

Crushing Plant--ZYS High-Efficient Cone Crusher



# **ZYS** High-Efficient Cone Crusher

#### • Profile

The JOYAL ZYS High-Efficient Cone Crusher is a high-performance models optimized and improved on the basis of ZYS High-Efficient Cone Crusher.The ZYS High-Efficient Cone Crusher is widely used for secondary and fine crushing in the fields of mining, building materials, metallurgies and so on. The ZYS High-Efficient Cone Crusher can crush materials with middle and high hardness, such as, metal ore, basalt, granite, limestone, cobblestone, sandstone and so on.





For higher productivity, better reliability and flexibility, long service life, and better final product quality, the ZYS High-Efficient Cone Crusher is absolutely your best choice.

ZYS High-Efficient Cone Crusher offer several outstanding features such as excellent tramp release system, unique hydraulic lifting system, high crusher throw and reasonable cavity design, all of these features ensure the Symons type cone crusher can offer the unbeatable performance in secondary, tertiary and quaternary applications.

If your aggregate or mining business demands the 24-hours running, high-reduction, big capacity application, you will find the ZYS High-Efficient Cone Crusher optimized for your demands.

The innovations like the stable lubrication, excellent sealing feature, great abrasive material applied in key components and rugged construction effectively reduce the wear rate, extend the replacement period of the spare parts, evidently reduce the production cost in per ton hour material processed. All of these can help you to achieve the highest level of profitability.





## Componets













#### Working Principle >> E-Mail:joyal@crusherinc.com >> Http://www.joyalcrusher.com

Motor drives eccentric bushing to rotate via V-belts, pulley, shaft, pionion, gear. Mantle rotates with eccentric bushing, so mantle goes near and far from the concave, and crush stone into smaller size.

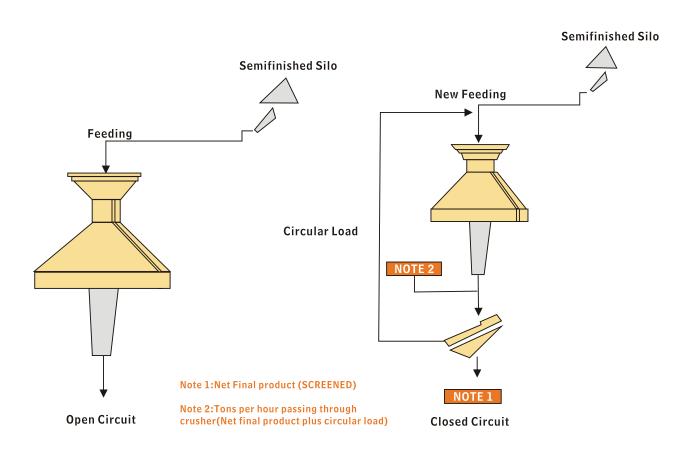








## Typical flow chart





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8. Widespread use

9. Separate Lubrication

#### 1. High-performance Combining optimal designing of chamber type with applying reasonable speed and stroke, to make this kind of machine does more work with the same dynamic cone diameter. Therefo, this machine is of high-performance and manufactring capacity compared with other cone crusher of the same type. Use Iminated crushing principle, to make more cubic shape materials and less needle-like materials. 2. Good products size composition The crusher applys for laminated crushing principle to make cubic shapes of final products stand for larger proportion. Acicular and flake shape products decrease and size fraction much more well-proportioned. 3. Good stability If there is metal or other non-broken material come to the chamber, metal going through protection device will release it and then reset automaticly. The protection device has fixed discharge opening returning point and the original discharge opening can returing back immediately after the metal goes through the crushing chamber. 4. Convenient Cleaning-up If the crusher stops under loading condition, hydralic cleaning system can clean up the crushing chamber quickly so that 5. High reliability. Adopting main shaft with big diameter, heavy main frame and separate automatic Control System of thin oil lubrication system, so that it guarantees robustness and reliable operation of the crusher. 0 6. Easy maintenance and operation All parts can be disassembled from top and the upper side, so that fixed cone and dynamic cone can be disassembled easily. Under high shock and vibration environment, bronze Bearing can keep excellent bearing capacity and it is much more economic and easy for maintenance. 0 7. Low production costs Due for big capacity, high reliability and easy maintenance, the production costs has been recuded greatly.

The speciality of ZYS High-Efficient Cone Crusher is maximizing the performance to apply to all kinds of crushing process:

ZYS High-Efficient Cone Crusher has different types of crushing chamber for choosing according to crushing process.

from special coarse crushing to fine crushing; from fixed crushing plant to mobile crushing plant.



#### Sketch of the cavity between standard and short head type

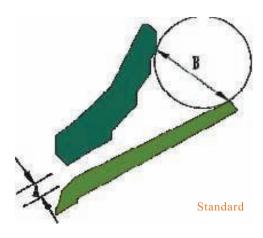
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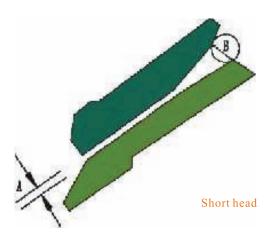














Specification chart in open circuit (STANDARD)

Model	Cavity	Recommend-ed minimum discharge	'	ning with min. ended discharge (mm)						r pass icated	•	arge						Power
		setting A(mm)	Opening Side "B"	Closed Side "B"	9	13	16	19	22	25	31	38	51	64	76	89	102	
36"	Fine	9	102	83	45	58	70	80	93									
(3')	Coarse	13	175	159		59	71	92	107	115	137	165						75
	Extra Coarse	25	178	163						129	145	175	198					
51"	Fine	13	137	109		106	_	145	153		183							
(4.25')	Medium	16	210	188			132	156	174	201	224	253						
	Coarse	19	241	216				171	198	217	249	295	349					185
	Extra Coarse	25	259	238						230	272	304	358	450				
66"	Fine	15	209	188				200	224	256	298	324						
(5.5')	Medium	22	241	213					252	286	330	380	417	437				240
	Coarse	25	269	241						299	353	417	453	634				
	Extra Coarse	38	368	331								431	476	680				
84"	Fine	19	278	253				381	406	499	615	726	849	1028				
(7')	Medium	25	334	303						605	721	800	994	1120	1284			400
	Coarse	31	369	334							786	835	1078	1250	1370	1450		]
	Extra Coarse	38	460	425								886	1179	1354	1478	1525	1637	





Specification chart in open circuit (SHORT HEAD)

Model	Cavity	Recommend-ed minimum discharge		ning with min. ended discharge (mm)						r passicated	sing I disch	arge				Power (KW)
		setting A(mm)	Opening Side "B"	Closed Side "B"	3	5	6	10	13	16	19	25	29	32	38	
36"	Fine	3	41	13	27	40	53	67	91							
(3')	Coarse	3	60	33	28	41	54	68	92	100						75
	Extra Coarse	6	76	51			58	72	93	112	127					
51"	Fine	3	64	29	36	57	83	102	134	160						
(4.25')	Medium	6	89	54			84	104	136	164						
	Coarse	8	105	70				110	157	180	202	224				155
	Extra Coarse	16	133	98							209	236				
66"	Fine	5	70	35		90	134	160	207							
(5.5')	Medium	6	89	54			137	164	210	253	280					240
	Coarse	10	133	98				190	253	282	304	330				
	Extra Coarse	13	133	117					253	282	309	337				
84"	Fine	5	105	51		189	271	340	361	404	470	509				
(7')	Medium	10	133	95				352	408	450	509	558	617			400
	Coarse	13	178	127					450	481	542	596	661	687		
	Extra Coarse	16	203	152						505	592	650	684	693	727	





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Specification chart in closed circuit (STANDARD)

Model	Cavity	Recommend-ed avity minimum discharge	Feed opening with min. recom-mended discharge setting A (mm)		10		square opening on circuit screen  13   16   19   22   25  ended closed side settings						31		38		50					
		setting A(mm)	Opening	Closed	10		10		13		16		19		19		22				32	
			Side "B"	Side "B"	I	II	I	II	Ι	II	I	II	Ι	II	I	II	I	II	I	II	I	II
36"	Fine	9	102	83	32	59	36	63	41	68	54	81	63	95	72	95	86	108	108	135	131	153
(3')	Coarse	13	175	159					41	68	54	81	68	99	77	99	90	113	108	135	131	153
	Extra Coarse	25	178	163									68	99								
51"	Fine	13	137	109					86	122	95	140	113	167	131	171	158	185	185	200		
(4.25')	Medium	16	210	188							108	158				185						252
	Coarse	19	241	216									126	189	149	194	171	221	198	_		
	Extra Coarse	25	259	238															203	248	234	279
66"	Fine	15	209	188							144	212	162	239	189	243	216	270	270	324		
(5.5')	Medium	22	241	213													225	279	279	338	297	351
	Coarse	25	269	241														284	342	306	360	
	Extra Coarse	38	368	331																	315	369
84"	Fine	19	278	253																		
(7')	Medium	25	334	303																		
	Coarse	31	369	334																		
	Extra Coarse	38	460	425																		









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Specification chart in closed circuit (SHORT HEAD)

		Recommend-ed	Feed one	ning with min.	Effe	ctive	sana	re or	oenir	וח חר	n circ	uit s	creei	า						
Model		minimum		ended discharge	3	01110	5		6	.g 0.	10	uit o	13	•	16		19		25	
		discharge		· ⊢		Recommended closed side settings														
		setting A(mm)	Opening	Closed	3		5		5		6		10		13		16		19	
		J ( ,	Side "B"	Side "B"	Ι	II	Ι	II	Ι	II	Ι	II	Ι	II	I	II	Ι	II	I	II
36"	Fine	3	41	13	14	27	18	36	27	40	45	59	63	77	72	99				
(3')	Coarse	3	60	33	14	27	18	36	27	40	45	59	63	77	72	99	86	122		
(0)	Extra Coarse		76	51				00			50	63	68	81	77	104		131	117	135
51"	Fine	3	64	29	18	36	32	63	50	72	68	99	90	117	113	153				
(4.25')	Medium	6	89	54							72	108	95	126	113	153				
	Coarse	8	105	70									99	135	126	180	158	225	180	234
	Extra Coarse	16	133	98													158	225	180	234
66"	Fine	5	70	35			59	117	81	126	122	180	158	198	189	243				
(5.5')	Medium	6	89	54							122	180	158	198	189	243	221	315	252	326
	Coarse	10	133	98									162	216	198	252	225	324	288	347
	Extra Coarse	13	133	117											198	252	225	324	288	358
84"	Fine	5	105	51			108	216	144	227	216	324	284	351	324	405	378	450		
(7')	Medium	10	133	95								_	_		_		378		450	544
. ,	Coarse	13	178	127											345	486	405	585	495	594
	Extra Coarse	16	203	152																





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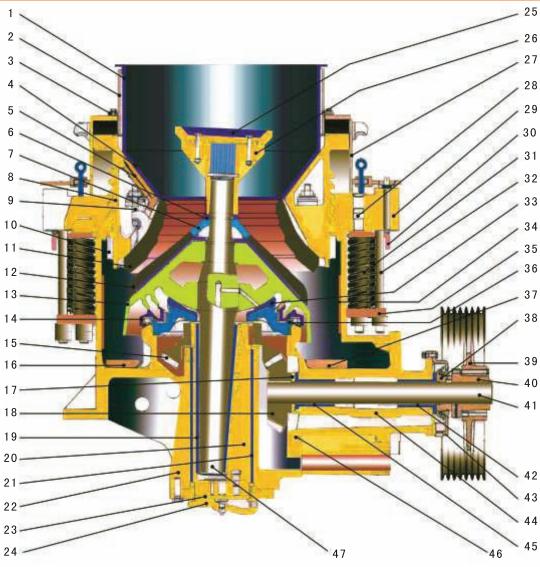
Machinery dimension(mm)

The model of crusher		36"	51"	66"	84"
Crusher centerline to mainframe flange	А	850	1000	1440	1650
Crusher centerline to countershaft housing face	В	880	1130	1400	1780
Crusher centerline to the end of countershaft	С	1870	2040	2450	2980
Main frame base to the bottom of main frame cap	D	455	630	810	1030
Max diameter of adjustment ring	Е	2000	2500	3280	4270
Main frame cap diameter	F	550	690	810	920
Main frame base to the top of adjustment ring	G	1100	1300	1550	1960
Main frame base to the top of feed hopper	Н	1720	2300	2690	3300
Location measure of anchor screw	J	660	880	1130	1245
Height required to disassembly the machine		2800	3600	4200	5400
Overall dimension		2865x2000x2190	3300x2500x2940	4105x3280x3505	5110x4270x4350

#### Weight list(kg)

Model of crusher	36"		51"		66"		84"			
	Standard	Short head	Standard	Short head	Standard	Short hea	d Standard	Short head		
Crusher complete	9980	10530	22460	22590	43270	43870	67360	70130		
Bowl,Bowl liner,Adjustment cap	1820	2040	4900	4350	10250	9160	14830	14330		
Head,Main shaft,Mantle,Feed plate	1680	2000	3630	4310	7580	9250	13970	17240		
Main frame	2630	,	5490		11430		18140			
Adjustment ring, Spring	2130		5490		8260		10800			
Coutershaft box, Countershaft, Crusher sheave	910	910			2130		3180			
Eccentric	540		1050		1910		3450			





- Feed hopper
- Bowl hopper
- Adjustment cap seal
- Feed cone
- 5 Cover plate
- Torch ring
- Main shaft sleeve
- 9 U-shaped bolt and washer
- 10 Adjustment ring dust collar
- 11 Bowl liner
- 12 Mantle
- 13 Head
- 14 Socket sealing ring
- 15 Gear
- 16 Arm guard
- 17 Pinion thrust washer
- 18 Pinion
- 19 Inner eccentric bushing
- 20 Eccentric
- 21 Outer eccentric bushing
- 22 Main frame
- 23 Step bearing plates
- 24 Main frame cap

- 25 Feed plate
- 26 Main shaft nut
- 27 Adjustment cap
- 28 Main frame pin
- 29 Adjustment ring
- 30 Upper spring segment
- 31 Spring
- 32 Spring bolt
- 33 Socket liner
- 34 Main frame liner
- 35 Lower spring segment
- 36 Socket
- 37 Countershaft box guard
- 38 Oil flinger
- 39 Crusher sheave
- 40 Sheave taper sleeve
- 41 Countershaft
- 42 Outer countershaft bushing
- 43 Oil flinger housing
- 44 Countershaft box
- 45 Inner countershaft bushing
- 46 Countershaft box seal
- 47 Main shaft









The JOYAL Crushing plant includes

vibrating feeder, jaw crusher, impact crusher or cone crusher, vibrating screen, belt conveyor and centrally electric controlling system, etc. The designed capacity is from 40t/h to 600t/h.

To meet customer's specific requirement for the stone crushing, we can also add other equipments such as cone crusher, dust catcher on the crushing plant.



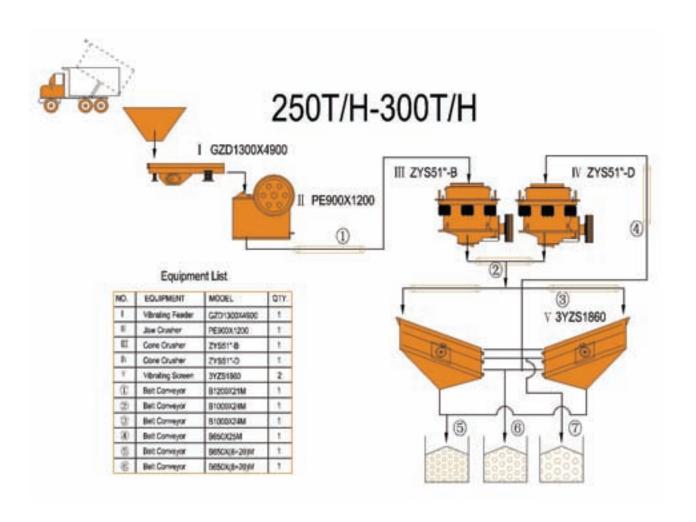
#### Process of Crushing Plant >> E-Mail:joyal@crusherinc.com >> Http://www.joyalcrusher.com

The Big materials are fed to the jaw crusher evenly and gradually by vibrating feeder through a hopper for the primary crushing.

After first crushing, the material will transferred to impact crusher or cone crusher by belt conveyor for secondary crush; the crushed materials will then transferred to vibrating screen for separating.

After being separated, the parts that can meet standard will be taken away as final products, while the other parts will be returned to impact crusher, thus forming a closed circuit.

Size of final products can be combined and graded according to customer's specific requirement. We can also equip dust catcher system to protect environment.





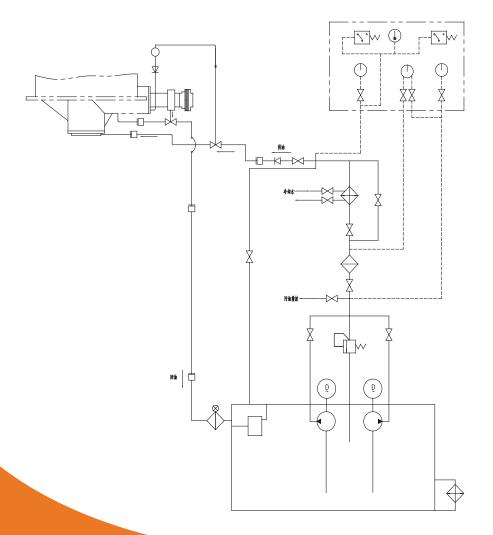
#### **The Lubricating System**

Since the friction surface receives much pressure, lubrication is very important to the crusher. The crusher is centrally lubricated with watery oil.

#### Oil route

There are two routes for the oil to enter the machine,

- >> one is through the oil hole at the bottom of the crusher, then to the hollow eccentric shaft surface, bowl-shaped bearing and the big and small gears through 3 separate ways.
- >> The other is through the hole in the transmission shaft support, then to the transmission bearing. The return route is a spill hole at the bottom of the small bevel gear and another spill hole in the dust-proof cover.





#### Adjustment and locking of hydraulic system

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- Start thin oil station before start the main unit, if the lubrication system is ok, start the main unit, then start the vibrating feeder if the machine running normal without load. Stop feeding before stop crusher, ores in crushing chamber is exhausted totally, stop the main unit, and stop the thin oil station at last.
- Defore start the thin oil station, open relative oil valve and switch, adjust the pressure adjust device, keep the pressure between 0.04-0.1MPa, the oil temperature should be in 30-40 ℃, if the temperature is too low, start the resistance heater first.
- Please refer to the electricity control cabinet instruction for all electric switch function. And put them in proper position before start the main unit.





# >> E-Mail:joyal@crusherinc.com >> Http://www.joyalcrusher.com Problem and solution

2. too much pressure difference between filter forwards and backwards 3. oil pump not good 3. overhaut or change oil pump Block in filter Clean the filter when pressure difference between filter forwards and backwards 3. oil pressure and oil temperature increase 4. oil temperature surpass 60°C but oil pressure not increases 4. oil temperature surpass 60°C but oil pressure not increases 5. oil level decreases 1. leak machine bottom end cap 2. leak in transmission shaft flange 3. block in bowl baring base or oil return tunnel 6. water enter oil, oil level increases 1. water pressure bigger oil pressure cooler 2. leak water in cooler 2. leak water in cooler 3. too much water return pipe 4. block in water return pipe 7. oil in water seal, oil 6. crusher vibrates strongly 7. oil in water seal, oil 7. oil and water seal 8. crusher vibrates strongly 7. oil team and backwards 7. oil team and find out the block point and remove 8. crusher vibrates strongly 8. crusher vibrates strongly 9. frequent vibrating during 1. not enough perssure in spring 1. tighten nut in spring or change the spring 1. tighten nut in spring or change the spring	Trouble	Cause	Trouble shooting
2. too much pressure difference between filter forwards and backwards 3. oil pump not good difference between filter forwards and backwards 3. oil pressure and oil demperature increase 4. oil temperature surpass 60°C but oil person oil path block difference surpass 0.05MPa 5. oil level decreases 5. oil level decreases 1. leak machine bottom end cap 2. leak in transmission shaft flange base or oil return tunnel dase or oil return tunnel descention oil pressure cooler 2. leak water in cooler 2. leak water in cooler 3. too much water in water seal 4. block in water return pipe difference surpass 0.05MPa 5. oil level decreases 1. leak machine bottom end cap in difference surpass on the block point and remove described by the machine and find out the causes and remove 1.2 stop the machine and fix bolt or change mat 3. stop the machine, check and clean the oil path and tunnel, adjust oil level and remove the the problem 1. water pressure bigger oil pressure cooler 2. leak water in cooler 2. leak water in cooler 3. too much water in water seal 4. block in water return pipe 4. clean the water return pipe 2. oil tank, change new oil 5. oil tunnel block 5. oil tunnel block 6. Oil tunnel block 6. oil tunnel block 7. oil in water seal, oil 6. oil tunnel block 7. oil in water seal, oil 7. oil in water seal 7. oil lack or dust in oil between 6. water vibrates strongly 7. oil tank and oil return pipe 7. oil tank and oil return pipe 8. crusher vibrates strongly 7. oil to damaged 7. oil temperature not increases 8. crusher vibrates strongly 7. oil temperature not increases 8. crusher vibrates strongly 7. oil temperature not increases 8. crusher vibrates strongly 7. oil temperature not increases 8. crusher vibrates strongly 7. oil temperature not increases 8. crusher vibrating during 7. oil temperature not increases 8. crusher vibrating during 7. oil temperature not increases 8. crusher vibrating during 7. oil temperature not increases 8. crusher vibrating during 7. not enough pressure in spring 7. oil temperature not increases	1. oil flow indicator shows no flow.	1. low oil temperature	1. heat oil
2. too much pressure difference between filter forwards and backwards 3. oil pressure and oil temperature increase 4. oil temperature surpass 60°C but oil pressure not increases 4. oil temperature surpass 60°C but oil pressure not increases 5. oil level decreases 1. leak machine bottom end cap 2. leak in transmission shaft flange 3. block in bowl baring base or oil return tunnel the oil path and tunnel, adjust oil level and remove the the problem 6. water enter oil, oil level increases 1. water pressure bigger oil pressure cooler than oil pressure 2. leak water in cooler 2. leak water in cooler 2. leak water return pipe oil tunnel block in water return pipe oil tunnel block in water return pipe 7. oil in water seal, oil oil level strongly 1. Oil tunnel block cone rotation 2. fine and sticky material feed 9. frequent vibrating during 1. not enough pressure in spring 2. fine and sticky material feed	Oil pump running but oil	2. oil path switch is not start properly	2. check oil path switch
between filter forwards and backwards 3. oil pressure and oil temperature increase 4. oil temperature surpass 60°C but oil pressure not increases 5. oil level decreases 1. leak machine bottom end cap 2. leak in transmission shaft flange 3. block in bowl baring base or oil return tunnel 6. water enter oil, oil level increases 1. water pressure bigger oil pressure cooler 2. leak water in cooler 2. leak water in water seal 4. block in water return pipe 7. oil in water seal, oil 6. crusher vibrates strongly 7. oil to water set one rotation 7. oil to machine 8. oil path and tunnel 9. frequent vibrating during 9. frequent vibrating during 1. not enough pressure in spring 1. tighten nut in spring or change the spring 1. tighten nut in spring or change the spring 1. tighten nut in spring or change the spring 1. tighten nut in spring or change the spring 1. tighten nut in spring or change the spring 1. tighten nut in spring or change the spring 2. tighten and find out the block point and remove Stop the machine and fix bolt or change mat 3. stop the machine and fix bolt or change mat 3. stop the machine, check and clean the oil path and tunnel, adjust oil level and remove the the problem 1. adjust the water pressure lower than oil pressure 2. check the leak parts 3. adjust water amount 4. clean the water return pipe 9. oil tank, change new oil Clean oil tank and oil return pipe 1. Oil tank and oil return pipe 2. bowl tile damaged 3. not enough gap between cone bushing 4. tighten nut in spring or change the spring 1. tighten nut in spring or change the spring	pressure less than 0.04Mpa	3. oil pump not good	3. overhaul or change oil pump
3. oil pressure and oil temperature increase 4. oil temperature surpass 60°C but oil pressure not increases 5. oil level decreases 6. oil level increases 6. water enter oil, oil level increases 7. leak machine bottom end cap 2. leak in transmission shaft flange base or oil return tunnel 6. water enter oil, oil level increases 7. oil return tunnel 8. water incooler 9. leak water in cooler 9. leak water in cooler 9. leak water in water seal 9. to much water in water seal 9. to much water return pipe 7. oil in water seal, oil 1. Oil lack or dust in oil between main unit and bushing 9. frequent vibrating during 1. not enough pressure in spring 1. tighten nut in spring or change the spring 1. tighten nut in spring or change the spring 1. tighten nut in spring or change the spring 1. tighten nut in spring or change the spring 1. tighten nut in spring or change the spring 1. tighten nut in spring or change the spring 1. tighten nut in spring or change the spring	2. too much pressure difference	Block in filter	Clean the filter when pressure
temperature increase 4. oil temperature surpass 60°C but oil pressure not increases  1. leak machine bottom end cap 2. leak in transmission shaft flange 3. block in bowl baring base or oil return tunnel  6. water enter oil, oil level increases  1. water pressure bigger oil pressure cooler 2. leak water in cooler 3. too much water in water seal 4. block in water return pipe 7. oil in water seal, oil temperature not increases 8. crusher vibrates strongly 7. oo fast cone rotation 7. of frequent vibrating during 9. frequent vibrating during 7. of fast cone rotation 7. of fast cone rotation 8. cout the block point and remove Stop the machine and check ball tile, bushing, thrust mat, find out the causes and remove 1. 2 stop the machine and fix bolt or change mat 3. stop the machine, check and clean the oil path and tunnel, adjust oil level and remove the the problem 1. adjust the water pressure lower than oil pressure 2. check the leak parts 3. adjust water amount 4. clean the water return pipe , oil tank, change new oil Clean oil tank and oil return pipe  1. Oil lack or dust in oil between main unit and bushing 2. bowl tile damaged 3. not enough gap between cone bushing 9. frequent vibrating during 1. not enough pressure in spring 2. fine and sticky material feed 1. tighten nut in spring or change the spring 1. tighten nut in spring or change the spring	between filter forwards and backwards		difference surpass 0.05MPa
4. oil temperature surpass 60°C but oil pressure not increases  1. leak machine bottom end cap 2. leak in transmission shaft flange 3. block in bowl baring base or oil return tunnel  6. water enter oil, oil level increases  1. water pressure bigger oil pressure cooler 2. leak water in cooler 3. too much water in water seal 4. block in water return pipe 7. oil in water seal, oil temperature not increases 8. crusher vibrates strongly 1. Oil tack or dust in oil between main unit and bushing 2. bowl tile damaged 3. not enough pressure in spring 9. frequent vibrating during 1. roll in each of the machine and check ball tile, bushing, thrust mat, find out the causes and remove 1.2 stop the machine and check ball tile, bushing, thrust mat, find out the causes and remove 1.2 stop the machine and check ball tile, bushing, thrust mat, find out the causes and remove 1.2 stop the machine and check ball tile, bushing, thrust mat, find out the causes and remove 1.2 stop the machine and check ball tile, bushing, thrust mat, find out the causes and remove 1.2 stop the machine, check ball tile, bushing, thrust mat, find out the causes and remove 1.2 stop the machine and check ball tile, bushing, thrust mat, find out the causes and remove 1.2 stop the machine and check ball tile, bushing, thrust mat, find out the causes and check ball tile, bushing, thrust mat, find out the causes and check ball tile, bushing, thrust mat, find out the causes and check ball tile, bushing, thrust mat, find out the causes and check ball tile, bushing, thrust mat, find out the causes and check ball tile, bushing, thrust mat, find out the causes and check ball tile, bushing, thrust mat, find out the causes and check ball tile, bushing the bushing that the value and fix bushing the oil path and tunnel, adjust oil level and fix belt and the oil path and tunnel, adjust oil level and remove the the oil path and tunnel, adjust oil level and fix belt and the oil path and tunnel, adjust oil level and fix belt and the oil path and tunnel, adjust oil level an	3. oil pressure and oil	Oil pipe or oil path block	Stop the machine and find
but oil pressure not increases  1. leak machine bottom end cap 2. leak in transmission shaft flange 3. block in bowl baring base or oil return tunnel 6. water enter oil, oil level increases 1. water pressure bigger oil pressure cooler 2. leak water in cooler 3. too much water in water seal 4. block in water return pipe 7. oil in water seal, oil temperature not increases 8. crusher vibrates strongly 1. Oil tack or dust in oil between main unit and bushing 2. brequent vibrating during 9. frequent vibrating during 1. leak machine bottom end cap 1,2 stop the machine, check and clean the oil path and tunnel, adjust oil level and remove the the problem 1. adjust the water pressure lower than oil pressure 2. check the leak parts 3. adjust water amount 4. clean the water return pipe , oil tank, change new oil Clean oil tank and oil return pipe  Too fast cone rotation  1. Oil lack or dust in oil between main unit and bushing 2. bowl tile damaged 3. not enough gap between cone bushing 4. tighten nut in spring or change the spring 1. tighten nut in spring or change the spring 1. tighten nut in spring or change the spring	temperature increase		out the block point and remove
find out the causes and remove  1. leak machine bottom end cap 2. leak in transmission shaft flange 3. block in bowl baring base or oil return tunnel 6. water enter oil, oil level increases 1. water pressure bigger oil pressure cooler 2. leak water in cooler 3. too much water in water seal 4. block in water return pipe 7. oil in water seal, oil temperature not increases 8. crusher vibrates strongly Too fast cone rotation 1. leak machine bottom end cap 1,2 stop the machine and fix bolt or change mat 3. stop the machine, check and clean the oil path and tunnel, adjust oil level and remove the the problem 1. adjust the water pressure lower than oil pressure 2. check the leak parts 3. adjust water amount 4. clean the water return pipe , oil tank, change new oil Clean oil tank and oil return pipe temperature not increases 8. crusher vibrates strongly Too fast cone rotation 5. Too fast cone rotation 6. Water pressure bigger 1. Oil lack or dust in oil between main unit and bushing 2. bowl tile damaged 3. and remove the the problem 4. cleak parts 3. adjust water amount 4. clean the water return pipe , oil tank, change new oil Clean oil tank and oil return pipe  Too fast cone rotation 7. Oil in water seal, oil 8. Crusher vibrates strongly 8. Stop the machine, check the causes and do the needful 8. Too fast cone rotation 8. Stop the machine, check the causes and do the needful 9. Frequent vibrating during 1. not enough pressure in spring 1. tighten nut in spring or change the spring 1. tighten nut in spring or change the spring	4. oil temperature surpass 60 $^{\circ}\mathrm{C}$	Problem in rolling rubbing parts	Stop the machine and check ball tile,
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2. leak in transmission shaft flange 3. block in bowl baring base or oil return tunnel the oil path and tunnel, adjust oil level and remove the the problem  1. water pressure bigger oil pressure cooler 2. leak water in cooler 3. too much water in water seal 4. block in water return pipe 7. oil in water seal, oil temperature not increases 8. crusher vibrates strongly 1. Oil lack or dust in oil between main unit and bushing 2. bowl tile damaged 3. not enough gap between cone bushing 9. frequent vibrating during machine working  1. leak in transmission shaft flange fix bolt or change mat 3. stop the machine, check and clean the oil path and tunnel, adjust oil level and remove the the problem 1. adjust the water pressure lower than oil pressure 2. check the leak parts 3. adjust water amount 4. clean the water return pipe , oil tank, change new oil Clean oil tank and oil return pipe  Stop the machine, check the causes and do the needful 1. not enough pressure in spring 1. tighten nut in spring or change the spring machine working 1. tighten nut in spring or change the spring			find out the causes and remove
3. block in bowl baring base or oil return tunnel the oil path and tunnel, adjust oil level and remove the the problem  1. water pressure bigger oil pressure cooler than oil pressure 2. leak water in cooler 2. check the leak parts 3. too much water in water seal 3. adjust water amount 4. block in water return pipe 4. clean the water return pipe oil tank, change new oil  7. oil in water seal, oil Oil tunnel block Clean oil tank and oil return pipe temperature not increases 8. crusher vibrates strongly  1. Oil lack or dust in oil between main unit and bushing 2. bowl tile damaged 3. not enough gap between cone bushing  9. frequent vibrating during 1. not enough pressure in spring 2. fine and sticky material feed  1. stop the machine, check and clean the oil path and tunnel, adjust oil level and tennel tunnel, adjust oil level and tennel tunnel, adjust oil level and remove the time problem  1. adjust the water pressure lower than oil pressure 2. check the leak parts 3. adjust water amount 4. clean the water return pipe 4. clean oil tank and oil return pipe 5. top the machine, check the causes and do the needful 5. top the machine, check the causes and do the needful 6. water enter oil, oil level and remove the time problem 6. water pressure lower than oil pressure 6. water pressure lower than oil pressure 6. water pressure lower than oil pressure 7. oil tank, change new oil 7. oil tank, change new oil 8. clean the water return pipe 9. to leak yater amount 9. stop the machine, check the causes and do the needful 9. frequent vibrating during 9. frequent vibrating during 1. tighten nut in spring or change the spring	5. oil level decreases	1. leak machine bottom end cap	1,2 stop the machine and
base or oil return tunnel  the oil path and tunnel, adjust oil level and remove the the problem  1. water pressure bigger oil pressure cooler than oil pressure  2. leak water in cooler  3. too much water in water seal  4. block in water return pipe  7. oil in water seal, oil  temperature not increases  8. crusher vibrates strongly  1. Oil lack or dust in oil between main unit and bushing  2. bowl tile damaged  3. not enough gap between cone bushing  9. frequent vibrating during  1. water pressure bigger  1. adjust the water pressure lower  than oil pressure  2. check the leak parts  3. adjust water amount  4. clean the water return pipe  , oil tank, change new oil  Clean oil tank and oil return pipe  Stop the machine, check the  causes and do the needful  1. tighten nut in spring or change the spring  1. tighten nut in spring or change the spring		2. leak in transmission shaft flange	fix bolt or change mat
remove the the problem  1. water enter oil, oil level increases  1. water pressure bigger oil pressure cooler 2. leak water in cooler 3. too much water in water seal 4. block in water return pipe 4. clean the water return pipe 7. oil in water seal, oil temperature not increases 8. crusher vibrates strongly 1. Oil lack or dust in oil between main unit and bushing 2. bowl tile damaged 3. not enough gap between cone bushing  1. dijust the water pressure lower than oil pressure 2. check the leak parts 3. adjust water amount 4. clean the water return pipe , oil tank, change new oil Clean oil tank and oil return pipe  Stop the machine, check the causes and do the needful  1. adjust the water pressure lower college pressure 2. check the leak parts 3. adjust water amount 4. clean the water return pipe  Clean oil tank and oil return pipe  Stop the machine, check the causes and do the needful 3. not enough pressure in spring 4. tighten nut in spring or change the spring machine working  1. tighten nut in spring or change the spring		3. block in bowl baring	3. stop the machine, check and clean
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oil pressure cooler 2. leak water in cooler 3. too much water in water seal 4. block in water return pipe 4. clean the water return pipe 5. oil tank, change new oil 6. Clean oil tank and oil return pipe 7. oil in water seal, oil 7. oil in water seal, oil 8. crusher vibrates strongly 7. oil lack or dust in oil between 7. oil at and bushing 8. crusher vibrates strongly 9. frequent vibrating during 7. oil in water seal, oil 9. frequent vibrating during 7. oil in water seal, oil 9. frequent vibrating during 1. not enough pressure in spring 1. tighten nut in spring or change the spring			remove the the problem
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3. too much water in water seal 4. block in water return pipe 4. clean the water return pipe 5. oil tank, change new oil 6. Clean oil tank and oil return pipe 7. oil in water seal, oil 8. crusher vibrates strongly 7. oil lack or dust in oil between 7. oil lack or dust in oil between 7. oil lack or dust in oil between 8. crusher vibrates strongly 8. crusher vibrates strongly 9. bowl tile damaged 9. frequent vibrating during 9. frequent vibrating during 9. frequent vibrating during 1. not enough pressure in spring 2. fine and sticky material feed 1. dighten nut in spring or change the spring 1. tighten nut in spring or change the spring		oil pressure cooler	than oil pressure
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, oil tank, change new oil  7. oil in water seal, oil temperature not increases  8. crusher vibrates strongly  1. Oil lack or dust in oil between main unit and bushing 2. bowl tile damaged 3. not enough gap between cone bushing  9. frequent vibrating during machine working  , oil tank, change new oil Clean oil tank and oil return pipe  Stop the machine, check the causes and do the needful  1. tighten nut in spring or change the spring  1. tighten nut in spring or change the spring		3. too much water in water seal	3. adjust water amount
7. oil in water seal, oil temperature not increases 8. crusher vibrates strongly Too fast cone rotation main unit and bushing 2. bowl tile damaged 3. not enough gap between cone bushing 9. frequent vibrating during machine working  Oil tunnel block Clean oil tank and oil return pipe  Stop the machine, check the causes and do the needful  1. tighten nut in spring or change the spring 2. fine and sticky material feed		4. block in water return pipe	4. clean the water return pipe
temperature not increases  8. crusher vibrates strongly  1. Oil lack or dust in oil between  Too fast cone rotation  main unit and bushing  2. bowl tile damaged  3. not enough gap between  cone bushing  9. frequent vibrating during  machine working  1. Oil lack or dust in oil between  causes and do the needful  1. tighten nut in spring or change the spring  2. fine and sticky material feed			, oil tank, change new oil
8. crusher vibrates strongly  Too fast cone rotation  1. Oil lack or dust in oil between main unit and bushing 2. bowl tile damaged 3. not enough gap between cone bushing  9. frequent vibrating during machine working  1. Oil lack or dust in oil between Stop the machine, check the causes and do the needful  1. tighten nut in spring or change the spring 2. fine and sticky material feed	7. oil in water seal, oil	Oil tunnel block	Clean oil tank and oil return pipe
Too fast cone rotation  main unit and bushing 2. bowl tile damaged 3. not enough gap between cone bushing  9. frequent vibrating during machine working  Stop the machine, check the causes and do the needful  1. tighten nut in spring or change the spring 2. fine and sticky material feed	temperature not increases		
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3. not enough gap between cone bushing  9. frequent vibrating during  1. not enough pressure in spring  2. fine and sticky material feed  1. tighten nut in spring or change the spring	Too fast cone rotation	main unit and bushing	Stop the machine, check the
cone bushing  9. frequent vibrating during  1. not enough pressure in spring  2. fine and sticky material feed  1. tighten nut in spring or change the spring		2. bowl tile damaged	causes and do the needful
9. frequent vibrating during 1. not enough pressure in spring 2. fine and sticky material feed 1. tighten nut in spring or change the spring		3. not enough gap between	
machine working  2. fine and sticky material feed		cone bushing	
	9. frequent vibrating during	1. not enough pressure in spring	1. tighten nut in spring or change the spring
3. uneven or too much feeding 2,3. feed properly	machine working	2. fine and sticky material feed	
		3. uneven or too much feeding	2,3. feed properly
10. crushing chamber moves up with Uncrushed material falls into Remove iron before feeding,	10. crushing chamber moves up with	Uncrushed material falls into	Remove iron before feeding,
strong noise then work normally crushing chamber, which will use metal detector	strong noise then work normally	crushing chamber, which will	use metal detector
cause main shaft broken		cause main shaft broken	





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