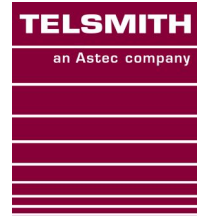


Lubrication & Maintenance Schedule

TelSmith Silver Bullet Series Gyrasphere Crushers

Lubrication or Maintenance Item:	Daily		Hourly	Weekly	Monthly	Annually
	Before Start-up	After Start-up				
REMOVE DIRT AND SPILLAGE FROM AROUND THE CRUSHER.	•					
REMOVE DUST AND DIRT FROM DRIVE MOTOR.	•					
INSPECT ALL CHUTES AND HOPPERS FOR WEAR. REMOVE ANY OBSTRUCTIONS.	•					
VERIFY THAT CRUSHING CHAMBER IS CLEAR.	•					
REMOVE ANY MATERIAL OR DEBRIS FROM THE FRAME ARMS.	•					
INSPECT FRAME ARM SHIELDS AND FRAME LINER FOR WEAR.	•					
INSPECT ROTARY SEAL RING FOR WEAR.	•					
REMOVE DUST AND DIRT FROM LUBRICATION SYSTEM.	•					
INSPECT LUBRICATION SYSTEM FOR LEAKS.	•					
CHECK LUBRICATION SYSTEM OIL LEVEL. ADD OIL IF LOW.	•					
OPERATE OIL PUMP FOR AT LEAST 15 MINUTES BEFORE STARTING CRUSHER.	•					
VERIFY THAT ALARM HORN SOUNDS WHEN OIL PUMP IS STARTED.	•					
VERIFY THAT ALARM HORN STOPS WHEN OIL CIRCULATES THROUGH CRUSHER.	•					
CHECK THAT OIL FLOW IS VISIBLE AT THE OIL RETURN SCREEN / FILTER.	•					
CHECK THAT OIL FLOW IS VISIBLE IN THE COUNTERSHAFT BOX SIGHT GAUGE.	•					
VERIFY THAT A <u>SLOW DRIP</u> OF OIL IS VISIBLE AT THE OIL PUMP SEAL.	•					

Warning: Lockout/tagout power to crusher drive before performing any lubrication, maintenance, adjustment or repair procedures!
Shut-off fuel supply and disconnect batteries if crusher is powered by a diesel engine.



Lubrication & Maintenance Schedule

TelSmith Silver Bullet Series Gyrasphere Crushers

Lubrication or Maintenance Item:	Daily		Hourly	Weekly	Monthly	Annually
	Before Start-up	After Start-up				
CHECK DIESEL ENGINE FLUID LEVELS (IF EQUIPPED). REFER TO ENGINE MANUFACTURER'S MANUAL FOR INSTRUCTIONS.	•					
REMOVE BUILT-UP DIRT FROM RELIEF CYLINDERS.	•					
LUBRICATE RELIEF CYLINDER COUPLINGS.	•					
REMOVE DUST AND DIRT FROM HYDRAULIC SYSTEM.	•					
CHECK HYDRAULIC SYSTEM FOR LEAKS.	•					
CHECK HYDRAULIC SYSTEM OIL LEVEL. ADD OIL IF LOW.	•					
CHECK THE HYDRAULIC RELIEF PRESSURE (SEE OPERATOR'S MANUAL FOR PRESSURE SETTING APPLICABLE TO YOUR CRUSHER MODEL).	•	•	EVERY 4 HRS.			
DEPRESS HORN TEST BUTTON. ALARM HORN MUST SOUND.	•	•	EVERY 4 HRS.			
CHECK LUBRICATION SYSTEM OIL PRESSURE AND FLOW. BE SURE THAT NORMAL READINGS ARE INDICATED.	•	•	EVERY 4 HRS.			
CHECK THE RETURN LINE OIL TEMPERATURE: <ul style="list-style-type: none"> – OIL MUST BE AT LEAST <u>50°F</u> BEFORE CRUSHER IS STARTED (10°C) – OIL MUST BE AT LEAST <u>70°F</u> BEFORE CRUSHING BEGINS (21°C) – OIL MUST NOT EXCEED <u>125°F</u> AT ANY TIME (52°C) 	•	•	EVERY 4 HRS.			
LISTEN FOR ANY UNUSUAL NOISES OR VIBRATIONS AFTER CRUSHER IS STARTED.		•				
CHECK THAT FEED IS DISTRIBUTED 360° AROUND CRUSHING CHAMBER.		•				

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Lubrication & Maintenance Schedule

TelSmith Silver Bullet Series Gyrasphere Crushers

Lubrication or Maintenance Item:	Daily		Hourly	Weekly	Monthly	Annually
	Before Start-up	After Start-up				
VERIFY THAT FEED IS PROPERLY GRADED AND FREE OF FINES OR UNCRUSHABLES.		•				
VERIFY THAT THE HEAD TURNS SLOWLY COUNTERCLOCKWISE AFTER FEED IS INTRODUCED.		•				
CHECK THE DISCHARGE CONVEYOR FOR PROPER OPERATION. BE SURE THERE IS NO SPILLAGE OR BACKING-UP OF MATERIAL.		•				
VERIFY THAT NO UPPER FRAME MOVEMENT IS OCCURRING.		•				
VERIFY THAT POWER DRAW IS WITHIN NORMAL LIMITS.		•				
CHECK THAT THE OIL RETURN SCREEN/STRAINER IS FREE OF METAL PARTICLES.		•				
CHECK THAT THE LUBRICATION SYSTEM FILTER INDICATOR IS IN THE OK ZONE. (CHECK AT NORMAL OPERATING TEMPERATURE WITH OIL PUMP ON)		•	EVERY 4 HRS.			
CHECK THAT <u>BOTH</u> HYDRAULIC SYSTEM FILTER INDICATORS ARE GREEN. (CHECK AT NORMAL OPERATING TEMPERATURE WITH HYDRAULIC PUMP ON)		•	EVERY 4 HRS.			
CHECK MANTLE AND CONCAVE RING FOR LOOSENESS, CRACKS OR WEAR.				•		
CHECK DISTRIBUTOR PLATE FOR LOOSENESS OR WEAR (FC ONLY).				•		
VERIFY THAT THE HEAD ROTATES FREELY COUNTERCLOCKWISE BY HAND, INDEPENDENT OF ECCENTRIC.				•		
INSPECT ALL HOSES AND LINES FOR WEAR OR FATIGUE.				•		
INSPECT AND CLEAN ALL GAUGES AND SIGHT GLASSES.				•		

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Lubrication & Maintenance Schedule

Telsmith Silver Bullet Series Gyrasphere Crushers

Lubrication or Maintenance Item:	Daily		Hourly	Weekly	Monthly	Annually
	Before Start-up	After Start-up				
PERFORM LUBRICATION SYSTEM OIL ANALYSIS.				•		
INSPECT THE OIL TANK BREATHER. REPLACE IF CLOGGED.				•		
CHECK LUBRICATION SYSTEM OIL COOLER FOR LEAKS OR DAMAGE.				•		
REMOVE DIRT FROM LUBRICATION SYSTEM OIL COOLER. (FAN TYPE AIR-OIL COOLER ONLY)				•		
REMOVE DIRT FROM HYDRAULIC SYSTEM OIL COOLER.				•		
REMOVE DIRT FROM SHEAVES.				•		
CHECK SHEAVES FOR WEAR OR LOOSENESS.				•		
INSPECT V-BELTS FOR DAMAGE OR WEAR. CHECK V-BELT TENSION.				•		
REMOVE ANY BUILT-UP DIRT FROM THE POWER ROTATOR.				•		
INSPECT THE POWER ROTATOR FOR OBVIOUS DAMAGE OR WEAR.				•		
LUBRICATE THE BUTTRESS THREADS.				•		
UNLOCK THE SUPPORT BOWL AND ROTATE IT BACK-AND-FORTH SEVERAL TIMES.				•		
MEASURE THE DISCHARGE SETTING.				•		
CHECK GEAR BACKLASH. RECORD IN SERVICE LOG.					•	
CHECK OIL LEVEL IN THE OIL PUMP GEAR REDUCER(WHERE APPLICABLE*). ADD OIL IF LOW.					•	
CHECK AMMETER FOR PROPER OPERATION.					•	

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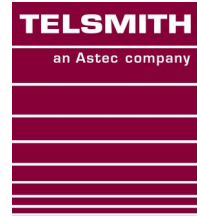
Lubrication & Maintenance Schedule

TelSmith Silver Bullet Series Gyrasphere Crushers

Lubrication or Maintenance Item:	Daily		Hourly	Weekly	Monthly	Annually
	Before Start-up	After Start-up				
CHECK FOR LOOSE NUTS AND BOLTS ON SUPPORT STRUCTURE AND CRUSHER.					•	
CHECK SUPPORT STRUCTURE FOR LOOSE OR DAMAGED MEMBERS.					•	
CHECK MAIN FRAME FOR CRACKS.					•	
CHECK UPPER FRAME FOR CRACKS.					•	
CHANGE THE POWER ROTATOR GEARBOX OIL.						•
CHANGE OIL IN HYDRAULIC RESERVOIR. REPLACE SUCTION STRAINER AND BOTH OIL FILTER ELEMENTS.						•
CLEAN OUT ALL CHUTES, HOPPERS, AND ROCK BOXES.						•
LUBRICATE OIL PUMP BEARINGS(WHERE APPLICABLE*).			EVERY 500 HRS.			
CHANGE THE LUBRICATION SYSTEM OIL. REPLACE OIL FILTER ELEMENTS.			EVERY 600 HRS.			
DRAIN AND REFILL OIL PUMP GEAR REDUCER. (WHERE APPLICABLE*)			EVERY 2000 HRS.			

*Early Lubrication systems utilized a horizontal oil pump assembly, current models utilize an in tank style which requires no maintenance.

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Lubrication & Maintenance Schedule

TelSmith Silver Bullet Series Gyrasphere Crushers

Lubrication or Maintenance Item:	Daily		Hourly	Weekly	Monthly	Annually
	Before Start-up	After Start-up				
TIGHTEN OR REPLACE OIL PUMP SEAL AS REQUIRED. (WHERE APPLICABLE*)	REFER TO PUMP MANUFACTURER'S MANUAL FOR INSTRUCTIONS AND SERVICE INTERVALS.					
ADJUST OIL PUMP END CLEARANCE AS REQUIRED. (WHERE APPLICABLE*)						
LUBRICATE CRUSHER DRIVE MOTOR.	REFER TO MOTOR MANUFACTURER'S MANUAL FOR INSTRUCTIONS AND SERVICE INTERVALS.					
LUBRICATE OIL COOLER FAN MOTOR. (LUBRICATION SYSTEMS EQUIPPED WITH AIR-OIL COOLER ONLY)						
LUBRICATE OIL PUMP MOTOR.						
LUBRICATE HYDRAULIC PUMP MOTOR.						
PERFORM DIESEL ENGINE SCHEDULED MAINTENANCE (IF EQUIPPED).	REFER TO ENGINE MANUFACTURER'S MANUAL FOR INSTRUCTIONS AND SERVICE INTERVALS.					

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