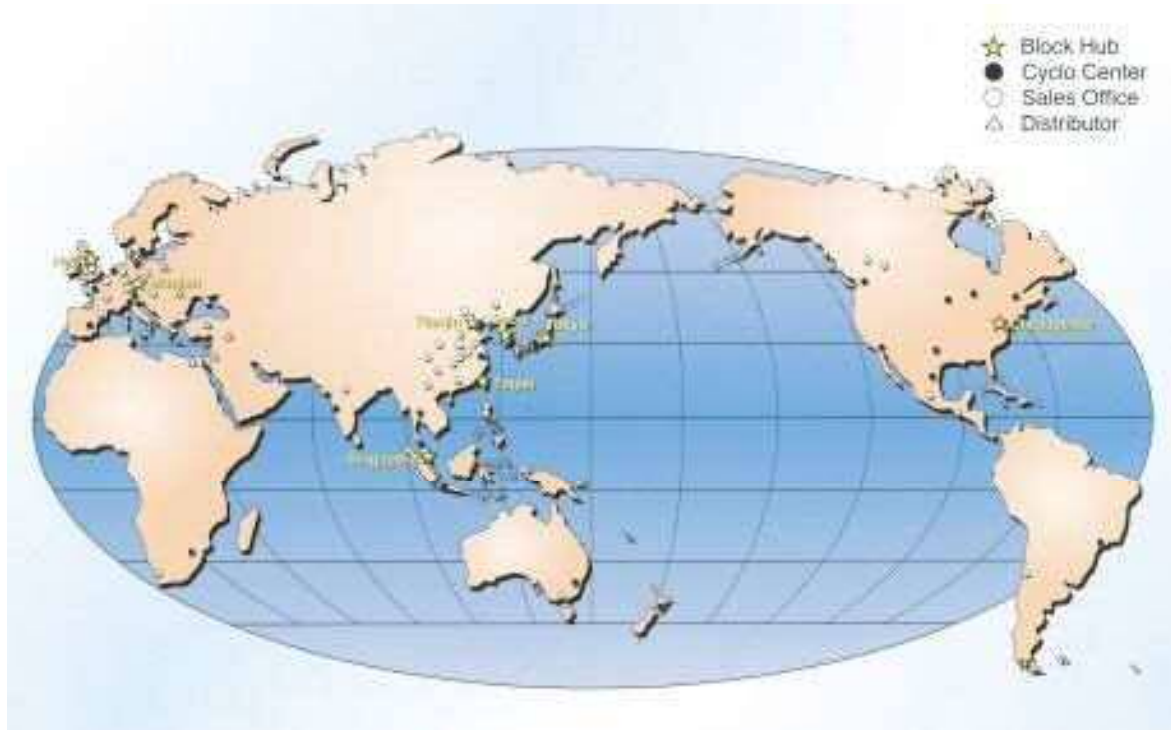


TYPE	NOMINAL POWER (kW)	L	W	D ₁	I	D ₂	H	d	MASS
		mm	mm	mm	mm	mm	mm	mm	ton
DPP205H	2900	3700	3000	2440	200	1250	800	190	34.0
DPP218H	3500	3900	3200	2570	224	1400	860	200	40.0
DPP240H	4200	4100	3500	2800	224	1400	950	210	50.0
DPP255H	5400	4200	3800	3000	250	1500	1100	230	65.0

TYPE	NOMINAL POWER (kW)	L	W	D ₁	I	D ₂	H	d	MASS
		mm	mm	mm	mm	mm	mm	mm	ton
DPP285H	6600	4500	4100	3350	280	1550	1150	240	80.0
DPP310H	7700	4750	4300	3610	305	1650	1200	270	95.0
DPP323H	8600	5000	4400	3750	305	1700	1300	280	105.0

Global Net-Work

Please contact your local international sales office for detail information. The Global Net-Work of Sumitomo Heavy Industries is at your service for Seisa gears and other products.



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