HPY Cone Crusher Model Selection Guide

This guide is prepared for preliminary selection of **HPY Multi-cylinder Hydraulic Cone Crusher** models in aggregate, manufactured sand and mining crushing lines. It focuses on the factors that usually decide real output: feed size, CSS, chamber type, screening circuit, material hardness and spare parts planning.

1. Required Input Before Model Selection

Input item	What the buyer should provide
Feed size after primary crushing	Maximum feed size and feed grading after jaw crusher, gyratory crusher or upstream screen. Oversized feed should be avoided.
Material condition	Rock type, hardness, abrasiveness, moisture, clay content and whether the feed contains many fines.
Final product size	Required aggregate sizes such as 10-20 mm, 20-30 mm, or ore size before screening / grinding.
Capacity target	Required t/h by product size, not only total feed capacity. Include working hours per day if continuous operation is planned.
Circuit type	Open circuit or closed circuit, screen opening, return conveyor capacity and expected return load.
Site limits	Installation space, feeding height, power supply, dust condition and maintenance access.

A crusher model should be confirmed after these inputs are reviewed. Selecting only by rated motor power or theoretical maximum capacity often leads to unstable production, excessive return load or short liner life.

2. CSS, Chamber Type and Output Control

The **CSS** (closed side setting / tight-side discharge opening) is the smallest discharge gap between the mantle and concave. It strongly affects capacity, product size, liner wear and closed-circuit return load.

Selection point	Practical selection logic
Coarse chamber	Used when the cone crusher receives larger feed from the primary crusher and works as secondary crushing. It helps keep capacity stable with larger feed openings.
Medium chamber	Used for balanced capacity and product size control in common aggregate lines. Often selected when the plant needs both throughput and moderate shaping.
Fine / extra-fine chamber	Used for smaller aggregate size, manufactured sand preparation or ore size reduction before screening / grinding. Liner wear and return load should be watched.
Smaller CSS	Produces finer output but may reduce throughput, increase liner wear and raise circulation load in closed-circuit plants.
Larger CSS	Improves throughput but may not meet final product size, especially where screen control is strict.

3. Quick Application Selection Matrix

Production condition	Recommended focus when selecting HPY model
Granite / basalt aggregate	Check maximum feed after jaw crusher, chamber type, CSS and liner wear. Stable chamber feeding is important for cubic particle shape.
River pebble manufactured sand line	Use cone crushing before VSI to reduce VSI wear and stabilize feed size. Watch abrasiveness and spare parts inventory.
Iron ore / metallic ore	Review ore hardness, closed-circuit screen size, liner material and return load. Do not select by capacity table alone.
Limestone / dolomite	Focus on product size control, dust generation and screen matching; avoid over-crushing if the target is road base or concrete aggregate.
Closed-circuit plant	Confirm screen opening, return conveyor capacity and circulation load. Excessive return load can reduce real plant capacity.

4. Reference Capacity Range by Model and CSS

The following table is a compact reference for model comparison. For detailed CSS columns, use the separate **HPY Cone Crusher Technical Parameters** sheet.

Model	Listed CSS range in table	Reference capacity range	Selection note
HPY-100	6-32 mm	20-130 t/h	Small to medium capacity fine / medium crushing; check feed size before selection.
HPY-200	6-38 mm	40-250 t/h	Common smaller aggregate line model; suitable when product size and return load are moderate.
HPY-300	8-45 mm	100-440 t/h	Medium plant range; chamber choice strongly affects actual output.
HPY-400	8-51 mm	115-630 t/h	Higher capacity aggregate / ore crushing; check screen match and liner plan.
HPY-500	8-51 mm	140-760 t/h	Large aggregate plant or mining circuit; stable feeding and return load control are critical.
HPY-800	10-51 mm	235-1150 t/h	High-capacity hard rock line; verify installation space, power and maintenance access.
HPY-1000	10-64 mm	440-2100 t/h	Very large plant selection; requires full circuit confirmation, not table selection only.
HPY-1250	10-64 mm	630-3000 t/h	Large mining / aggregate systems; confirm feed, screening, conveyors and service plan.

Reference values come from the supplied HPY technical capacity table. Actual output may change with material density, feed grading, moisture, crushing chamber, CSS, liner condition and circuit type.

5. Purchase and Operation Checklist

Checklist item	Why it matters
Confirm first-year wear parts	Mantle, concave, bowl liner, seals, lubrication filters and hydraulic parts should be prepared before continuous production starts.
Review screen and return load	A cone crusher in closed circuit must be matched with the screen and return conveyor; otherwise real output drops.
Check feeding stability	Surge bin, feeder control or level monitoring helps avoid empty chamber operation and uneven liner wear.
Plan lubrication maintenance	Oil temperature, pressure, flow and cleanliness affect bushings, gears, bearings and long-term crusher reliability.
Confirm installation conditions	Foundation, feeding height, discharge conveyor, power supply, dust control and service access should be checked before shipment.

Recommendation: for quotation, provide feed size, feed grading, material type, capacity target, final product size, circuit diagram and working hours. This allows the model, chamber, CSS and spare parts list to be reviewed together.

Data basis: user-provided HPY capacity table, cross-checked with public HPY cone crusher product information on fixed-shaft structure, laminated crushing, multi-chamber selection, hydraulic protection, automation and lubrication control.