Jaw Crusher Plate Selection & Replacement Guide

Technical reference for fixed and swing jaw plates, material grades, tooth profiles and replacement checks.



FIXED JAW PLATE



SWING JAW PLATE

Purpose
A practical reference for identifying, specifying and replacing jaw crusher wear plates.

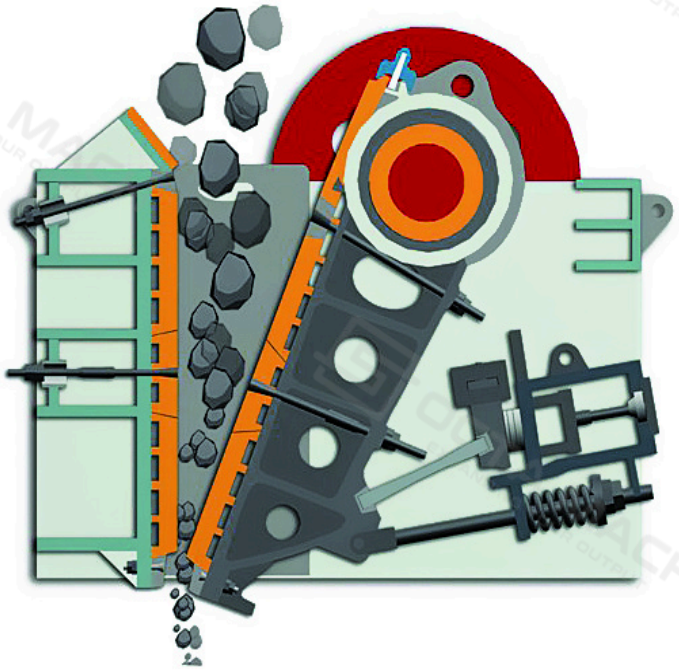
Scope
Product reference data, crusher interfaces, material selection, tooth profiles, feed conditions and wear checks.

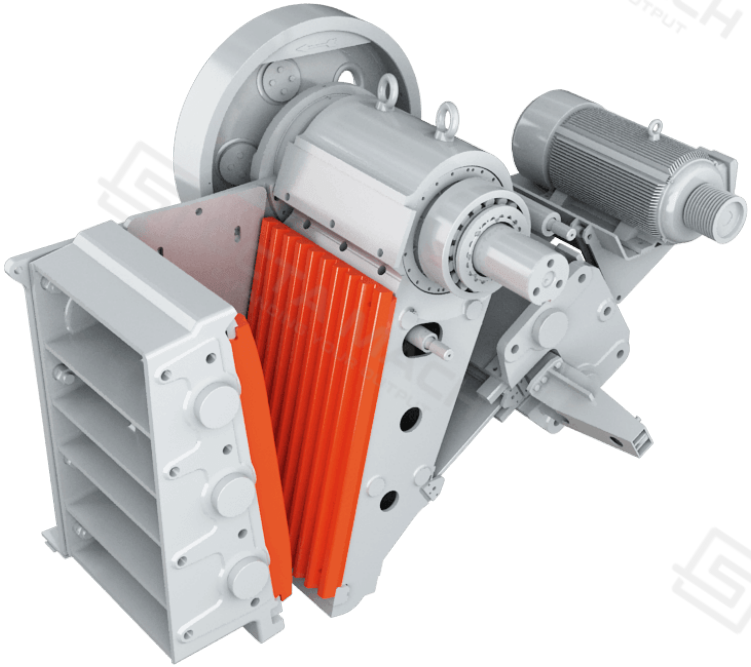
Use with
The crusher OEM manual, approved component drawing and the agreed purchase specification.

This guide contains reference information, not a substitute for crusher-specific drawings or operating instructions. Confirm all dimensions, material requirements and acceptance criteria for the actual machine before ordering.

01 / Jaw Plate Structure and Identification

A jaw crusher uses a fixed jaw plate and a swing jaw plate as the two primary crushing surfaces. The fixed plate is secured to the stationary frame. The swing plate is mounted to the moving jaw assembly and travels toward and away from the fixed plate during each crushing cycle.





Conceptual side section. Frame, eccentric drive and toggle arrangement vary by crusher model; use the equipment drawing for exact component positions.

COMPONENT	POSITION / FUNCTION	REPLACEMENT CHECK
Fixed jaw plate	Mounted against the stationary frame; forms one side of the crushing chamber.	Check dimensions, seating face, thickness, tooth profile and retention.
Swing jaw plate	Mounted on the moving jaw assembly (pitman); crushes feed during the stroke.	Check plate position, profile, mounting interface and adjacent-part clearance.
Cheek plates	Separate liners protecting the inner sidewalls of the crushing chamber.	Identify separately; not interchangeable with fixed or swing jaw plates.
Toggle plate	Part of the toggle linkage; supports the moving jaw assembly and transmits load.	Inspect for wear or damage according to the OEM procedure.
Jaw plate retaining components	Wedges, clamps or other model-specific parts secure the jaw plate.	Check engagement, deformation, wear and retention condition.

Identification rule: "Fixed" and "swing" describe installation position, not a universal plate shape. Jaw plates with the same name can differ in tooth geometry, back-face pockets, mounting slots and overall dimensions between crusher models.

02 / Product Specifications and Model Compatibility

The following values are the current reference product data used for this guide. They describe listed configurations and must not be treated as universal dimensions for every PE jaw crusher.

SPECIFICATION	FIXED JAW PLATE	SWING JAW PLATE
Material grades	Mn13, Mn18, Mn22, Mn18Cr2	Mn13, Mn18, Mn22
Material type	High manganese steel	High manganese steel
Overall dimensions (L × W × T)	1,680 × 1,040 × 145 mm	1,890 × 1,040 × 145 mm
Reference weight	1,250 kg	1,420 kg
Tooth count	8	7
Tooth profile	Corrugated / coarse corrugated	Corrugated / coarse corrugated
Tooth pitch	According to approved profile drawing	According to approved profile drawing
Construction	One-piece / segmented	One-piece / segmented
Mounting	Wedge / model-specific retention	Model-specific seating and retention

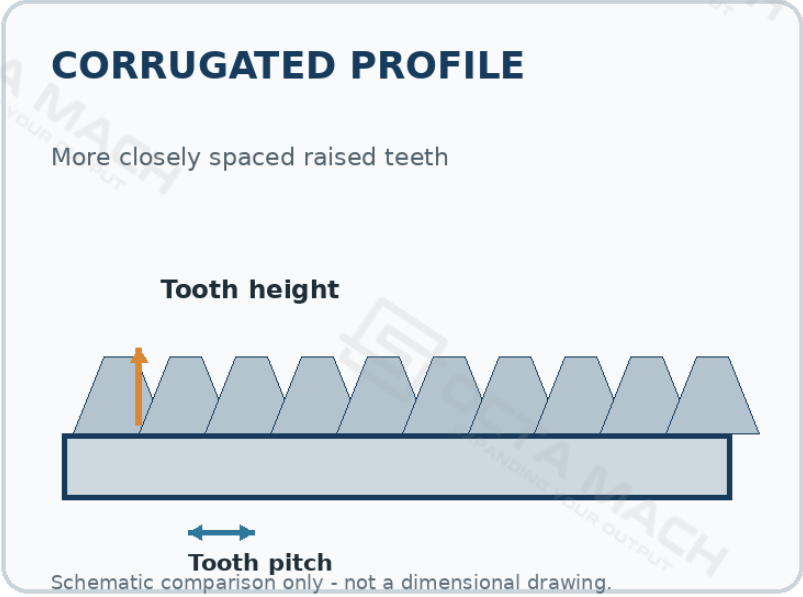
Reference PE jaw crusher models listed:

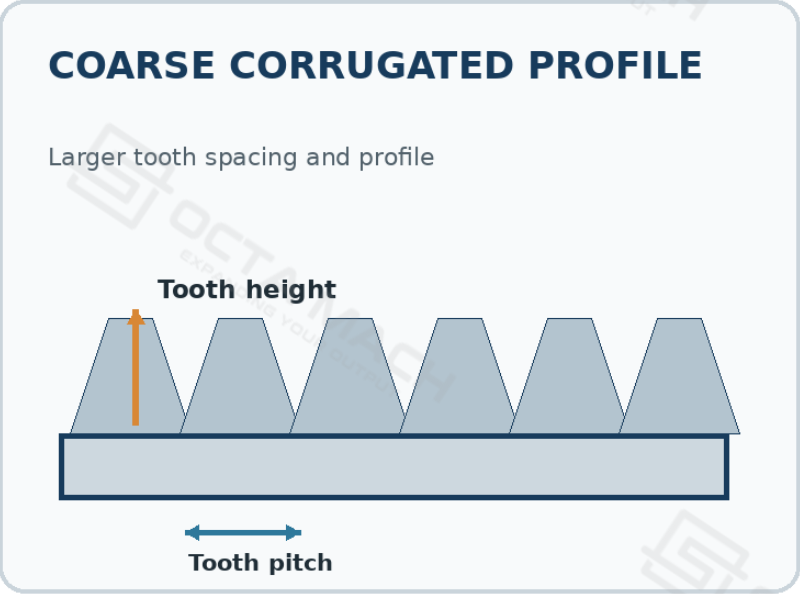
CRUSHER SERIES	MODEL DESIGNATION
PE Jaw Crusher	PE-400 × 600
PE Jaw Crusher	PE-500 × 750
PE Jaw Crusher	PE-600 × 900
PE Jaw Crusher	PE-750 × 1,060
PE Jaw Crusher	PE-900 × 1,200

Compatibility notice: The model list is a reference range only; the available data do not map the two dimensional sets to individual PE models. Confirm the crusher make, exact model, serial number, original part number, approved drawing and mounting arrangement. Clarify whether listed weights refer to individual plates or a matched set.

03 / Jaw Plate Tooth Profiles and Design

The tooth profile is the working geometry that grips the feed and transfers crushing force. Octa Mach lists corrugated and coarse corrugated configurations. The correct profile depends on the crusher's designed feed opening, feed gradation, required product size and the matching plate on the opposite jaw.





Schematic profile comparison only. Tooth height, pitch, crest shape and root radius must be taken from the approved component drawing.

DESIGN FACTOR	WHY IT MATTERS	WHAT TO CONFIRM
Tooth height	Affects the working grip and the amount of profile available before the teeth become flattened.	Original profile drawing and remaining wear allowance specified for the crusher.
Tooth pitch	Sets the spacing between adjacent teeth and changes the contact pattern with the feed.	Pitch and tooth count; do not infer from a product photograph.
Tooth shape	Influences how rock engages with the jaw and moves through the chamber.	Corrugated or coarse corrugated profile, including crest and root geometry.
Pair matching	Fixed and swing plates work as a pair; mismatched profiles can change the intended chamber geometry.	Both plate drawings, installation orientation and crusher-specific profile combination.

Do not select by appearance alone. A coarse-looking tooth pattern is not proof of compatibility. Confirm tooth pitch, height, plate orientation and mounting geometry against the original part drawing.

04 / Manganese Steel Grades and Material Selection

Austenitic high manganese steel is used for jaw crusher wear plates because it combines impact toughness with the ability to work-harden under suitable loading. Repeated impact and surface deformation can raise the hardness of the working layer while the underlying material retains toughness. If the crusher duty produces little impact, the expected work-hardening response may not develop.

GRADE	INDICATIVE Mn CONTENT	REFERENCE DESCRIPTION	SELECTION NOTE
Mn13	11–14%	Conventional high-manganese option.	Assess against impact level, feed characteristics and wear pattern.
Mn18	17–19%	Higher manganese content.	May be considered for combined impact and abrasive loading; verify heat treatment and service results.
Mn22	20–23%	Higher-manganese alloy option.	Select against actual crushing duty; sufficient impact is needed for work hardening.
Mn18Cr2	17–19% Mn; approx. 2% Cr	Chromium-modified manganese steel designation.	Confirm the complete chemistry and heat-treatment requirements in the agreed specification.

What determines performance?

Impact energy
Feed size, drop height and crusher loading affect whether the working surface receives enough impact to work-harden.

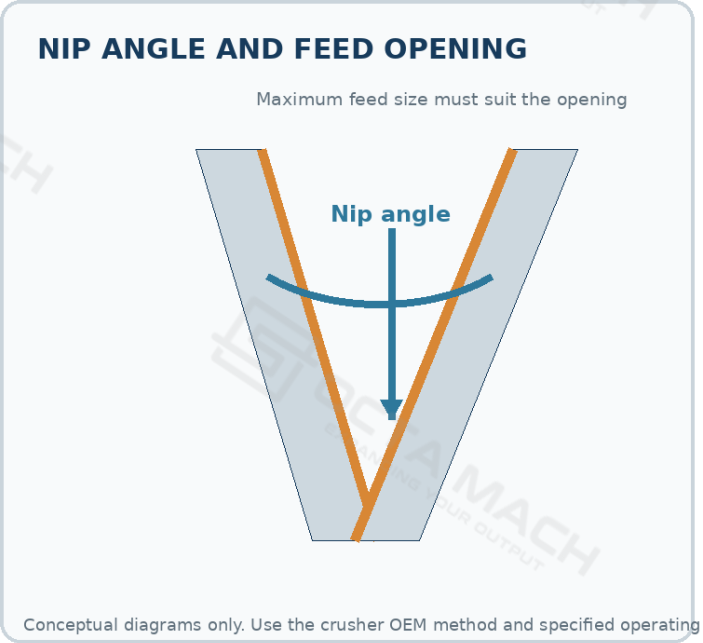
Feed abrasiveness
Hard minerals and abrasive particles influence material removal; high manganese content alone does not predict service life.

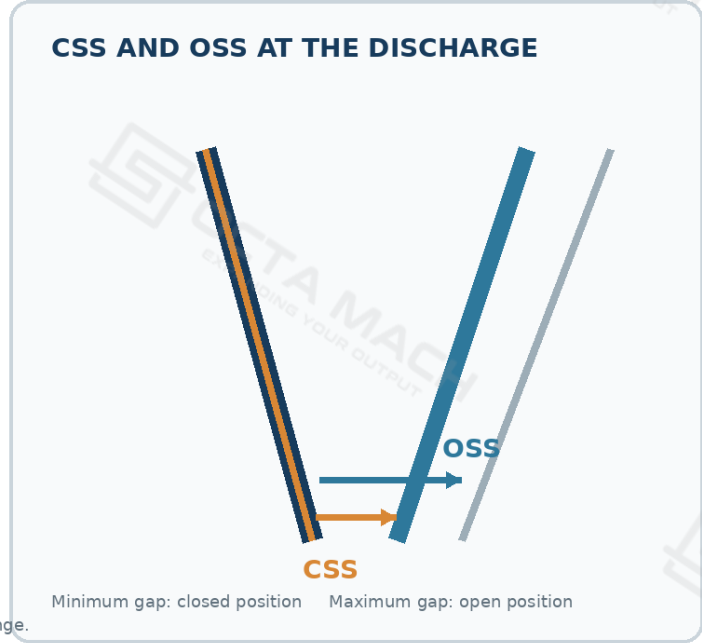
Heat treatment and casting
Final chemistry, solution treatment, quenching and casting soundness all affect the finished component.

Material grade clarification: Mn13, Mn18, Mn22 and Mn18Cr2 are commercial designations used in this product reference; they are not direct equivalents to ASTM A128/A128M grades. ASTM A128/A128M-19(2025) covers Hadfield austenitic manganese steel castings and alloy modifications, including chemical-composition and heat-treatment requirements. Where specified, agree the applicable ASTM grade and verify compliance against the heat analysis and heat-treatment records. The standard does not define crusher-specific plate dimensions, tooth geometry or mounting interfaces.

05 / Feed Size, Nip Angle and CSS Matching

A jaw plate can match the drawing and still produce poor results if the crusher is fed outside its design conditions. Maximum feed size, particle shape, fines content and the discharge setting all affect how material is gripped and crushed through the chamber.





Conceptual illustration. CSS and OSS measurement locations and procedures must follow the specific crusher manufacturer's instructions.

FACTOR	OPERATING EFFECT	CHECK BEFORE CHANGING PLATES OR SETTINGS
Maximum feed size	Oversized pieces may bridge or create localized loading near the feed opening.	Keep the maximum feed within the crusher manufacturer's stated limit for the selected chamber.
Feed gradation	Excessive fines or a narrow size distribution can change chamber filling and contact patterns.	Review the actual size distribution, fines fraction, moisture and clay content.
Nip angle	The included angle between the fixed and moving jaw faces affects the ability to grip and draw material downward.	Use the crusher's designed chamber geometry; do not assume a plate profile can correct an unsuitable angle.
CSS / OSS	OSS is the maximum jaw-die gap at rest; CSS is the minimum discharge-end gap. Use the OEM method to determine CSS from OSS and jaw stroke.	Confirm the OEM measurement method, permitted range and the profile-specific setting reference.

Practical check: Before reducing CSS to obtain a finer product, confirm that the feed size, chamber capacity and power demand remain within the crusher's operating limits. A smaller setting does not automatically improve throughput or product shape.

06 / Jaw Plate Wear and Replacement

Wear is usually progressive, but it rarely develops at the same rate across the full plate. Feed distribution, rock properties, chamber profile and operating settings influence where the working surface loses material first.



Abrasive wear and crest rounding
Polished or lowered ridges should be compared with the original profile.



Cracks or fractures require OEM assessment before reuse.

Illustrative wear images for visual reference only. They are not inspection records or acceptance standards.

CONDITION	WHAT TO LOOK FOR	WHY IT MATTERS
Flattened teeth	Reduced crest height and a smoother working face.	Material may become harder to grip, especially when feed particles are rounded or large.
Uneven wear	One side or one chamber zone wears faster than the rest.	Check feed distribution, fines and alignment before attributing the pattern only to material grade.
Localized damage	Deep grooves, chipped sections, cracks or damage near mounting areas.	Assess cracks against OEM rejection criteria; inspect seating and retention parts before reuse.
Performance change	Throughput falls, product gradation shifts or power demand rises under similar conditions.	Compare operating records and measured plate profile with the crusher's wear limits.

Replacement decision: Follow the crusher manufacturer's wear limits and actual measurements. There is no single operating-hour limit or remaining-thickness percentage that applies to every jaw crusher. When fitting new plates, inspect the support faces, wedges, clamps and retaining parts; confirm that the fixed and swing profiles remain a compatible pair.

07 / Replacement and Enquiry Checklist

A complete enquiry helps identify the correct plate before manufacture. If the machine is an older installation or has been modified, photographs and the original component drawing are particularly useful.

INFORMATION TO PROVIDE	DETAILS TO RECORD
Crusher identification	Manufacturer, crusher series, exact model, serial number and year or revision if known.
Part identification	Fixed or swing jaw plate, original part number, quantity and installation position.
Geometry	Approved drawing, overall dimensions, thickness, tooth count, pitch, profile and orientation.
Mounting interface	Seating surfaces, holes, slots, wedges, clamping and retention arrangement.
Operating conditions	Rock type, maximum feed size, feed gradation, moisture/clay condition, target product size and current CSS.
Material requirement	Agreed grade and material specification; identify any required supplementary chemistry or testing.

Documents and inspection scope to agree

DOCUMENT / RECORD	PURPOSE	ORDER NOTE
Chemical analysis / material test certificate	Confirms the heat chemistry against the specified grade.	Agree the required elements, reporting format and heat/lot traceability.
Heat-treatment record	Records the agreed solution treatment and quenching cycle.	Treatment parameters and acceptance requirements must be specified by the material specification or purchase order.
Dimensional inspection report	Checks overall dimensions, thickness, tooth profile and mounting interfaces.	Use the approved crusher-specific drawing and agreed tolerances.
Hardness test result	Provides hardness data at the agreed test locations and material condition.	Specify method, location, condition and acceptance range if required; do not assume a universal value.

ENQUIRY RECORD		
	PROJECT / CUSTOMER: _____	**DATE:** _____
	CRUSHER MODEL / SERIAL: _____	**QUANTITY:** _____
	PART TYPE: Fixed / Swing **PART NO.:** _____	**REQUIRED DATE:** _____

Octa Mach jaw plate range: Fixed jaw plates and swing jaw plates for PE series jaw crushers, with listed high-manganese steel options including Mn13, Mn18 and Mn22; Mn18Cr2 is listed for selected fixed-plate configurations. Reference profiles and dimensions are subject to confirmation against the approved drawing.

OCTA MACH
Website: www.octamach.com

Reference basis: product information supplied for this guide; ASTM A128/A128M-19(2025) where specified for austenitic manganese steel castings; and the crusher manufacturer's current manual, approved drawings and wear limits. Supplementary visual-inspection or casting-repair records should be defined in the ITP where applicable. Confirm applicable editions and contractual requirements for each order.