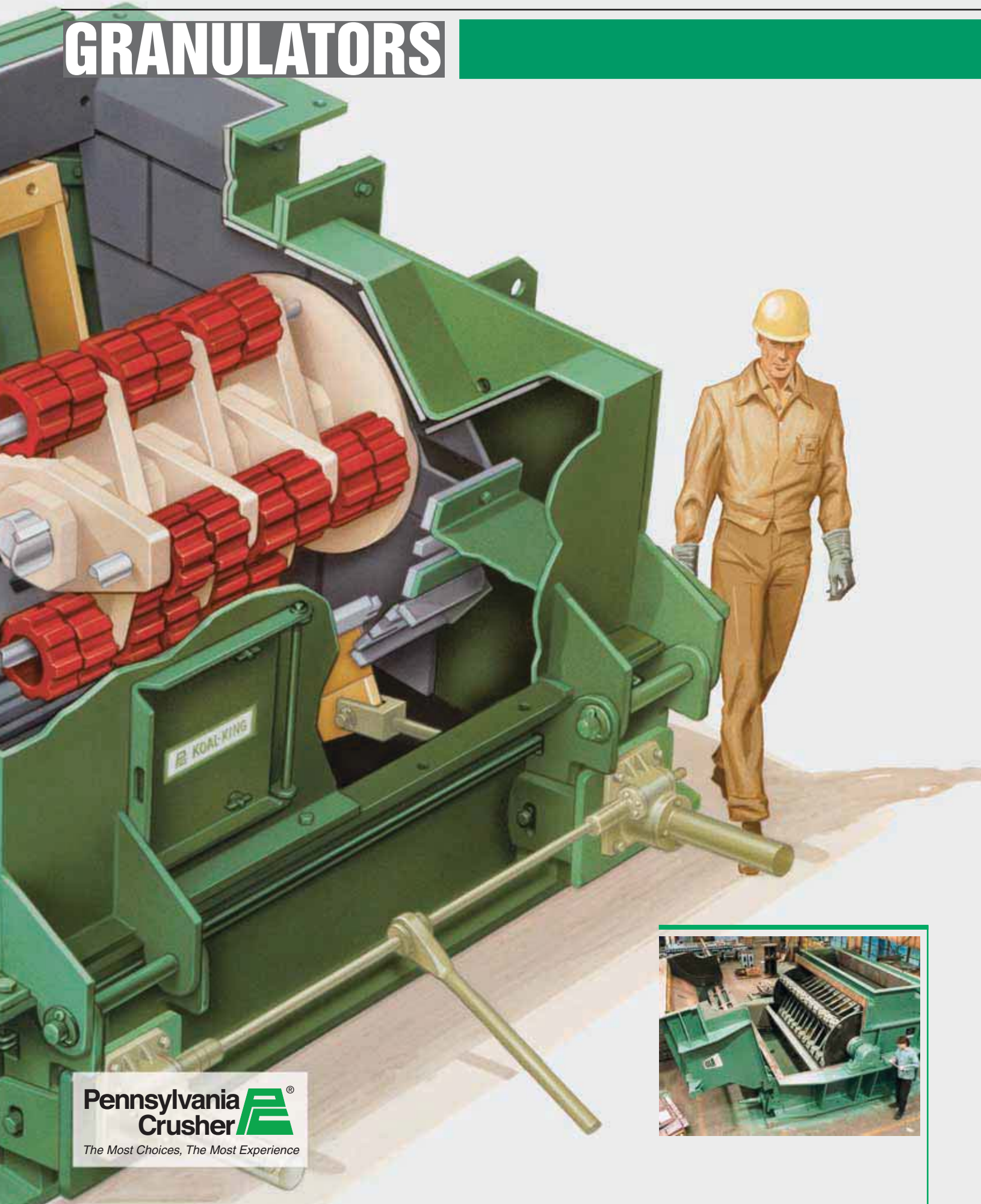


# GRANULATORS



**Pennsylvania**  
**Crusher** <sup>®</sup>  
*The Most Choices, The Most Experience*



**The Pennsylvania Granulator** is the most widely installed crusher of its type in the entire U.S. power generation industry, including both utility and independent producers. This crusher, together with the Pennsylvania Bradford Breaker and our other coal crushers, performs the sizing of an estimated three-fourths of all steam coal used in the U.S. In addition, some of our other models handle the sizing of a considerable percentage of all the limestone sorbent required for fluid bed boiler applications.

You can select from nearly thirty models and sizes of Pennsylvania Granulators alone, plus dozens of other crusher types, in hundreds of sizes - the widest selection available in the world. Because the scope of our product line is so complete, it imposes no limitations nor bias on any equipment we might recommend. We therefore maintain complete latitude to recommend whatever we objectively feel is best suited to your application.



## APPLICATIONS EXPERTISE

Determination of the correct model and size for your application entails meticulous analysis of all factors. Our application engineering staff has devoted a considerable portion of their professional careers to the subject of coal crushing for power generation. Therefore, our recommendations as to crusher type and size, and the correct motor, are based upon proven experience with thousands of installations throughout the world. At our disposal, we also have reference to 100+ years of test results of countless materials from every continent; often our data base even includes results from several locations within the same coal seam.

Additionally, you will find us well equipped to review your general arrangement of feed and discharge equipment, and to provide for drying and other systems.



## SUPPORT SERVICES

We can assist with installation and start up supervision of your crusher, train your staff, and advise you of other factors we regard as necessary for a good installation.

After start up, we can provide you with continuing support through our Parts and Service department. Here, complete records are maintained for the entire life of your crusher including details of modifications, life extension and other work performed after its initial start up.

## TEST CRUSHING

If, prior to purchase, you wish to obtain documented confirmation of the results you may reasonably expect from our equipment recommendations, we offer to perform tests of your material. Our test lab is equipped with full-size crushers along with the apparatus needed to determine capacities, gradation, moisture content, abrasiveness, height-of-drop and other variables.

All test crushing is performed by experienced technicians under the direction of our senior application professionals. For full details, contact your Pennsylvania Crusher representative or our main office as listed in this brochure.



*Throughout the world, the Pennsylvania Granulator has rendered millions of hours of reliable service. This model has been in service in China since 1982.*

# MODEL TKK KOAL-KING® GRANULATOR

Our most advanced model, the TKK is the most widely used granulator in the world. It's used to crush coal in power plants, mines, cement plants and other applications. As with all Pennsylvania Granulators, its reduction capability and performance are unmatched. It produces a granular product with a minimum of additional fines and it readily handles the wet, fine and dirty coals currently processed in many power stations. In cold weather, this crusher has no problem in reducing frozen lumps of coal.

Additionally, this crusher offers servicing and maintenance advantages that enable continuing cost savings throughout its long service life.

## SUPERIOR TECHNOLOGY

**UNIQUE ACCESS ARRANGEMENT.** The Model TKK requires an absolute minimum of downtime for all servicing by virtue of the exceptional access to all internal components. In most sizes, the entire rear quadrant of the crusher is hinged and swings completely open, exposing the entire rotor assembly and much of the crushing chamber. This produces full and unhindered access — for servicing — for complete removal of the rotor assembly — for hammer replacement — without disturbing other elements of the feed system. This hinged quadrant can be supplied with hydraulic openers in order to save even more time and effort.

**BEARING HOUSINGS.** Instead of the ordinary one-piece design, the rotor bearing housings are split. This allows the bearings to be flushed and lubricated easily without removing them from the shaft. Though grease lubrication is standard, a circulating oil system can be provided if desired.

**BYPASS CHUTE.** When sized coal must be fed through the coal handling system, the optional bypass chute directs its flow around the cage assembly to the bottom discharge opening without passing through the crushing chamber. This practice eliminates unnecessary wear on the crushing components.

**SCREEN CAGE.** The Granulator resists plugging because the special slots of its screen cage create a very high ratio of open area, enabling the crusher to handle even the most difficult, sticky feed with no problem.

**OUTPUT SIZE ADJUSTMENT.** To maintain correct output size, the screen cage can be adjusted to compensate for normal wear, a task easily performed by means of external screw mechanisms. To further simplify this task, a single-point gear jack adjustment can be specified on the larger models. The TKK 36 is provided with single-point cage adjustment as standard equipment.

**CAGE ADJUSTMENT.** All of our Granulator cages employ downward forced adjustment because experience shows that wet coal buildup often makes gravity-reliant systems inoperable.

**PATENTED, TOOTHED RING HAMMERS.** Unlike an ordinary hammer, ours has a special profile that crushes most efficiently and has extended service life. TKK models use Pennsylvania Forged Steel Hammers. These are arranged for full coverage of the cage, producing far more consistent crushing and more uniform wear of the screen cage.

**CRUSHER PROTECTION.** Uncrushable debris is directed into an integral tramp iron trap, reached through an access panel for routine cleanout.

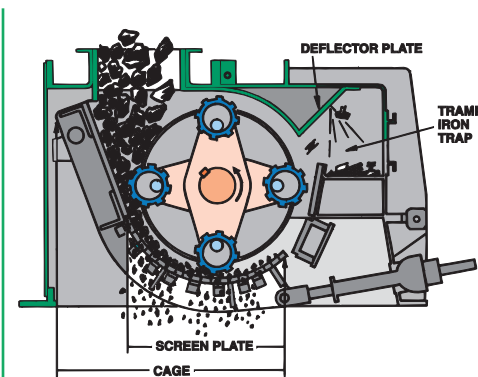
**NO FLYWHEEL.** Unlike other ring hammermills, our Granulators require no external flywheel. The weight of the rotor assembly alone creates sufficient inertia and this reduces the exposure of plant personnel to flywheel hazards.

**Model TKK 26** is offered in five sizes accepting an input size up to 10 inches.

**Models TKK 36** through **72** are offered in twenty-one sizes, which accept input sizes of 12 to 18 inches.



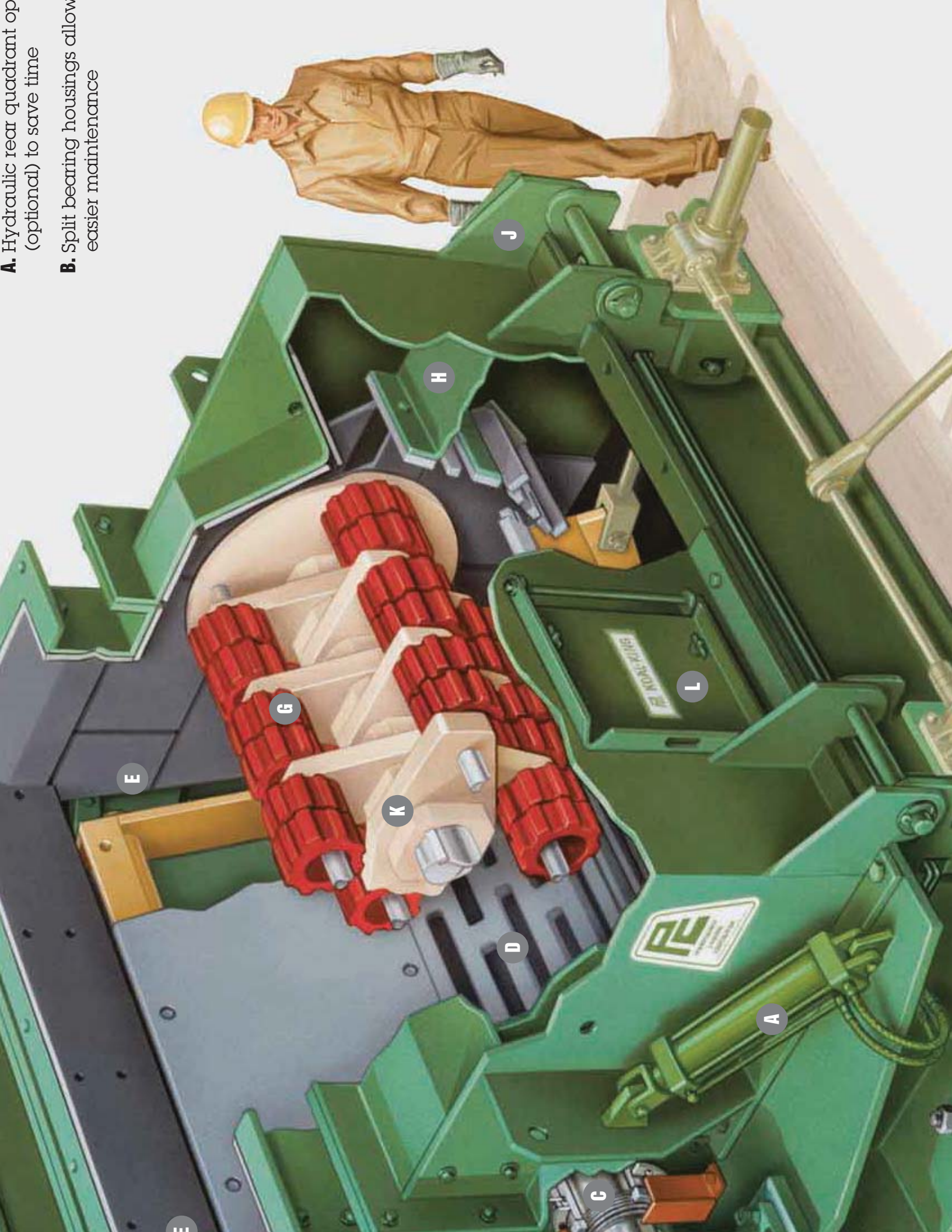
*Special design Forged Steel Pennsylvania Hammers provide longest service life.*



*Coal flows through the feed opening directly into the path of the ring hammers. These hammers break the coal through impact and drive it against the breaker plate where further reduction occurs. Final sizing occurs by the rolling compression of the ring hammers as the coal passes over the screen plate. **All reduction is performed in one pass.***

**A.** Hydraulic rear quadrant of (optional) to save time

**B.** Split bearing housings allow easier maintenance

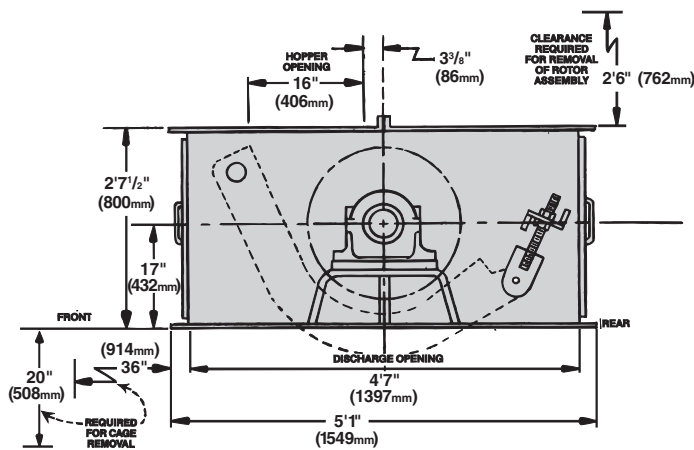




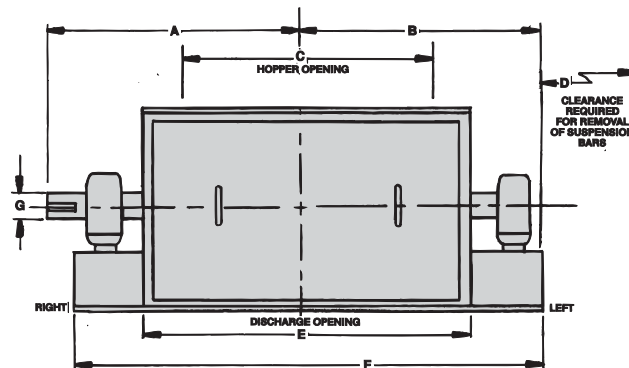
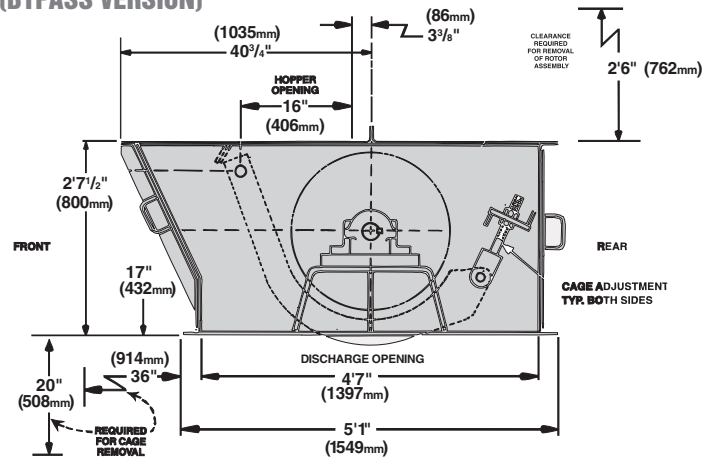
# MODEL TTK 26 KOAL-KING® GRANULATOR

Where quality crushing equipment is required for low capacities, the Model TTK 26 delivers exceptional value. It provides the same performance as our other TTK Granulators but, instead of using a hinged quadrant, full access to the interior is gained through a removable top cover. As with all TTK Granulators, however, its design allows performance of all maintenance – including rotor removal – without disturbing the feed or discharge systems. This model enables the user to employ a highly effective and dependable crusher with great economy.

## MODEL TTK



## MODEL TKKB (BYPASS VERSION)



### DIMENSIONS — TTK/TKKB 26 KOAL-KING GRANULATOR BRITISH IMPERIAL UNITS

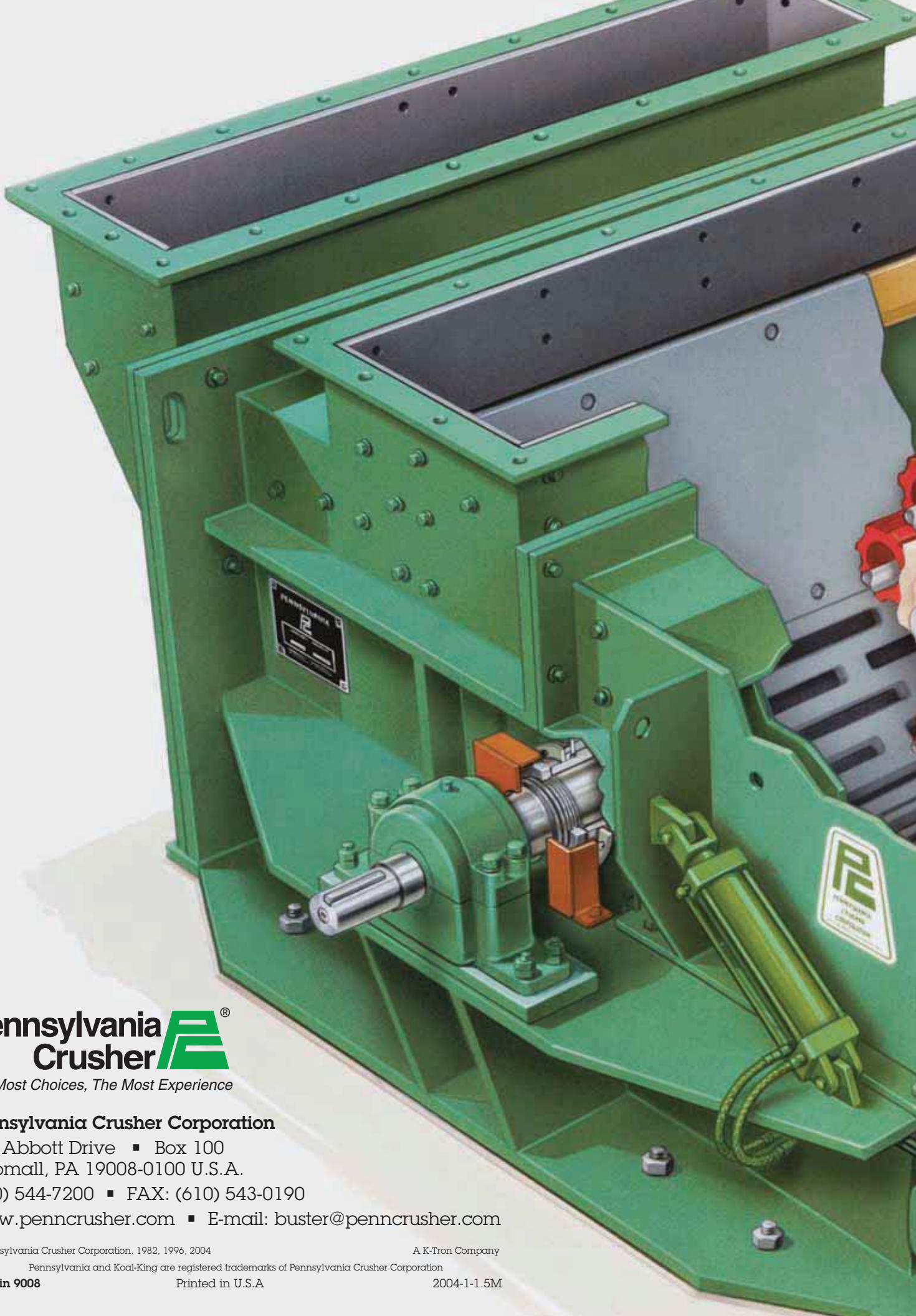
SIZE	A	B	C	D	E	F	G
26 X 20	2'-8 1/4"	1'-10 5/8"	1'-6 1/2"	1'-1"	1'-11 1/2"	4'-0 1/4"	2 1/4"
26 X 30	3'-1"	2'-3 1/2"	2'-4"	1'-11"	2'-9"	4'-9 3/4"	3"
26 X 40	3'-5 3/4"	2'-8 1/4"	3'-1 1/2"	2'-9"	3'-6 1/2"	5'-7 1/4"	3"
26 X 50	3'-10 1/2"	3'-1 1/2"	3'-11"	3'-8"	4'-4"	6'-4 3/4"	3 1/2"
26 X 60	4'-3 1/4"	3'-6 1/4"	4'-8 1/2"	4'-7"	5'-1 1/2"	7'-2 1/4"	3 1/2"

### DIMENSIONS — TTK/TKKB 26 KOAL-KING GRANULATOR INTERNATIONAL METRIC UNITS (MM)

SIZE	A	B	C	D	E	F	G
26 X 20	819	575	470	330	597	1226	57
26 X 30	940	699	711	584	838	1467	76
26 X 40	1060	819	953	838	1080	1708	76
26 X 50	1181	953	1194	1118	1321	1949	89
26 X 60	1302	1073	1435	1397	1562	2191	89

### GENERAL DATA

SIZE	26 X 20	26 X 30	26 X 40	26 X 50	26 X 60
APPROXIMATE HORSEPOWER (HP)	60	150	200	200	200
TYPICAL ROTOR SPEED (RPM)	720	720	720	720	720
APPROXIMATE SHIPPING WEIGHT (lbs.)					
a) TTK DESIGN	3,500	4,000	4,700	5,300	5,900
b) TKKB DESIGN	3,600	4,200	4,800	5,500	6,100



# Pennsylvania Crusher®

*The Most Choices, The Most Experience*

## **Pennsylvania Crusher Corporation**

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Broomall, PA 19008-0100 U.S.A.

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**Bulletin 9008**

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