

# POWERSCREEN® PREMIERTRAK 450

JAW CRUSHER



TECHNICAL SPECIFICATION - REV 3 06/12/2023





## PREMIERTRAK 450



# OVERVIEW

### SPECIFICATION

<b>Total Weight</b>	Tier 3: 49,125kg (108,302lbs) - VGF, HA chamber, standard hopper, bypass conveyor, single pole magnet
	Tier 4F: 50,325kg (110,948lbs) - Pre-screen, HA chamber, standard hopper, Extended bypass conveyor, single pole magnet
	Stage V: 49,780kg (108,390lbs) - Pre-screen, HR chamber, standard hopper, Extended bypass conveyor, single pole magnet
<b>Transport</b>	<b>Length</b> 16.1m (52' 10")
	<b>Height</b> 3.4m (11' 2") (VGF)
	<b>Width</b> 2.8m (9' 2")
<b>Working</b>	<b>Length</b> 15.5m (50'10")
	<b>Height</b> 4.4m(14'5") (VGF)
	<b>Width</b> 4.3m (14'1") with standard bypass conveyor
<b>Crusher Type:</b>	Single toggle jaw, feed opening 1100mm x 700mm (44"x 28")
<b>Power Unit</b>	Caterpillar C9.3 230kW (308hp), Scania DC9 202kW (275hp)
<b>Plant Colour</b>	RAL 5021, RAL 7024, RAL 9005

### FEATURES & BENEFITS

The Powerscreen® Premiertrak 450 high performance primary jaw crushing plant is designed for medium scale operators in quarrying, demolition, recycling and mining applications.

- Output potential of up to 450tph / 504 US tph - depending on material type and crusher settings
- Hydraulic folding feed hopper with hydraulic wedge fixing system
- Heavy duty wear resistant feed hopper
- Stepped self cleaning grizzly feeder with underscreen as standard
- Wide bypass chute to prevent material blockages
- Aggressive crushing action with high swing jaw encouraging material entry into crushing chamber
- Hydraulic crusher setting adjustment
- Crusher unblocking system (optional)
- Hydraulic raise / lower facility on the product conveyor to aid rebar clearance and maintenance
- Low fuel consumption due to highly efficient direct drive system
- Easy access to both sides of the powerunit via walkways
- PLC control system with auto start facility
- Remote control via umbilical or radio remote as standard
- Dust suppression system
- Single deck post screen offers added machine versatility for customer (optional)
- Powerscreen Pulse telemetry as standard
- Independent pre-screen option excels in applications with high fines contents by reducing wear rates, increasing throughputs and producing cleaner end products.

### APPLICATIONS



#### Aggregate

Sand & gravel  
Blasted rock  
River rock



#### Recycling

C&D waste  
Overburden  
Foundry waste



#### Mining

Processed ores  
Processed minerals



## PREMIERTRAK 450



# JAW CRUSHER

<b>Crusher type:</b>	Single toggle Jaw with hydraulic setting adjustment
<b>Feed opening:</b>	1100mm x 700mm (44" x 28")
<b>Bearings:</b>	Self aligning spherical rollers
<b>Lubrication:</b>	Grease
<b>Drive:</b>	V belts with screw adjust tensioner
<b>Crusher speed:</b>	235-280rpm
<b>Minimum setting:</b>	50mm (2") CSS recycling 75 mm (3") CSS quarry All setting measured from root to tip & subject to suitability of feed material. This plant has been designed for both quarry & recycling applications where appropriate. For maximum material strength of: 500kN 10% Fines, 300MPa compressive strength.
<b>Maximum setting:</b>	140mm (5.6") CSS standard jaws (HA) (with new liners) 150mm (6") CSS standard jaws (HR) (with new liners)
<b>Adjustment HA:</b>	Hydraulical wedge adjusted via panel
<b>Adjustment HR:</b>	Hydraulically adjusted css set by placing equal small shims into each side of the crusher

## CHAMBER FEATURES

- Quick and easy setting adjustment
- Drawback rod adjustments not required during setting changes
- Jawstock supported on both sides, even stress distribution
- Strong frame construction, no welding in critical areas
- Cylinders mounted in line with side plates
- Cartridge type bearings
- Overlap jaw protects tip of jawstock / pitman
- One piece fixed jaw support
- Proven manganese liner retention that allows for quick change/flip





## PREMIERTRAK 450



# HOPPER

- Hopper type:** Boltless hydraulic folding hopper with ground level set via hydraulic wedge lock fixing and hopper support braces
- Hopper length:** 4.75m (15' 7")
- Hopper width:** 2.5m (8' 2")
- Hopper capacity:** Standard 10m<sup>3</sup> (13 cu. yd.)
- Hopper body:** 15mm, 400 grade Brinell wear plate





## PREMIERTRAK 450



# VIBRATING GRIZZLY FEEDER

<b>Type:</b>	Spring mounted vibrating with integrated grizzly feeder	<b>Drive:</b>	Flange mounted hydraulic motor
<b>Control:</b>	Variable speed control through a proportional flow control valve	<b>Grizzly:</b>	2 replaceable, stepped cartridge type grizzlies 50mm (2") nominal aperture, self cleaning – total grizzly length: 2.12m (6' 11")
<b>Vibrating unit:</b>	Twin heavy-duty cast eccentric shafts running in spherical roller bearings, gear coupled at drive end	<b>Underscreen:</b>	Rubber blanking mat optional. Can be substituted for optional wire meshes, used in conjunction with optional bypass conveyor.
<b>Length:</b>	4.25m (13' 11")	<b>Automatic feeder:</b>	Variable speed control via engine load sensing or optional jaw level sensor
<b>Width:</b>	1.10m (3' 7")		







## PREMIERTRAK 450



# PRODUCT CONVEYOR

<b>Conveyor type:</b>	Troughed belt conveyor
<b>Design:</b>	Hydraulic raise and lower facility to aid rebar removal & transportation. Fully lowers for maintenance. Fully removable modular unit to aid access and maintenance
<b>Belt type:</b>	EP500/3 with 8mm top and 2mm bottom cover, vulcanised
<b>Belt width:</b>	1000mm (40")
<b>Discharge height:</b>	3.9m (12' 10") (standard)
<b>Stockpile volume:</b>	96m <sup>3</sup> (125 cu. yd.)
<b>Drive:</b>	Direct drive hydraulic motor
<b>Tunnel:</b>	Excellent tunneling with chasis side covers to minimise rebar snagging
<b>Feedboot:</b>	abrasion resistant steel liners at feed point
<b>Belt adjustment:</b>	Screw adjusters at head and tail drum

<b>Belt covers:</b>	Optional aluminium removable dust covers fitted to head section beyond magnet
<b>Belt scraper:</b>	Rosta scraper as standard
<b>Lubrication:</b>	Remote head drum grease points
<b>Skirting:</b>	Wear resistant skirting rubber to magnet, after magnet belt troughing prevents spillages

## DUST SUPPRESSION SYSTEM

Sprays bars with atomiser nozzles mounted over crusher mouth, product conveyor feed and discharge points. Piped to an inlet manifold for client's pressured water supply.

<b>Type:</b>	Clean water multi atomising nozzles
<b>Inlet:</b>	Single filtered inlet point on chassis
<b>Pressure:</b>	2.8 bar (42 psi)
<b>Frost protection:</b>	Via system drain valves
<b>Pump:</b>	Optional extra





## PREMIERTRAK 450



# POWER UNIT & HYDRAULICS

<b>Tier 3 Equivalent:</b>	Caterpillar C9.3 6 cylinder, direct injection 230kW (308hp)
<b>Operating conditions:</b>	Ambient temp. +30°C & -5°C (86F & 23F) altitudes up to 2000m (6562ft) above sea level - For applications outside this range please consult with Powerscreen as the plant performance / reliability may be affected.
<b>Operating rpm range:</b>	1600-1700 rpm
<b>Tier 4F / Stage V :</b>	Scania DC9 202kW (275hp)
<b>Operating conditions:</b>	Ambient temperature +30°C and -5°C (86F & 23F) at altitudes up to 2000m (6562ft) above sea level - For applications outside this range please consult with Powerscreen as the plant performance / reliability may be affected.
<b>Operating rpm range:</b>	1400-1650 rpm
<b>Fuel tank capacity:</b>	500 L (120 US G)
<b>Hydraulic tank capacity:</b>	210 L (109 US G)
<b>Reductant tank size:</b>	60 L (16 US G)
<b>DEF tank capacity:</b>	19 L (5 US G)
<b>Emission control:</b>	Selective Catalytic Reduction (SCR)
<b>Plant drive:</b>	High quality pumps driven via engine PTO's
<b>Clutch type:</b>	Highly efficient, self-adjusting HPTO 12 dry plate clutch with electro hydraulic operation
<b>Crusher drive:</b>	Direct drive via wedge belts, Tier 3: Clutch pulley diameter 200mm (8") Tier 4F/Stage V: Clutch pulley diameter 212mm (8.3")
<b>Drive tensioning:</b>	idler pulley with screw tensioner for fast and easy belt changes

### Scania Stage V / Tier 4 Final Technology

Scania industrial engines meet the requirements of Stage IV and Tier 4 Final without the need for a particulate filter. With only EGR and SCR technology, the installation will be unaffected. Scania-developed systems for engine management and emission control ensure an attractive blend of performance and operating economy.

The function of the SCR system is based on the injection of a urea solution (AdBlue or DEF, Diesel Exhaust Fluid) into the after-treatment system. With EGR, a small amount of exhaust gases is returned to the intake of the engine, diluting the intake air and reducing the oxygen concentration. This will reduce the combustion temperature and further reduce emissions.





## PREMIERTRAK 450



## TRACKS

**Type:** Heavy duty tracks

**Sprocket centres:** 3.76mm (12'4'')

**Track width:** 500 mm (1' 8'')

**Gradeability:** 30° maximum

**High Speed:** 1.1km/h (0.7mph)

**Drive:** Hydraulic motors

**Tensioning:** Grease tensioned







## PREMIERTRAK 450



# PLANT CONTROLS AND OTHER

## CHASSIS

Heavy duty I-section welded construction, provides maximum strength and accessibility.

## GUARDS

Wire mesh, sheet metal or GRP guards are provided for all drives, flywheels, pulleys and couplings. The guards provided are designed and manufactured to meet CE and ANSI standards. Easily removed guarding provides excellent access to the power unit and its components for servicing and maintenance.

## PLATFORMS

Incline ladders with double handles and platforms provide access to both sides of power unit and feeder.

## PLANT CONTROLS

Full PLC control panel

Full system diagnostics

### Controls fitted to the plant include:

Sequential start up

Engine (start/stop/speed)

Crusher (start/stop)

Optional side conveyor (start/stop)

Product conveyor (start/stop and raise/lower)

Magnet (start/stop)

## UMBILICAL CONTROL

An umbilical control unit is also supplied as standard with the plant controls tracking function & has a stop button for the plant.

## RADIO REMOTE CONTROL

Complete with integrated tracking functions and plant stop button. Note - Only available in certain countries where type approval has been obtained.

Remote can also be used to:

Feeder (start/stop)

Feeder (speed)

## PLANT CHUTE-WORK

**Crusher feed chute:** One piece fabrication with 15mm thick, 400 grade brinell wear plate with 20mm thick bottom plate.

**Grizzly fines/ bypass:** Standard 2 way position, all material directed to product conveyor or material passing VGF is directed to product conveyor and material through mesh to bypass conveyor. Optional deflector plate to divert all pre screened material onto bypass Conveyor.





## PREMIERTRAK 450



# ↓ OPTIONS 1

## HOPPER EXTENSIONS

**Hopper type:** Bolt on extended hopper

**Hopper Capacity:** 12m<sup>3</sup> (14.4 cu. yd.)

## EXTENDED PRODUCT CONVEYOR

**Conveyor type:** Troughed belt conveyor

**Design:** Hydraulic raise and lower facility to aid rebar removal and transportation.  
Fully lowers for maintenance.  
Fully removable modular unit to aid access and maintenance

**Belt type:** EP500/3 with 8mm top and 2mm bottom cover, vulcanised

**Belt width:** 1000mm (40")

**Discharge height:** 4.1m (13' 5")

**Stockpile volume:** 111m<sup>3</sup> (145 cu. yd.)

## SINGLE DECK POST-SCREEN

**Screen area:** 2.44m x 1.52m (8' x 5')

**Tensioning:** Side tensioned

**Drive:** Hydraulic with heavy duty bearing

**Screen angle:** 23°

**Oversize conveyor:** 650mm (26")

**Discharge height:** 2.8m (9' 2")

**Stockpile volume:** 36m<sup>3</sup> (47 cu. yd.)

**Fines conveyor:** 1400mm (56")

**Discharge height:** 2.8m (9' 2")

**Stockpile volume:** 36m<sup>3</sup> (47 cu. yd.)

\*Both hydraulically fold for transport





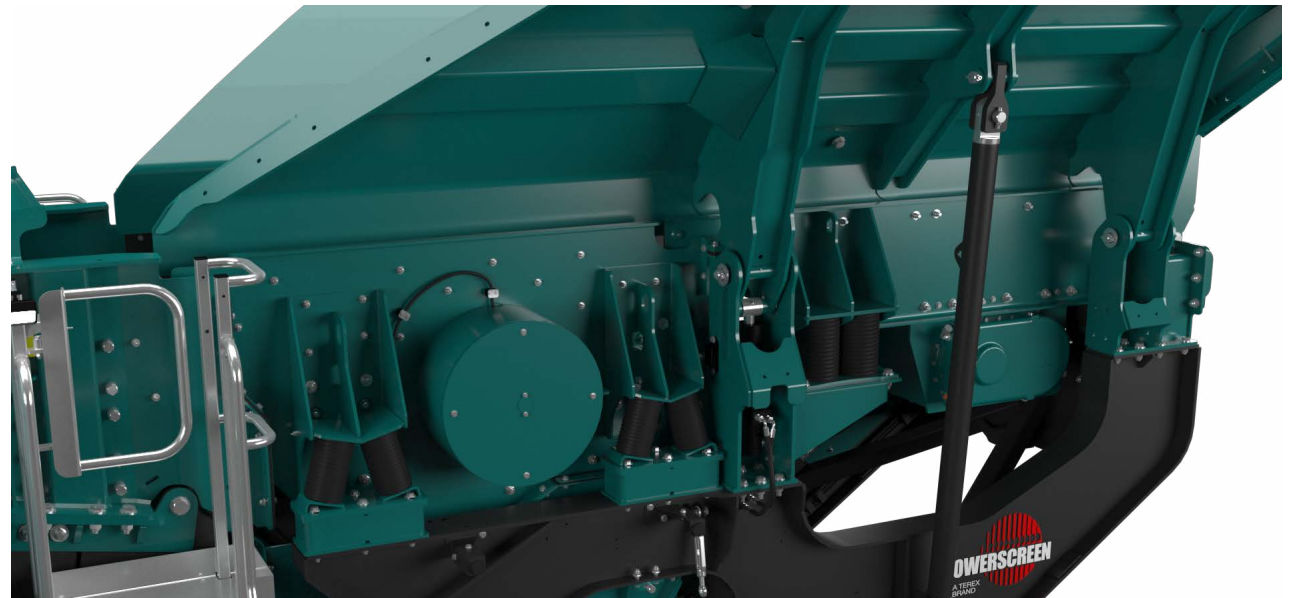
## PREMIERTRAK 450



## **OPTIONS 2**

### PAN FEEDER AND LIVE PRE-SCREEN

<b>Pan type:</b>	Sprung vibrating pan	<b>Vibrating unit:</b>	Single shaft, out of balance weights, flange mounted hydraulic motor
<b>Vibrating unit:</b>	Twin heavy duty cast eccentric shafts running in spherical roller bearings, gear coupled at drive end, flange mounted hydraulic motor	<b>Top deck:</b>	2 piece cartridge with self cleaning fingers 75mm (3") nominal spacing Length: 2.1(6' 10") Width: 1.1m (3' 7")
<b>Dimensions:</b>	Length: 2.3m (7' 6") Width: 1m (3' 3")	<b>Bottom deck:</b>	16° Incline with 30mm (1.2") mesh Length: 2.1m (6' 10") Width: 1.1m (3' 7")
<b>Pan:</b>	20mm thick fully welded base plate with 12mm thick abrasion resistant liners	<b>Chute:</b>	Bypass chute with internal 2 way flap door fitted, to control direction of fines, either forward onto the product belt or onto the optional side conveyor.
<b>Control</b>	Variable speed control through control panel Radio remote standard for start/stop	<b>Modular section:</b>	feeder mounted on removable modular sub frame
<b>Pre-screen:</b>	Spring mounted vibrating unit 9mm throw, 1000rpm screen speed		





## PREMIERTRAK 450



## OPTIONS 3

### BYPASS CONVEYOR

**Conveyor type:** Troughed, modular with hydraulic raise and lower  
Folds hydraulically for transport

**Belt width:** 650mm (26")

**Discharge height:** 2.19m (7' 2")

**Stockpile volume:** 17m<sup>3</sup> (22 cu.yd.)

**Drive:** Direct drive hydraulic motor

**Position:** Discharge on LHS or RHS of plant

### EXTENDED BYPASS CONVEYOR

**Belt width:** 650mm (26")

**Discharge height:** 3.0mm (9' 10")

**Stockpile volume:** 46m<sup>3</sup> (60 cu. yd.)

### MAGNET

**Options:** CP020 single pole (S.P.)  
TP020 twin pole (T.P.)

**Belt width:** 750mm (2' 6")  
**Centres:** 1700mm (5' 7")

**Drive / control:** Direct drive hydraulic motor, variable speed control

**Discharge:** LHS Standard, RHS also possible

**Weight:** S.P. 1000kg (2204lbs)  
T.P. 1500kg (3306lbs)





## PREMIERTRAK 450



## OPTIONS 4

### FEEDER UNDERSCREEN MESH

**Position:** Removable wire meshes fitted in lieu of the standard rubber blanking mat, used in conjunction with optional bypass conveyor  
**Width:** 1075mm (3' 6")  
**Length:** 1250mm (4' 1")

### BELT WEIGHER

**Type:** Roller scale & display unit  
**Accuracy:** + 1.0 + 0.5%  
**Display:** Separate read out near control panel

### ALL OPTIONS

- Chamber unblocking system
- Deflector plate under crusher
- Bypass conveyor
- Magnet prepared
- Bolt on hopper extensions
- Stockpile sensor
- Dust covers
- Single pole overband magnetic separator
- Twin pole overband magnetic separator
- Belt weigher

### UNDER CRUSHER DEFLECTOR PLATE

A hydraulic adjustable deflector plate, increases belt protection in recycling applications. Situated immediately below the crusher outlet point & is fitted with a 15mm thick wear resistant plate. Deflector plate working angle can be adjusted from the PLC control system.

### HOT/COLD CLIMATE OILS

Cold climate oils - (recommended for ambient temperatures between -20 to +30°C) - Hydraulic & lubrication oils only. Other component modifications may be required for low temperature operations. Please contact the Powerscreen sales & applications department with any queries

Hot climate oils - (recommended for ambient temperatures between +15 and +50°C)

- Extended product conveyor
- Single deck post screen
- Pre screen
- Jaw level sensor
- Plant lighting mast
- Third position bypass chute
- Blanking mat - required if bypass is not selected
- Hydraulic jacking legs





## PREMIERTRAK 450

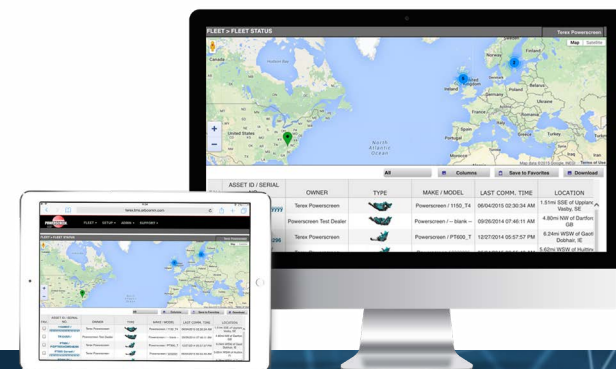


# ↓ POWERSCREEN PULSE


## RECORD, DISPLAY AND ANALYSE DATA:

HIGH EFFICIENCY THROUGH PRECISE INFORMATION

Available online anywhere and at any time: comprehensive information on the GPS location, start and stop times, fuel consumption, tonnages, cone settings, wear ratings, operating hours, maintenance status, and much more.



  
**AVAILABLE  
ANYWHERE  
AND AT ANY TIME**

  
**DASHBOARD  
DISPLAY**

  
**FLEET  
OVERVIEW**

  
**WEEKLY REPORT  
DIRECT TO YOUR  
INBOX**

  
**GPS: MACHINE  
TRACKING**

  
**REPORTING  
UTILISATION, PERFORMANCE  
& PART SPECIFIC**

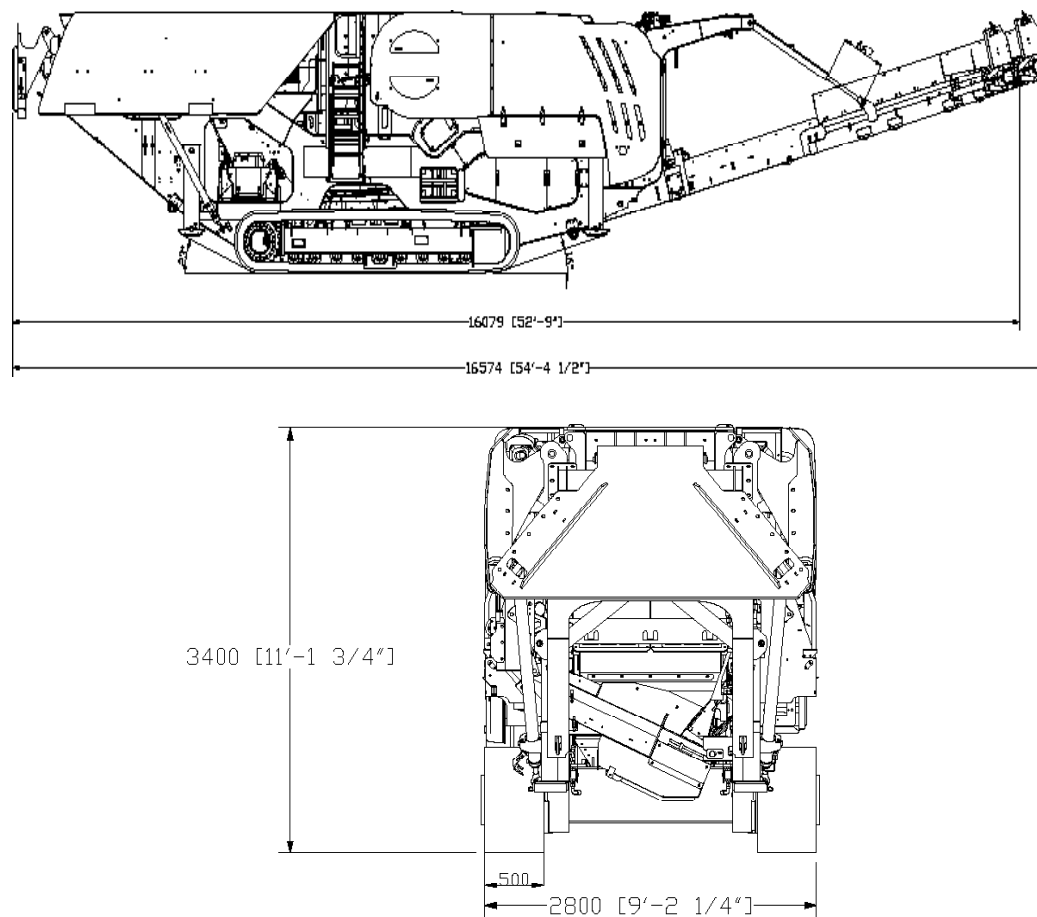


## PREMIERTRAK 450



## DIMENSIONS

Figure 1: Premiertrak 450  
VGF & Bypass Conveyor  
Transport Position



MORE DIMENSIONS OVERLEAF

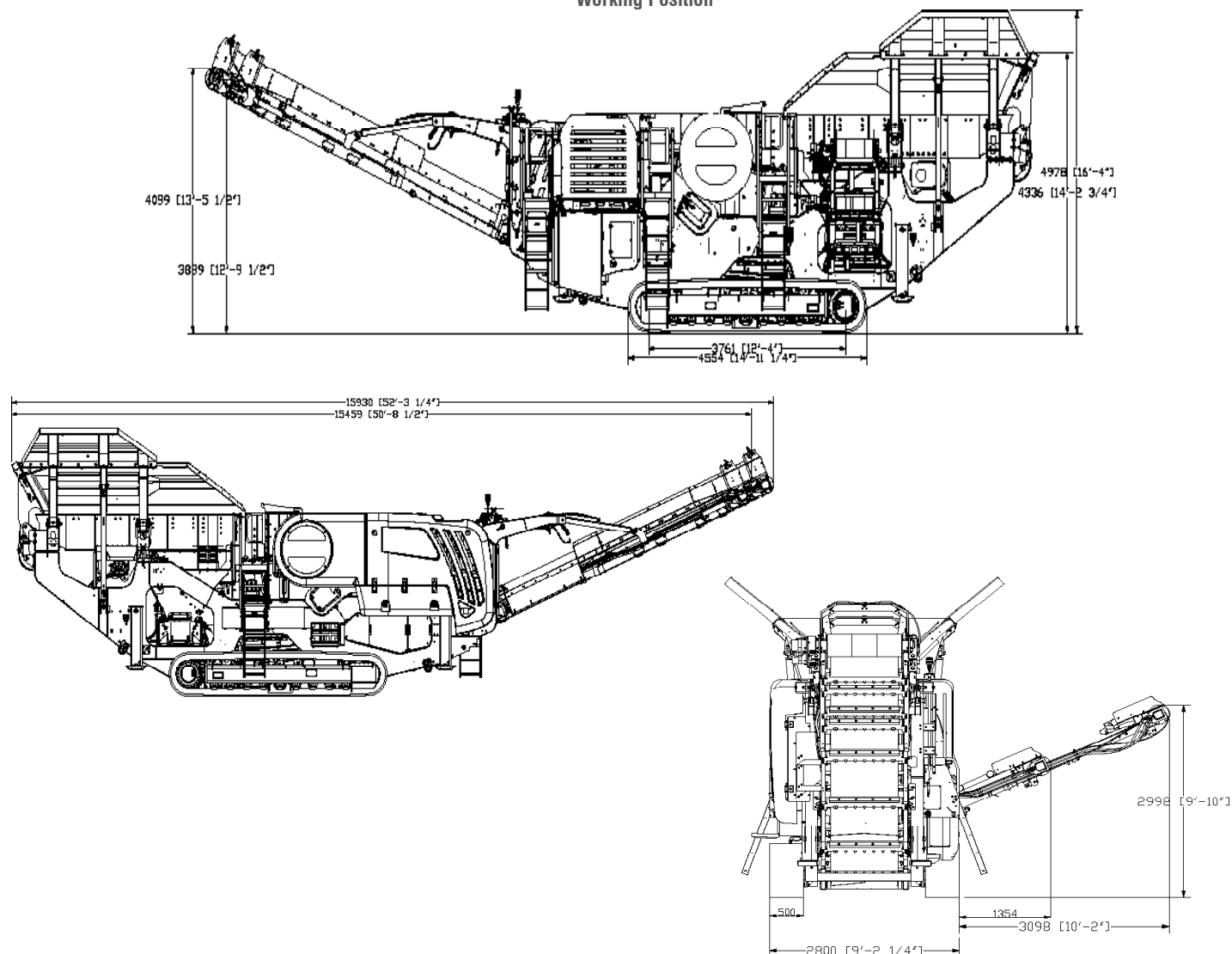


## PREMIERTRAK 450



## DIMENSIONS

Figure 2: Premiertrak 450  
VGF & Bypass Conveyor  
Working Position



MORE DIMENSIONS OVERLEAF

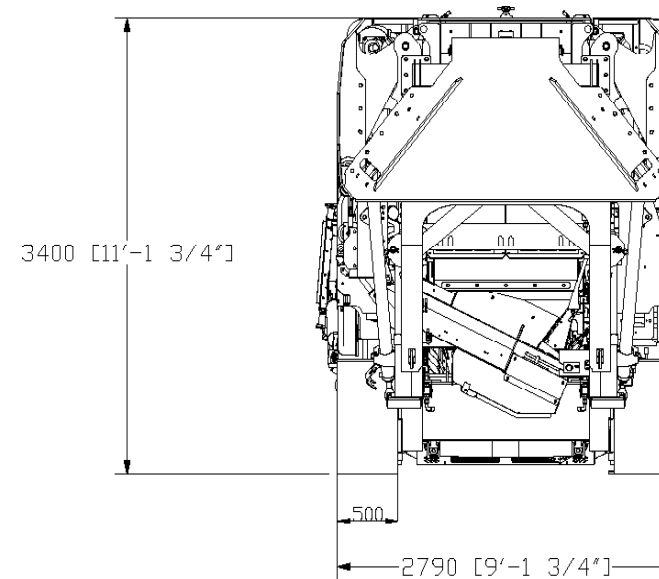
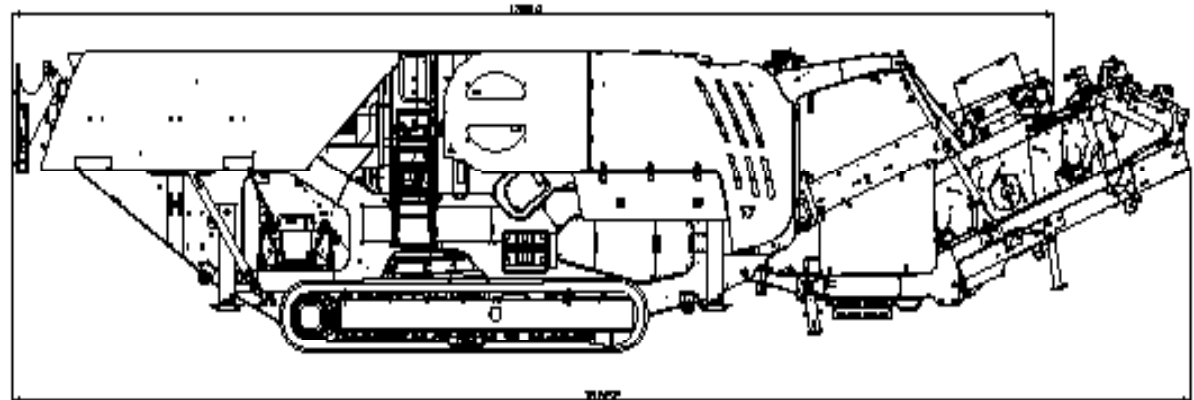


## PREMIERTRAK 450



# DIMENSIONS

Figure 5: Premiertrak 450  
VGF & Post-Screen  
Transport Position



MORE DIMENSIONS OVERLEAF

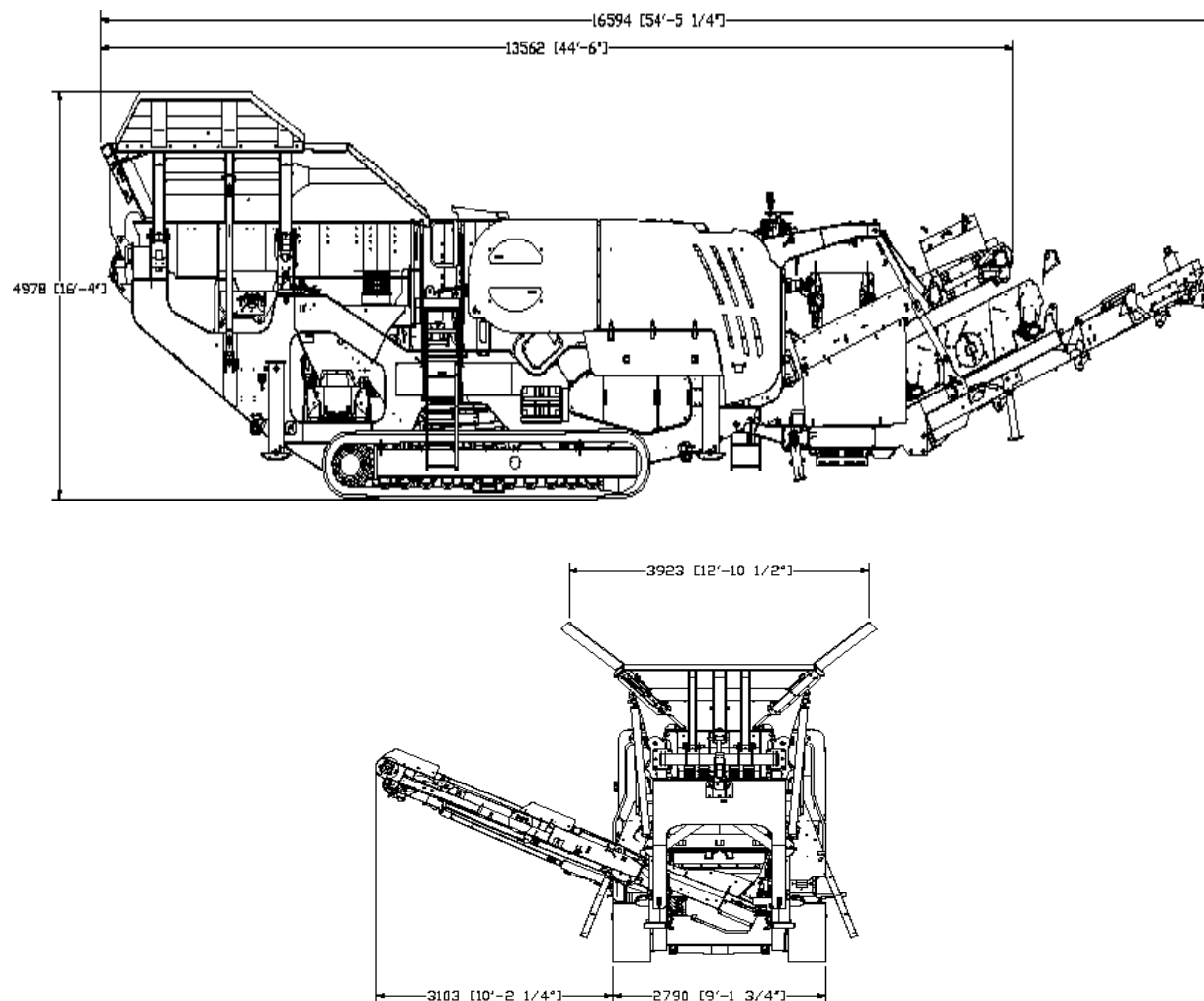


## PREMIERTRAK 450



## DIMENSIONS

Figure 6: Premiertrak 450  
VGF & Post-Screen  
Working Position



MORE DIMENSIONS OVERLEAF





### **Powerscreen equipment complies with CE requirements.**

Please consult Powerscreen if you have any other specific requirements in respect of guarding, noise or vibration levels, dust emissions, or any other factors relevant to health and safety measures or environmental protection needs. On receipt of specific requests, we will endeavour to ascertain the need for additional equipment and, if appropriate, quote extra to contract prices.

All reasonable steps have been taken to ensure the accuracy of this publication, however due to a policy of continual product development we reserve the right to change specifications without notice.

It is the importers' responsibility to check that all equipment supplied complies with local legislation regulatory requirements.

Plant performance figures given in this brochure are for illustration purposes only and will vary depending upon various factors, including feed material gradings and characteristics. Information relating to capacity or performance contained within this publication is not intended to be, nor will be, legally binding.

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