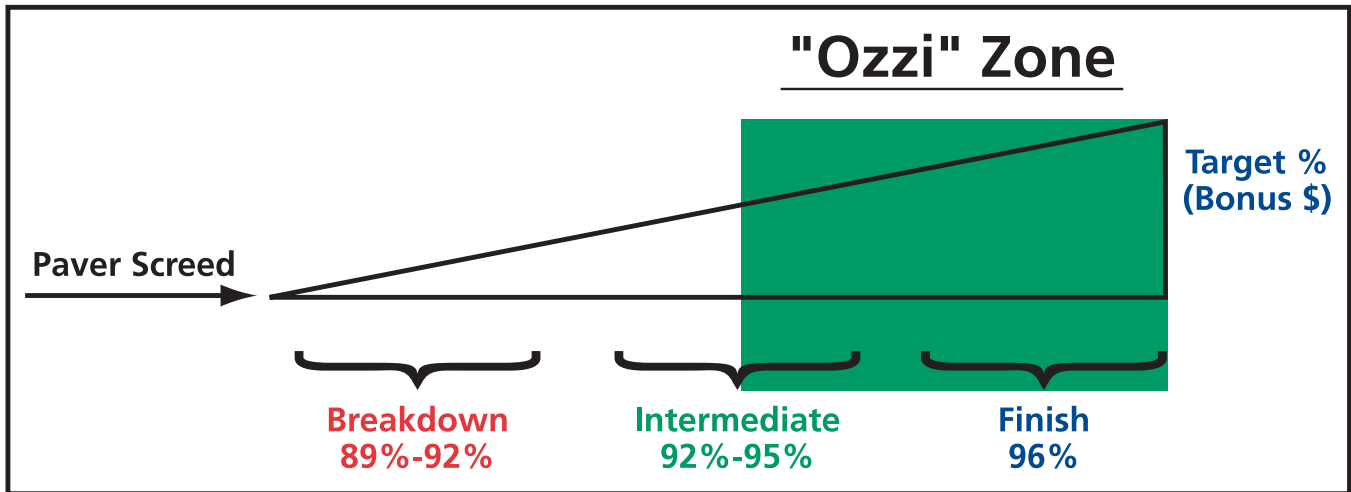




THE OSCILLATORY SYSTEM



After Breakdown Density is Achieved Total Control to Achieve the Target Density is Critical



The Oscillation System from Hamm

No over compaction

The oscillatory system does not "break over" like a conventional vibratory system.

No damage to cold bottom layers or cold precompacted lanes

The oscillatory system uses horizontal shear forces instead of vertical impact forces.
Optimum compaction on transverse and longitudinal joints.

Ultimate smoothness

The oscillatory system drum never leaves the surface of the mat.
No bouncing - No ridges

Achieve compaction in a wider temperature range

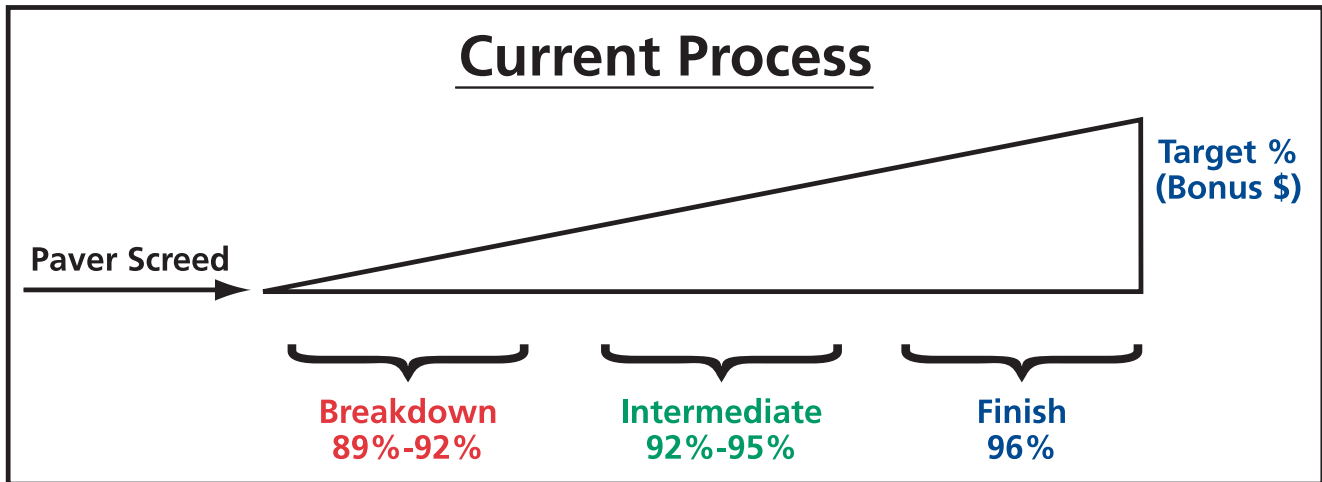
The oscillatory system will continue to increase compaction density
at lower temperatures without breaking over.

Versatility

The Hamm oscillatory rollers offer both a conventional vibratory drum on the front
and the patented oscillatory system drum on the rear.

OPEN UP TO SEE HOW IT WORKS

Current Process of Asphalt Compaction - "Train of Compactors"



Primary or Breakdown

1 or 2 large tandem vibratory rollers
 High centrifugal forces
 High asphalt temperatures
 Initial compaction densities of 89% - 92%

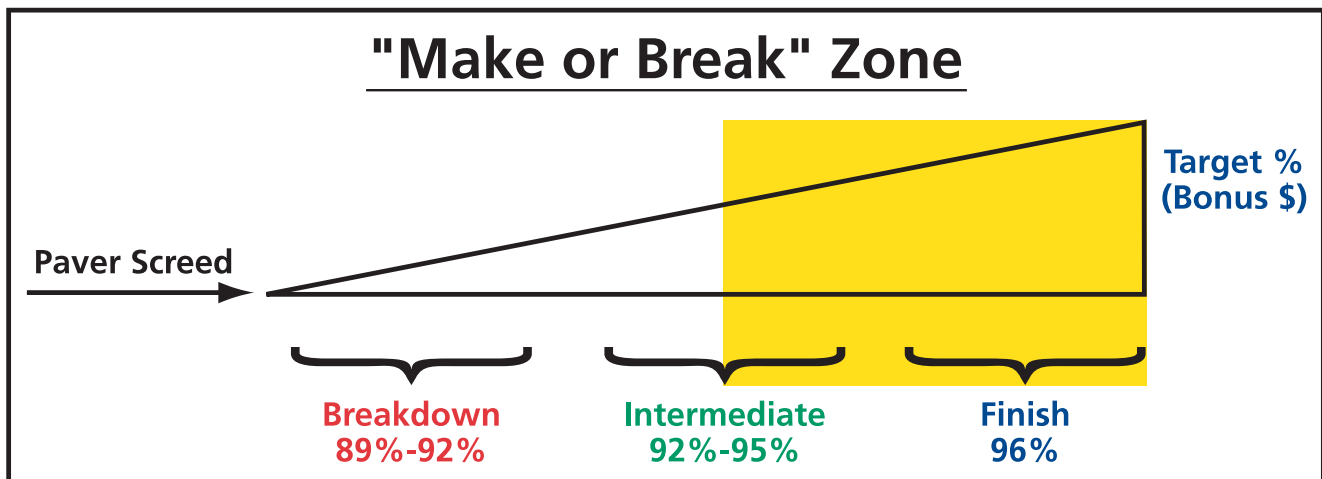
Intermediate

1 or 2 large tandem vibratory rollers,
 sometimes large to medium pneumatic
 rubber tired rollers
 High to medium centrifugal forces
 Asphalt temperature is cooling rapidly
 Additional 1% to 3% compaction densities

Finish

Tandem static or vibratory roller
 Mostly operated as non-vibratory
 Primary function - smooth surface
 May achieve additional 1% to 2%
 compaction density

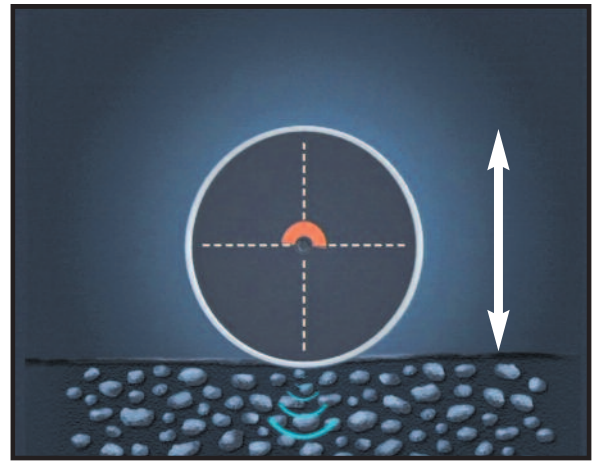
Achieving Optimal Density Levels - The "Make or Break" Zone



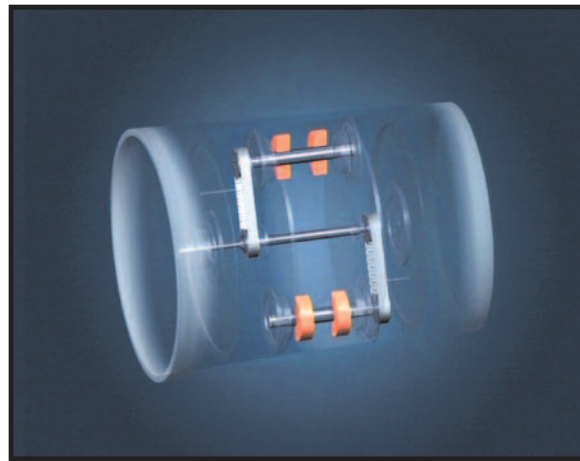
Achieving the optimal designed density level in hot mix asphalt (HMA) requires control in the target density range (example 94% to 96%). On many occasions conventional eccentric/vibratory rollers will "break-over" or "over compact" in this critical target density range. Control in this high-risk target density range is difficult with the use of conventional vibrating rollers in the intermediate and finish positions.

Vibration = Vertical Impact Forces

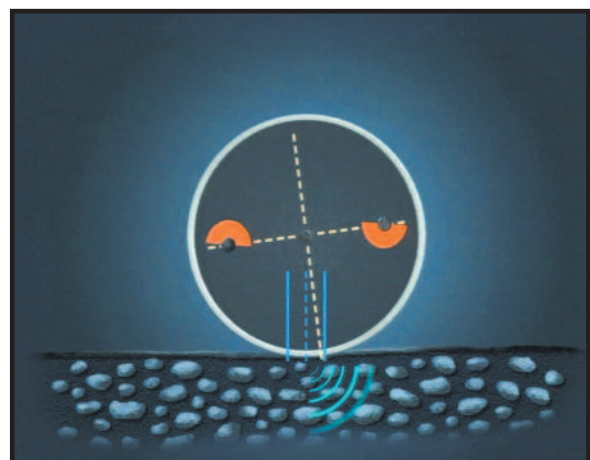
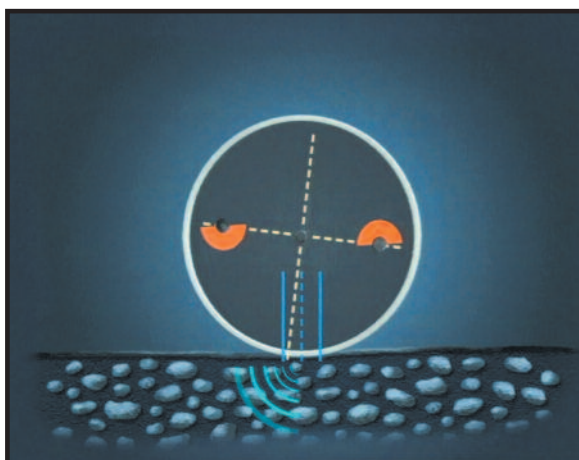
Traditional vibratory compactors utilize an eccentric weight within the drum. Rotated at high speed, this causes the drum to vibrate and vertically move or "jump", generating vertical impact forces from the drum into the asphalt.



Oscillation = Horizontal Shear Forces

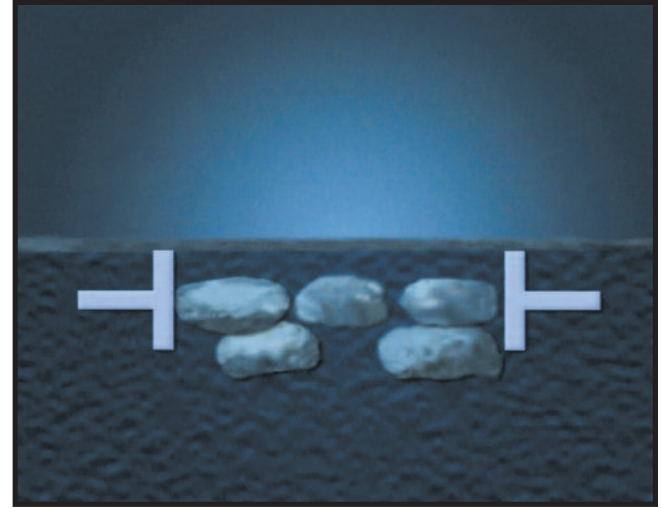
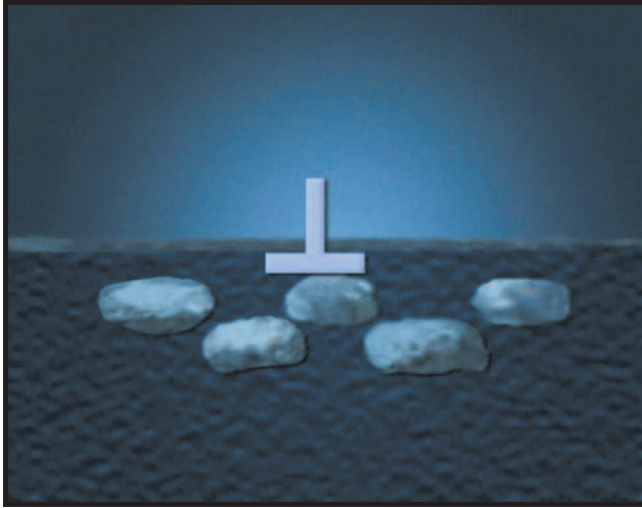


The oscillatory system uses dual, opposed, eccentric weights rotating in the same direction around the drum axis. The rotation of the oscillatory eccentrics cause the drum to move in a rocking motion instead of a vertical or jumping motion. This rocking motion creates horizontal and downward shear forces that achieve greater compaction, even in lower temperature ranges. And, because the drum does not "bounce" like a conventional vibratory drum, the surface of the mat is smooth and flat.



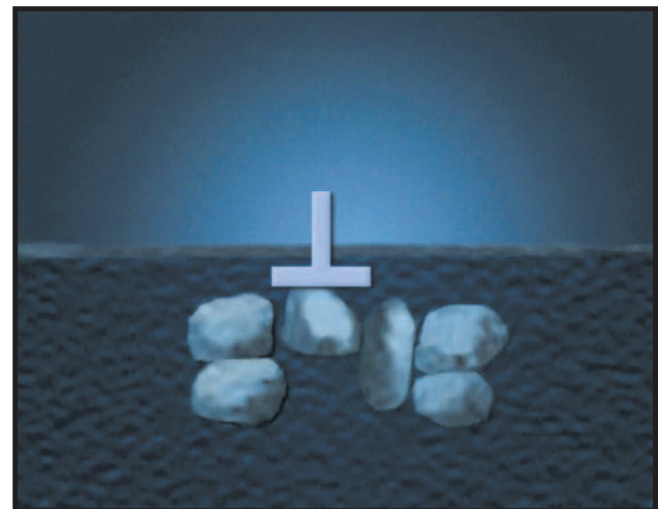
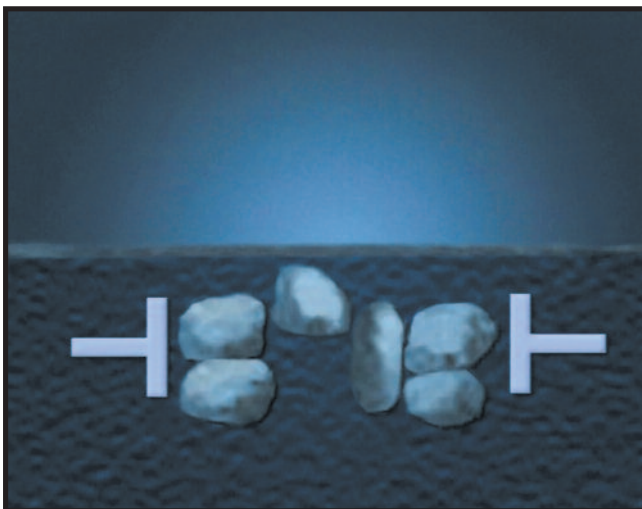
This means the oscillatory roller is the ultimate intermediate and finish compactor.

Non-Aggressive Compaction



The horizontal shear forces generated by the patented oscillation system will continue to move the aggregate in a horizontal direction even when vertical density has been achieved. Also, the horizontal shear forces along with the downward forces will continue to move the aggregate in a vertical direction in order to achieve the optimal target density.

The ability to generate compaction forces and not vertically vibrate or “bounce” the drum insures that the asphalt will be compacted with no damage to the aggregate, no damage to adjacent structures or cold bottom layers. Oscillatory compactors can be operated in lower temperature ranges and, because of the lack of vibration from the drum, have less wear and tear on the whole machine.



Above all, the **Oscillatory Compaction System** from Wirtgen America - Hamm Compaction Division provides the roller operator with **total control** over the type and degree of compaction in the critical and high risk intermediate and finish areas.



Tandem Drum Compactors

equipped with standard vibratory drum in front and optional oscillatory drum in rear.

MODEL	OPERATING WEIGHT	ENGINE	DRUM / ROLLING WIDTH	FREQUENCY LOW / HIGH	CENTRIFUGAL FORCE PER DRUM
HD O70V	16,402 lbs (7,440 kg)	84 HP (63 kW)	59" - 63" (150 - 160 cm)	Vibe - 2,520 / 3,000 vpm (42 / 50 Hz) Ozzi - 1,800 / 2,160 vpm (30 / 36 Hz)	Vibe - 14,175 / 13,950 lbs (63 / 62 kN) Ozzi - 16,200 / 23,175 lbs (72 / 103 kN)
HD+ 90 VO	20,237 lbs (9,220 kg)	134 HP (100 kW)	66" - 72.8" (168 - 185 cm)	Vibe - 2,400 / 3,000 vpm (40 / 50 Hz) Ozzi - 2,520 vpm (42 Hz)	Vibe - 15,300 / 13,500 lbs (68 / 60 kN) Ozzi - 37,575 lbs (167 kN)
HD+ 110 VO	22,388 lbs (10,155 kg)	134 HP (100 kW)	66" - 72.8" (168 - 185 cm)	Vibe - 2,400 / 3,000 vpm (40 / 50 Hz) Ozzi - 2,520 vpm (42 Hz)	Vibe - 24,525 / 22,275 lbs (109 / 99 kN) Ozzi - 37,575 lbs (167 kN)
HD+ 120 VO	28,164 lbs (12,775 kg)	134 HP (100 kW)	78" - 84.7" (198 - 215 cm)	Vibe - 2,400 / 3,000 vpm (40 / 50 Hz) Ozzi - 2,520 vpm (42 Hz)	Vibe - 38,925 / 33,075 lbs (173 / 147 kN) Ozzi - 62,775 lbs (279 kN)
HD+ 140 VO	29,310 lbs (13,295 kg)	134 HP (100 kW)	84" - 91" (214 - 231 cm)	Vibe - 2,400 / 3,000 vpm (40 / 50 Hz) Ozzi - 2,520 vpm (42 Hz)	Vibe - 40,500 / 33,750 lbs (180 / 150 kN) Ozzi - 62,775 lbs (279 kN)



Single, Smooth, Drum Compactors

equipped with optional "VIO", vibratory or oscillatory, drum.

MODEL	OPERATING WEIGHT	ENGINE	DRUM / ROLLING WIDTH	FREQUENCY LOW / HIGH	CENTRIFUGAL FORCE
3307 VIO	13,558 lbs (6,150 kg)	91 HP (68 kW)	66" (168 cm)	Vibe - 2,160 vpm (36 Hz) Ozzi - 2,160 vpm (36 Hz)	Vibe - 27,675 lbs (123 kN) Ozzi - 27,675 lbs (123 kN)
3412 VIO	25,794 lbs (11,700 kg)	134 HP (100 kW)	84" (214 cm)	Vibe - 1,980 vpm (33 Hz) Ozzi - 1,980 vpm (33 Hz)	Vibe - 62,775 lbs (279 kN) Ozzi - 62,775 lbs (279 kN)

