

SAR CHESHMEH CONCENTRATOR EXPANSION PROJECT PHASE 1	EQUIPMENT DATA SHEETS FOR 32' x 16' F/F SAG MILL	SAR CHESHMEH COPPER MINING COMPANY
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EQUIPMENT DATA SHEETS  
SAR CHESHMEH COOPER PROJECT, IRAN  
32'X 16' F/F SAG MILL

02-0038 0048

EQUIPMENT NO: E1-30-2110-01

Note: Revision E marked by ⇒

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Model/Size: 32' x 16' F/F (14.50' EGL) SAG Mill      9754mm x 4878mm (4420mm EGL)

Type of mill: SAG Mill, Wet Grinding

Media Type/Size: Grinding Balls / 5" Maximum (127 mm)      Rockwell "C" hardness 58-65

Ball Volume and Estimated Weight: 15% of mill volume = 2050 ft<sup>3</sup> (58 m<sup>3</sup>), 594 500 lbs ( 269,660 kg)

Maximum Volumetric Load: 35%

Feed and product material physical characteristic: Before grinding -250 mm , after primary grinding -5 mm

Working hours per year: 7440 hours

Efficiency: 90% - 97% gear efficiency

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Mill Type Discharge: Grate Discharge

Mill Diameter, (Inside Shell): 32' (9754 mm)

Nominal Mill Length: 16' F/F (4878 mm)      Effective Grinding Length: 14.5' EGL (4420 mm)

Mill Speed: 10.52 RPM at 77% Cs Critical Speed      Mill Rotation : Dual rotation - GA dwg E1-30-MD-2 (85-340F01042)

Designed for Metal Liners: Yes

Feed Apparatus:      Type: Retractable Feed Chute with wheels, for mounting on rails

Method of Removal: Retractable, on rails (Rails by others)

Lining Material: Chr -Moly Abrasion Resistant Steel      BHN: 325 - 375

Weight: 21,000 lbs (9,545 kg)

Shell:      Thickness: 2.75" (70 mm)      Material: ASTM A-36 / Equivalent

Number of Sections: 3 x 120 degree flanged segments

Weight Total: 209,000 lbs (95,000 kg)      (Estimated)

Weight of Largest Section: 69,667 lbs (31,667 kg)      (Estimated)

Number of Manholes: not required

Bolt Sizes: M56 Shell / Head & Shell / Shell      ←

Heads:      Weight: 156,690 lbs / Head (71,222 kg)      (Estimated)

Material: DIN GGG50 Ductile Iron

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Number of Pieces: 3 x 120 Degree segments / head

Weight of Largest Piece: 52,230 lbs (23,740 kg) (Estimated)

Trunnions: Weight: 45,800 lbs (20,820 kg) each (Estimated)

Material: DIN GGG50 Ductile Iron

Number of Pieces: One (1) Feed Trunnion, One (1) Discharge Trunnion

Trunnion Bearings: Type: Hydrostatic Sleeve - self alignment type Material: High lead bronze SAE 67

Feed End Size: 102" x 24" (2591mm x 610mm) Discharge End Size: 102" x 24" (2591mm x 610mm)

Weight: 24,000 lbs (10,910 kg) each bearing

Lubrication Method: External high pressure lift

Jacking Oil Method: N/A

(2 x 11kW) / (3 x 30 kW)

Lubrication Pumps: Included: Quantity: L.P. (2) / H.P. (3) Motor: L.P. (2 x 15 HP) / H.P. (3 x 40 HP) ←  
Pinion Bearings (2 x 1.5 HP)

Bearing Temperature Sensors: Yes, 100 OHM Platinum RTD

Max. allowable bearing temperature: 8° C above normal operating (75° C absolute max.)

Oil Pressure Sensors: Yes, on Trunnion Bearing oil supply line

Ring Gear: Type of Gear: Single Helical Service Factor: Durability / Strength: 1.84/2.57

Helical Angle: 7 degrees Number of gear sections: four 90° sections

Face Width: 32 inches ((813mm)

Outside Diameter: 446.74 inches (11347mm)

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Material: Cast alloy steel DIN G 35CrNiMo 6.6

Hardness: 295 BHN AGMA Q #: 10

Number of Teeth: 386 Weight: 49,300 kg total (Estimated)

Lubrication Method: Automatic air operated spray

Pinion: Pinion rev/min: 176.47 RPM Qty: two (2) ← Number of Teeth: 23

Pinion Bearing Make: SKF ← B10 Rating: 100,000 Hours

Pinion Bearing Size: 23276 Lubrication: Oil lubricated, integral lube system

Pinion Shaft - Material: Forged alloy steel - DIN G 30NiCrMo8 Diameter: 28.77 O.D. (731 mm)

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Hardness: 365 BHN AGMA Q #: 12

Bearing Temperature Sensor: Yes Bearing seal: Taconite ⇐

Pinion Reversible: Yes

Motor: Motor Type: Two (2) Fixed Speed Quadramatic Synchronous Motors with Brushless Exciters

Motor Speed: 176.47 RPM HP: 2 x 5 500 HP (2 x 4101 KW)

Reducer: Make/Size: N/A

Ratio: \_\_\_\_\_ Service Factor: \_\_\_\_\_

Clutch: Make: Eaton Airflex Size: 60VC1600 Dual Wide

Guard Included: Yes Type: Fabricated Steel

Air Required: 32 ft³/min, 100 psi (0.90 m³/min, 7.0 bar) per clutch engagement x 2 clutches ⇐

Feed Trunnions Liner: Steel Fabrication - Sandwheel type

Material: ASTM A-36, Rubber-Covered

Internal Liner Diameter: 72.0" (1829mm)

Internal Spiral: N/A

Discharge Trunnion Liner: Steel Fabrication, Rubber-Covered

Material: ASTM A-36, Rubber-Covered

Inside Liner Diameter: 75.5" (1918 mm)

Integral Spiral: N/A 02-0038 0051

Trommel Screen: Material: N/A

Hole Size: \_\_\_\_\_

Spiral: \_\_\_\_\_

Retention on Discharge: \_\_\_\_\_

Inside Diameter: \_\_\_\_\_

Feed End Liners: Material/Thickness: Cr-Moly Abrasion and Impact Resistant Steel BHN: 325 - 375

3" (76mm) thick plates with 6" (152mm) high Integral Lifters

Weight - Total: 189,000 lbs (85,910 kg) (Estimated) Heaviest Piece: 2,900 lbs (1,318 kg)

Bolt Size: M48 Type: SAE Grade 5, Oval Head Liner Bolts

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