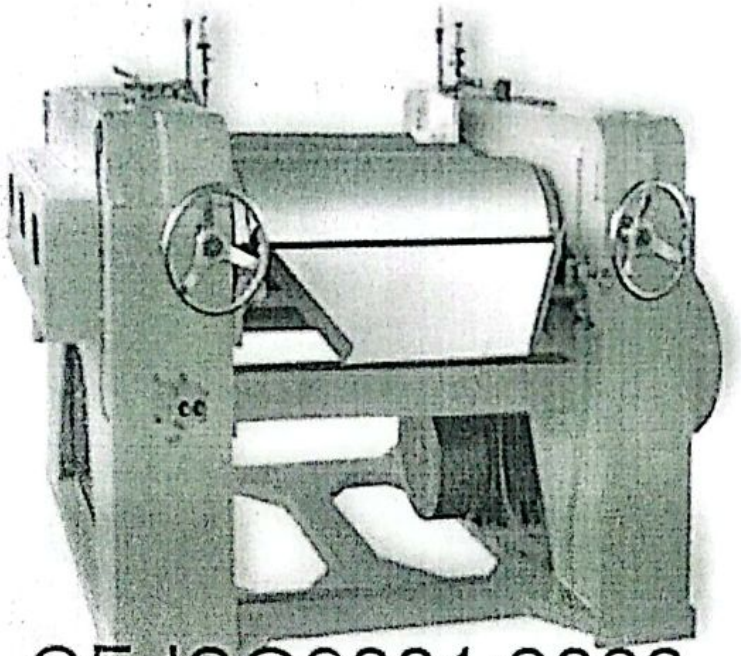
東喜實業
TIRAN INDUSTRIAL



CE ISO9001:2000

Model		SG16"
Roller diameter (mm)		406
Length of roller working surface (mm)		810
Distance from discharge hole to ground (mm)		820
Roll rotating speed(r/min)	Low speed roll	14
	Medium speed roll	43
	High speed roll	130
Main motor power (KW)		15
Overall dimension LxWxH (mm)		2150x1795x1600
Machine weight (kg)		5300
Packing dimension LxWxH (mm)		2250x1850x1950

The packing size of vessel is 1800x1400x1150

Manual control three roller mill
The production quantity is 100~120kg/h (one pass for offset ink).

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Model		YS400
Roller diameter (mm)		400
Length of roller working surface (mm)		1300
Distance from discharge hole to ground (mm)		690
Roll rotating speed(r/min)	Low speed roll	32
	Medium speed roll	128
	High speed roll	400~450
Main motor power (KW)		55
Total pressure of hydraulic system (Mpa)		6.3x2
Pressure power (KW)		1.5x2
Machine weight (kg)		5200
Overall dimension LxWxH (mm)		2650x1750x2295
Packing dimension LxWxH (mm)		2800x1900x1900

Hydraulic control three roller mill.
The production quantity is 200~250kg/h (one pass for offset ink).
The quality of the product milled by the machine is more uniform.

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roubleshooting

9.1 Surface Damage of Roll Due to improper operation, wearing or dropping of foreign object the surface of the roll is damaged, it should stop operation in time and check the machine.

Repair of Surface of Roll First of all, switch off power supply and open the cover of the machine, remove all connected parts from the bearing seat (make marks well on all removed parts), take damaged roll and put it on the wooden support, remove out the bearing seat (refer to 8.1.1 – 8.1.5 in Sub-Clause 8.1), then grind the surface of the roll in reference to the installing position of the bearing on the shaft nose of the roll.

9.2 Breakage of Safety Bolt Due to improper operation or dropping of foreign object into the roll, the safety bolt is broken and the roll is out of control, it should stop operation in time and check the machine.

Replace the Safety Bolt Refer to description in safety device drawing of attachment.

9.3 Materials Leak from both Ends of Roll In case the machine runs for a long time, copper blades are worn out and the gap between the copper blades and the roll becomes larger and materials leak occurs. Adjust the fixing screws of the copper blades on the support of the copper blades to eliminate leaking of materials.

X. Attachments

Repairing and Disassembling Orders

1. Disassembly of Bearing of the Roll

a) First of all loosen the adjusting hand wheel with the roll and remove the belt cover and upper dust plate;

b) Loosen bolts of support of the copper blade and take the copper blade out; loosen bolts of discharging plate and take it out;

c) Loosen the bolts of the cover and take away the cover; remove plastic guide pipe of the cooling pipe, loosen the support of the cooling pipe and take cooling water pipe inside the roll;

d) Use the tool (tri-paw puller) to remove the gear from the roll shaft, loosen the press plate of the seat of the roll shaft to take out the washer and remove the bearing seat from the roll shaft by the tool (tri-paw puller);

e) Prop out the bearings from the bearing seat by the sleeve.

Attention: when assembling bearing and the bearing seat on the axle of the roll, it should prop and knock the outer ring of the bearing evenly. If the bearing seat is knocked in much more, pull it out by the tool (tri-paw puller) on the axle of the roll.

2. Disassembly of Bearing of Driving Shaft

a) First of all loosen the adjusting hand wheel with the roll and remove the belt cover and upper dust plate;

b) Loosen bolts of support of the baffle and take out the baffle; Loosen the bolt rod of the discharging bucket and take the bucket out;

c) Loosen bolts of the cover and remove it upward, remove plastic guide pipe of the cooling pipe and loosen the support of the cooling pipe and take cooling water pipe inside the roll;

d) Take out rolls from the frame and place them in order of slow, middle and fast one;

e) Take out the belt and remove the upper pulley;

f) Loosen the press plates of the bearing at both ends of the driving shaft and take out the lining ring;

g) Prop the bearing of the driving shaft from the outside of the machine and knock out the driving shaft;

h) Prop the driving shaft by the tool (tri-paw puller) and pull out the bearing.

Lubrication and Maintenance of the Machine and Points for Attention

a) Open the oil filling cover of the gearbox, fill grease to lubricate mesh surfaces of gears.

b) Bearing seats have been filled with grease before leaving the factory and no filling is required for the beginning of operation. Fill grease by the grease gun after running for 120 hours.

c) Add lubricant oil once every shift via the nipple in driving shafts.

d) Add lubricant oil at any time in adjusting screws, bearing seats and two guide rails to avoid wearing and seizure.

e) It is suggested to make an inspection if the machine is operated for half a year continuously. Remove and clean all moving parts and replace with clean lubricant oil. Carefully check oil channels of lubricant oil to see if they are unblocked. Make correction in course of removing and washing if trouble is found.

f) In case rolls are found to have concave in midst, peeling surface or irregular deformation, they should be stopped to use and ground again.

g) In case rolls are ground much times and its diameter is less than its nominal diameter, then tooth butting could occur, gaps between rolls are enlarged and materials could not be milled well. Then gears should be repaired to reduce its diameter of pitch circle or roll should be replaced.

h) The edge of the discharging blade should be ground carefully before installing and no spike burr or crack is allowed to exist. In case the blade is shortened, it can be moved outward by loosening its press screw. When new blade is used, it should have a hardness of **30HRC-40HRC.**

i) In case the machine shall be not in use for a long term, it should coat anti-corrosive fat on surfaces of rolls and concerned parts to avoid occurrence of pinhole and rust. Before reusing, it should make an overhaul of the machine so as to avoid occurrence of accident.

j) If cooling water flows into the machine it means the flow of cooling water is larger and should be reduced. Loosen water drain bolt to discharge water in the gearbox or enlarge the pipe of water discharged.

mm). Feed raw materials and readjust the fineness you require. If paste-like materials with olors (such as paint, ink, coating or pigment etc.) are milled, adjust rolls until color on surface of roll is even or lighter color on the midst but darker colors on both ends. After rolls are adjusted well, push on the discharging blade.

b) The milling of materials are realized by squeezing and rubbing among fast roll, slow roll and middle roll each other and the fast roll has the role to bring out milled materials. As three rolls have different rotation speeds and linear speeds, wearing on surfaces of rolls are also different, therefore it is absolutely to avoid squeezing and rubbing among three rolls in case no materials are milled in three rolls.

c) In case discharging materials are thinner on the middle than those on both ends, you can increase flow of cooling water in operation. After a short time of heat expansion of the surfaces of rolls cause by rubbing, it can become straight and cooling water can then be suitably reduced. Anyway control should be made according to actual condition and it is absolutely not allowed to have no cooling water, as when heating up of the surfaces of rolls to a certain degree, they shall be peeled off or cause irregular deformation so that rolls cannot be used any more.

d) The rolls should avoid to mill materials with corrosiveness (except for stainless steel).

e) It should adjust gaps among fast roll, slow roll and middle roll each other at any time as they could be seized if they are over heat, or even cause brake of the motor and occurrence of accident.

f) The baffles couldn't be pressed tightly, and drip lubricant within contacted arcs at any time, and adjust working length of rolls as required. In case both ends of the roll is too hot, put a piece of paper between the support of material plate and the upper cover to reduce friction between the material plate and the roll thus to reduce temperature at both ends of the roll.

g) Take care of temperature of the bearings in normal operation and its temperature rising couldn't be higher than 35°C.

3. After Operation

First of all, loosen the scraper blade on the baffle no to contact with rolls, then loosen rolls and clean all parts of the equipment and make corrosion-proof treatment one by one.

Installation and Commissioning

1. Installation

Based on the foundation drawing of the machine you selected, first of all make the foundation well **(our factory only suggests to make foundation for model S405 three roll mill as follows and gives no requirement for other models)**. Leave square holes for anchor bolts, hoist the machine off the ground when the foundation is about dry, make anchor bolts run through holes of the machine, then put the machine on the foundation slowly with anchor bolts aiming at square holes, correct levelness by the leveler laterally and longitudinally and cast cement in square holes but keep the surface of the foundation plain and clean. At last, tighten screws when cement is completely dry. Note: the machine should be equipped with grounding wire to avoid accident of electric shock.

2. Commissioning

First of all, make well all preparation works before commissioning. Thoroughly clean all anti-corrosive grease and impurities on the machine, then carefully check again all hidden dangers which could affect commissioning and adjust the baffles and the discharging bucket off the surface of rolls, can then trail operation be started. During the course of trial operation, bearings have normal temperature rising, driving gears have good mesh without knocking sound, all rotating and moving parts are normal, can then performance running be carried out. Open the switch of cooling water, adjust suitable gaps between the fast roll and the middle roll as well as the slow roll and the middle roll, feed a bit of paste-like material with dark color to look the straightness of rolls, then adjust gaps smaller among rolls slowly until colors on surfaces of rolls are even or a bit lighter of middle shade, this means the machine runs well. At last measure milled materials by the grindometer and normal production can then be started.

VI. Operation of the Machine

The machine can be put into operation after it is installed and operated under no-load and no trouble is found, and following points should be paid attention:

1. Before Operation

Check surface of rolls to see it they are cleaning; check all lubricating parts if they are lubricated well; check the fast roll and the slow roll to see if they are disconnected with the middle roll and check the discharging scraper to see if it is normal.

2. In Operation

a) Open cooling water and start the machine, slowly adjust fast and slow rolls at suitable positions (if raw materials of soap or pencil core are milled, gaps between fast, slow and middle rolls should

effective working arcs at both ends of the slow roll and the middle roll to prevent overflow materials milled by three rolls out of both ends. The support of material plate is used to fix the baffles and adjust the joint between the arc of the baffle and the surface of the roll thus to avoid overflow of materials. Moreover, the baffles can be easily taken out for cleaning.

4. Cooling Part

In order to remove heat generated from the working surface of the roll due to squeezing and rubbing materials so as not to affect smoothness of the contact surface of the roll, there is the cooling water pipe which is mounted on the one end of the machine and can adjust the flow of cooling water in three rolls so as to keep rolls under the best condition in operation and to rise up milling fineness and efficiency. The return water flows into the sewer via the water bucket.

5. Adjustment Part

The adjustment is made by means of hand wheels mounted on four adjustment screws and springs between the axle seats. Rotate the hand wheels to force the spring to be compressed or ejected to make movement of the fast and slow rolls forward or backward so as to adjust fineness of milled materials.

6. Discharging Part

The discharging bucket is mounted on the support of the discharging bucket and the blade can be equipped at its exit. Adjust screw of the pressure sheet to make the blade contact closely on the surface of the fast roll. The position of the edge should be a bit higher than the center of the roll thus to easily scrap off milled materials stuck on the surface of the fast roll.