Trommel Screen Technical Parameters and Model Selection Guide

1. Product Overview and Confirmed Operating Range

A trommel screen, also called a rotary drum screen or drum sieve, separates bulk material by particle size through a rotating, slightly inclined cylindrical screening drum.

Technical Note
Published capacity is a nominal catalogue range. Actual throughput depends on feed gradation, moisture, clay content, bulk density, screen aperture and required separation accuracy.

Equipment Type:
Stationary Rotary Trommel Screen

Model Range:
GS1.2×3.5 to TGS2.4×8.0

Drum Diameter:
1,200–2,400 mm

Drum Length:
3,500–8,000 mm

Drum Speed:
9–17 r/min

Drum Gradient:
2–2.5 degrees

Installed Power:
4–37 kW

Published Capacity:
30–300 t/h

Typical Duties:
Mining, quarrying, aggregate and mineral classification

Confirmed Technical Parameters

Model	Drum Diameter (mm)	Drum Length (mm)	Drum Speed (r/min)	Gradient (degrees)	Power (kW)	Published Capacity (t/h)
GS1.2×3.5	1,200	3,500	17	2-2.5	4	30-80
GS1.5×5.0	1,500	5,000	14	2-2.5	7.5	30-150
TGS1.8×6.0	1,800	6,000	12	2-2.5	18.5	30-250
TGS2.0×5.0	2,000	5,000	11.5	2-2.5	22	30-300
TGS2.2×6.0	2,200	6,000	10.5	2-2.5	30	30-300
TGS2.4×8.0	2,400	8,000	9	2-2.5	37	30-300

Technical Note: The largest model does not automatically provide the highest effective output. Final selection must consider screening area, feed behaviour, aperture size, bed depth and required product quality.

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3. Working Principle and Machine Structure

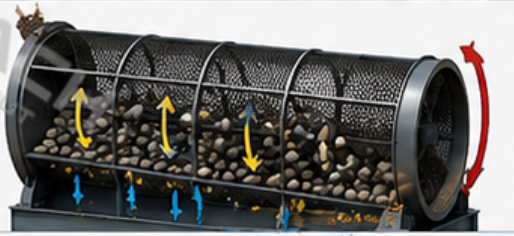
WORKING PRINCIPLE

1 Material Feeding

Raw material enters the drum from the feed inlet.

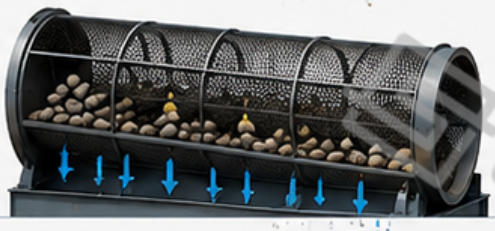
2 Lifting and Tumbling

Internal lifting bars lift the material and tumble it as the drum rotates.



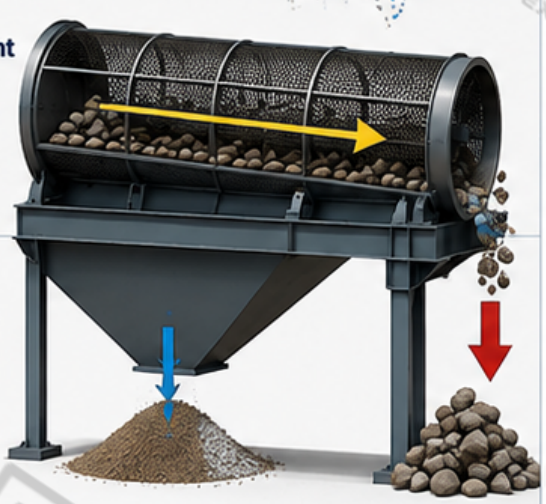
3 Particle-Size Separation

Smaller particles pass through the screen apertures, larger particles remain inside.



4 Axial Material Movement

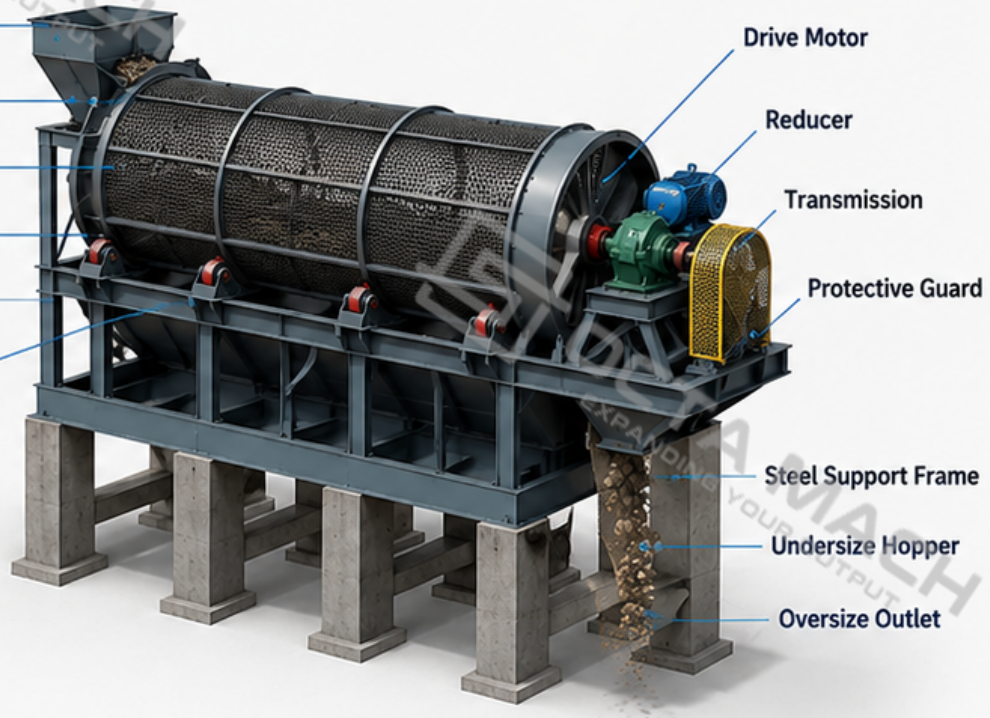
Material moves axially toward the discharge end due to the drum inclination.



5 Separate Discharge

Undersize material is discharged below the drum; oversize material is discharged at the end.

MACHINE STRUCTURE



OPERATING VARIABLES

Drum Speed	Feed Rate	Drum Diameter	Drum Length	Gradient	Aperture Size	Moisture and Clay Content
9–17 r/min	Variable (t/h)	1,200–2,400 mm	3,500–8,000 mm	2–2.5 degrees	Customized (mm)	Affects capacity and screening efficiency

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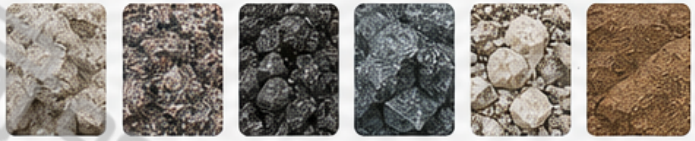
4. Applications and Model Selection Inputs

1. MINING AND MINERAL PROCESSING

Gold-bearing ore, iron ore, copper ore, manganese ore and coal

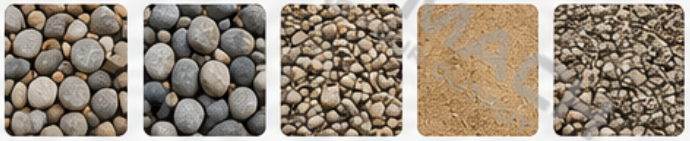
2. QUARRY AND CRUSHED ROCK

Limestone, granite, basalt, diabase, quartz stone and sandstone



3. SAND AND GRAVEL PROCESSING

River pebble, river stone, gravel, sand and crushed aggregate



Model Selection Inputs

A. FEED DATA	B. SEPARATION DUTY	C. OPERATING CONDITIONS	D. SITE CONDITIONS
Material type	Required cut size	Required capacity	Voltage and frequency
Maximum feed size	Number of product fractions	Moisture and clay content	Foundation space
Feed-size distribution	Required screening accuracy	Dry or wet screening	Upstream feeder
Bulk density (t/m³)		Operating hours	Downstream conveyors

Final Selection = **Feed Conditions** + **Required Product Sizes** + **Capacity** + **Site Interfaces**

Note: Final suitability must be confirmed from representative feed data. Material name alone is not sufficient for model selection.

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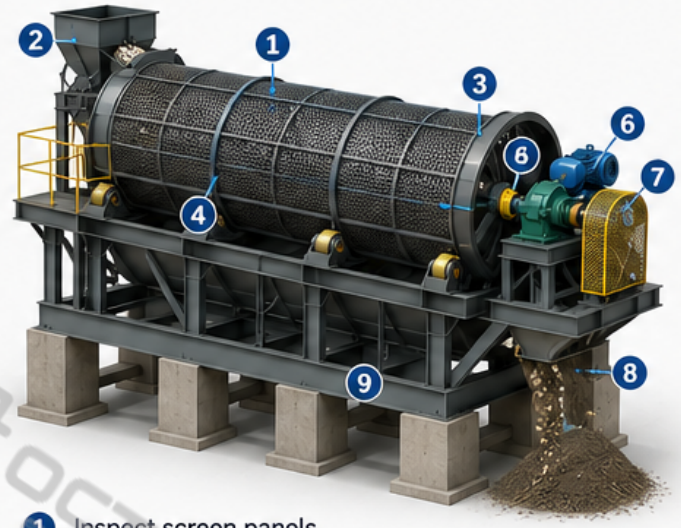
5. Equipment Comparison, Maintenance and Inquiry Checklist

1. TROMMEL SCREEN vs VIBRATING SCREEN

Item	Trommel Screen	Vibrating Screen
Screening Motion	Rotating and tumbling	Vibrating or elliptical
Screen Shape	Cylindrical drum	Flat or inclined deck
Material Travel	Rotation, gravity and drum gradient	Vibration and deck inclination
Typical Strength	Mixed or irregular granular feeds	High-capacity dry aggregate sizing
Installation	Long cyilndrical layout	Wider multi-deck layout

2. ROUTINE MAINTENANCE



1. Inspect screen panels
2. Remove wedged material
3. Check drum runout
4. Inspect support rollers
5. Check bearings and lubrication
6. Check reducer oil and temperature
7. Inspect coupling and guards
8. Clear hoppers and chutes
9. Check frame and anchor bolts

3. INFORMATION REQUIRED FOR QUOTATION

- Material type
- Maximum feed size
- Feed-size distribution
- Required product sizes
- Required capacity
- Bulk density
- Moisture and clay content
- Dry or wet screening
- Operating hours
- Voltage and frequency
- Upstream and downstream equipment
- Installation space
- Delivery destination

Note: The quotation should clearly define the supply boundary for feeders, conveyors, dust covers, spray systems, platforms, foundation work and site cabling.