POWERSCREEN®
PREMIERTRAK 450

JAW CRUSHER

GET STARTED

TECHNICAL SPECIFICATION - REV 2 01/10/2023

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PREMIERTRAK 450

- OVERVIEW
- JAW CRUSHER
- HOPPER
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- PRODUCT CONVEYOR
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OVERVIEW

SPECIFICATION

Total Weight	Tier 3: 49,125kg (108,302lbs) - VGF, HA chamber, standard hopper, bypass conveyor, single pole magnet	
	Tier 4F: 49,162kg (108,383lbs) - VGF, HA chamber, standard hopper, bypass conveyor, single pole magnet	
	Stage V: 49,165kg (108,390lbs) - VGF, HA chamber, standard hopper, bypass conveyor, single pole magnet	
Transport	**Length**	16.1m (52' 10")
	Height	3.4m (11' 2") (VGF)
	Width	2.8m (9' 2")
Working	**Length**	15.5m (50'10")
	Height	4.4m(14'5") (VGF)
	Width	4.3m (14'1") with standard bypass conveyor
Crusher Type:	Single toggle jaw, feed opening 1100mm x 700mm (44"x 28")	
Power Unit	Caterpillar C9.3 230kW (308hp), Scania DC9 202kW (275hp)	
Plant Colour	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

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JAW CRUSHER

Crusher type: Single toggle Jaw with hydraulic setting adjustment
Feed opening: 1100mm x 700mm (44" x 28")
Bearings: Self aligning spherical rollers
Lubrication: Grease
Drive: V belts with screw adjust tensioner
Crusher speed: 235-280rpm
Minimum setting: 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.

Maximum setting: 140mm (5.6") CSS standard jaws (HA) (with new liners)
150mm (6") CSS standard jaws (HR) (with new liners)
Adjustment HA: Hydraulical wedge adjusted via panel
Adjustment HR: 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

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HOPPER

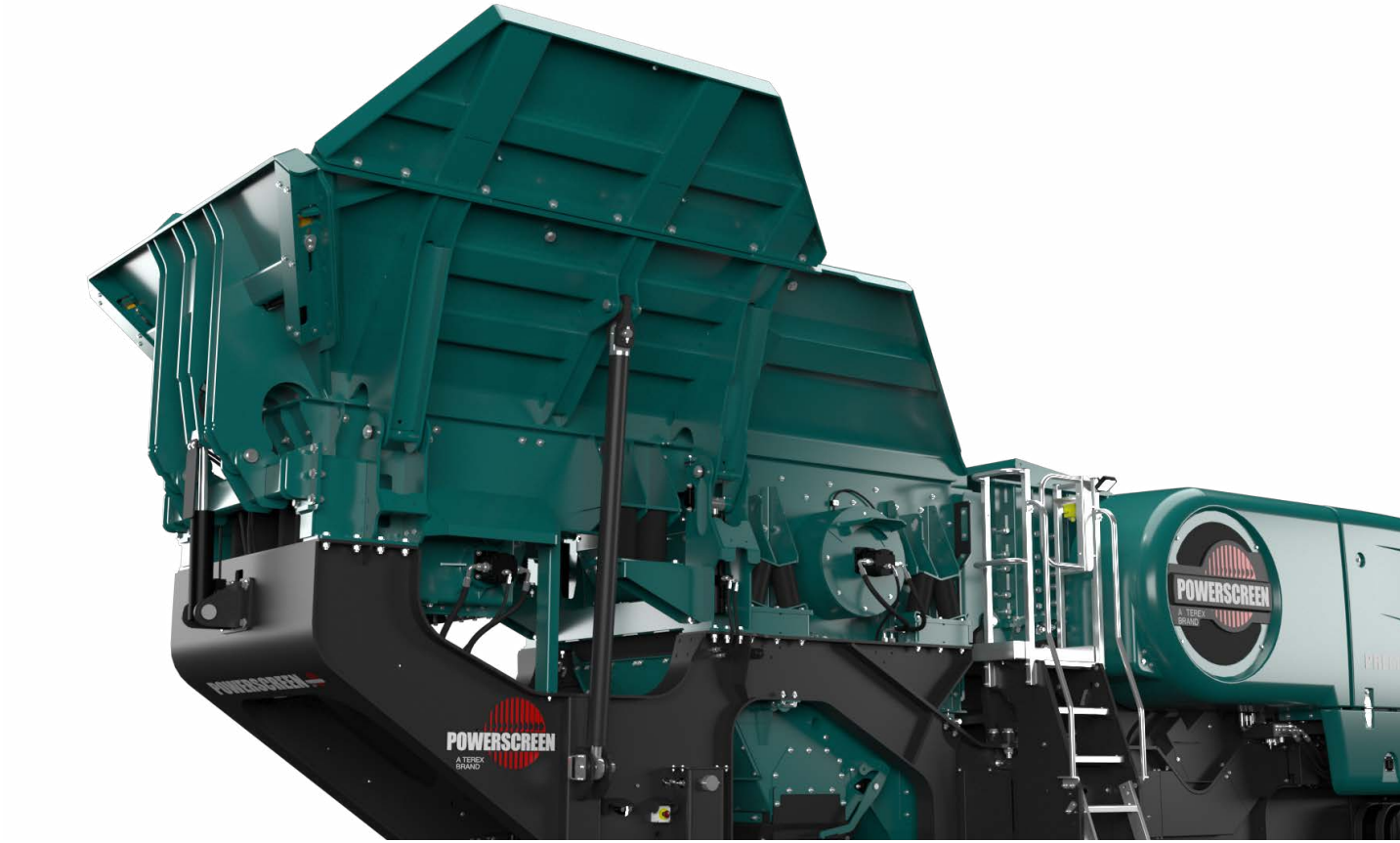
Hopper type: Boltless hydraulic folding hopper with ground level set via hydraulic wedge lock fixing and hopper support braces

Hopper length: 4.75m (15’ 7”)

Hopper width: 2.5m (8’ 2”)

Hopper capacity: Standard 10m³ (13 cu. yd.)

Hopper body: 15mm, 400 grade Brinell wear plate



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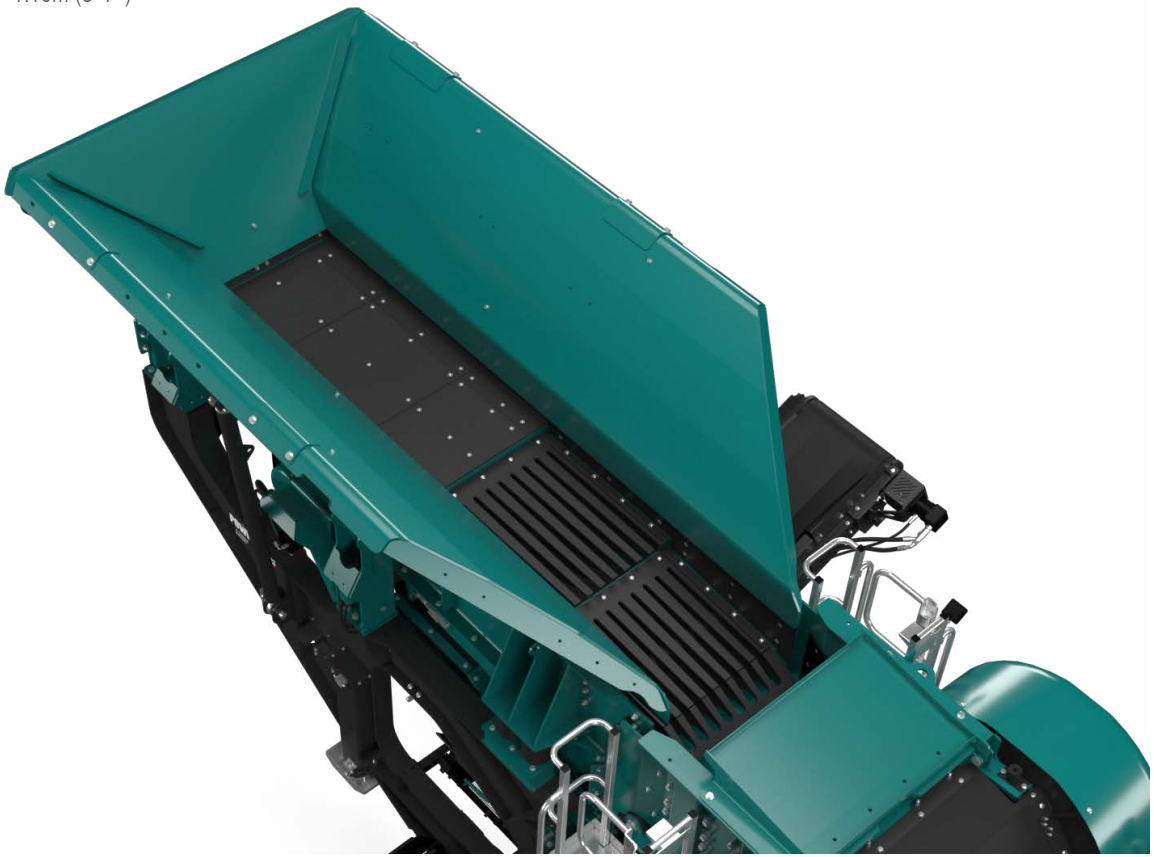
VIBRATING GRIZZLY FEEDER

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



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PRODUCT CONVEYOR

Conveyor type: Troughed belt conveyor
Design: Hydraulic raise and lower facility to aid rebar removal & 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: 3.9m (12' 10") (standard)
Stockpile volume: 96m³ (125 cu. yd.)
Drive: Direct drive hydraulic motor
Tunnel: Excellent tunneling with chasis side covers to minimise rebar snagging
Feedboot: abrasion resistant steel liners at feed point
Belt adjustment: Screw adjusters at head and tail drum
Belt covers: Optional aluminium removable dust covers fitted to head section beyond magnet
Belt scraper: Rosta scaper as standard
Lubrication: Remote head drum grease points
Skirting: 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.

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

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POWER UNIT & HYDRAULICS

Tier 3 Equivalent:	Caterpillar C9.3 6 cylinder, direct injection 230kW (308hp)
Operating conditions:	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.
Operating rpm range:	1600-1700 rpm
Tier 4F / Stage V :	Scania DC9 202kW (275hp)
Operating conditions:	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.
Operating rpm range:	1400-1650 rpm
Fuel tank capacity:	500 L (120 US G)
Hydraulic tank capacity:	210 L (109 US G)
Reductant tank size:	60 L (16 US G)
DEF tank capacity:	19 L (5 US G)
Emission control:	Selective Catalytic Reduction (SCR)
Plant drive:	High quality pumps driven via engine PTO's
Clutch type:	Highly efficient, self-adjusting HPTO 12 dry plate clutch with electro hydraulic operation
Crusher drive:	Direct drive via wedge belts, Tier 3: Clutch pulley diameter 200mm (8") Tier 4F/Stage V: Clutch pulley diameter 212mm (8.3")
Drive tensioning:	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.

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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

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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 ot the powerunit 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 brinel 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

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OPTIONS 1

HOPPER EXTENSIONS

Hopper type: Bolt on exteneded hopper

Hopper Capacity: 12m³ (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: 111m³ (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: 36m³ (47 cu. yd.)

Fines conveyor: 1400mm (56")

Discharge height: 2.8m (9' 2")
Stockpile volume: 36m³ (47 cu. yd.)

*Both hydraulically fold for transport

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OPTIONS 2

PAN FEEDER AND LIVE PRE-SCREEN

Pan type: Sprung vibrating pan

Vibrating unit: Twin heavy duty cast eccentric shafts running in spherical roller bearings, gear coupled at drive end, flange mounted hydraulic motor

Dimensions: Length: 2.3m (7' 6") Width: 1m (3' 3")

Pan: 20mm thick fully welded base plate with 12mm thick abrasion resistant liners

Control Variable speed control though control panel
Radio remotre standard for start/stop

Pre-screen: Spring mounted vibrating unit
9mm throw, 1000rpm screen speed

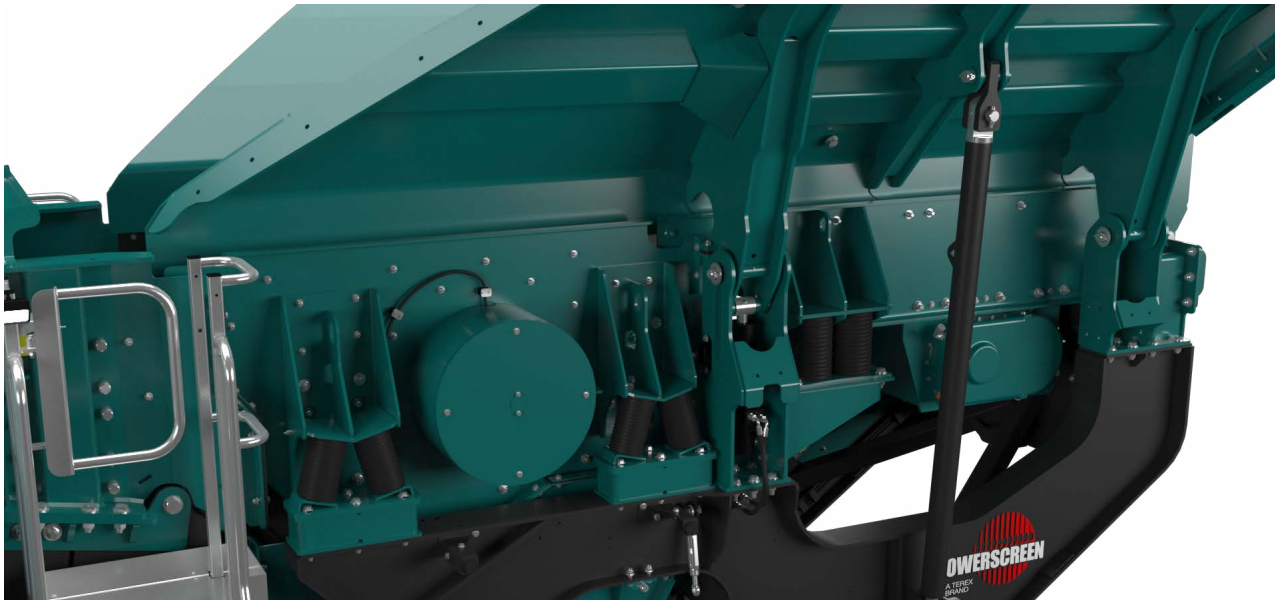
Vibrating unit: Single shaft, out of balance weights, flange mounted hydraulic motor

Top deck: 2 piece cartridge with self cleaning fingers 75mm (3") nominal spacing
Length: 2.1(6' 10") Width: 1.1m (3' 7'')

Bottom deck: 16^0 Incline with 30mm (1.2") mesh
Length: 2.1m (6' 10") Width: 1.1m (3' 7'')

Chute: 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.

Modular section: feeder mounted on removable modular sub frame



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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: 17m³ (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: 46m³ (60 cu. yd.)

MAGNET

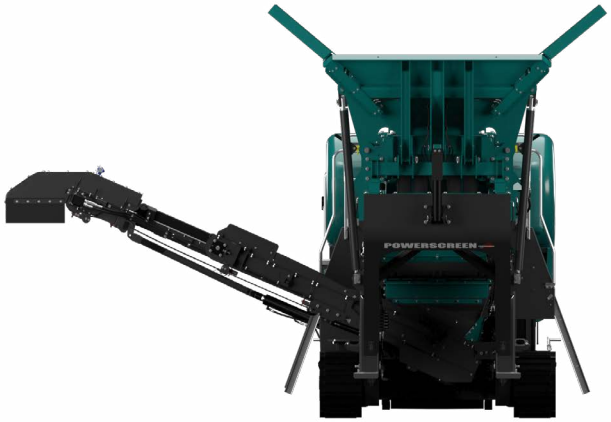
Options: CP020 single pole (S.P.)
TP020 twin pole (T.P.)

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)



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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

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 +30ºC) - 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 +50ºC)

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
- 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

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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

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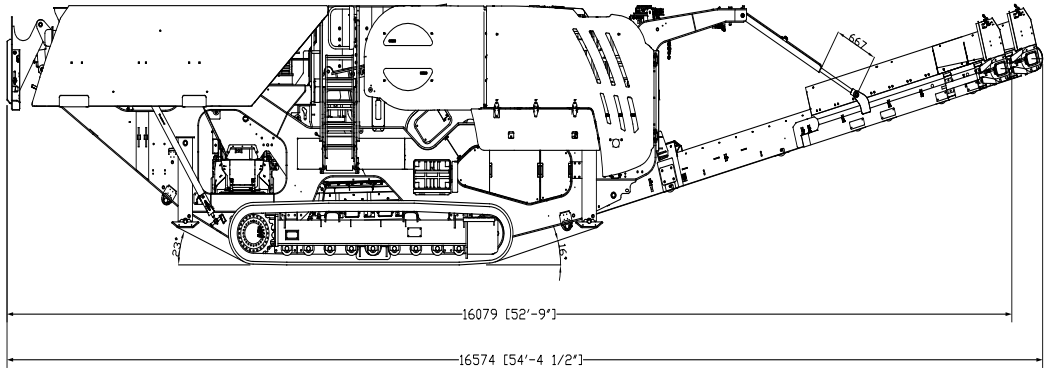
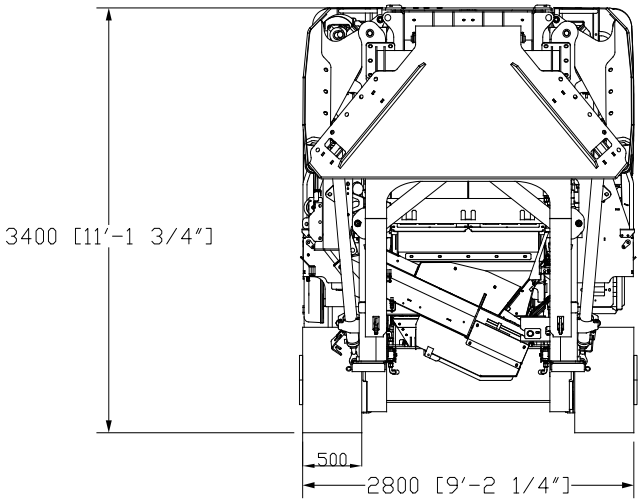
DIMENSIONS

Figure 1: Premiertrak 450
VGF & Bypass Conveyor
Transport Position





MORE DIMENSIONS OVERLEAF

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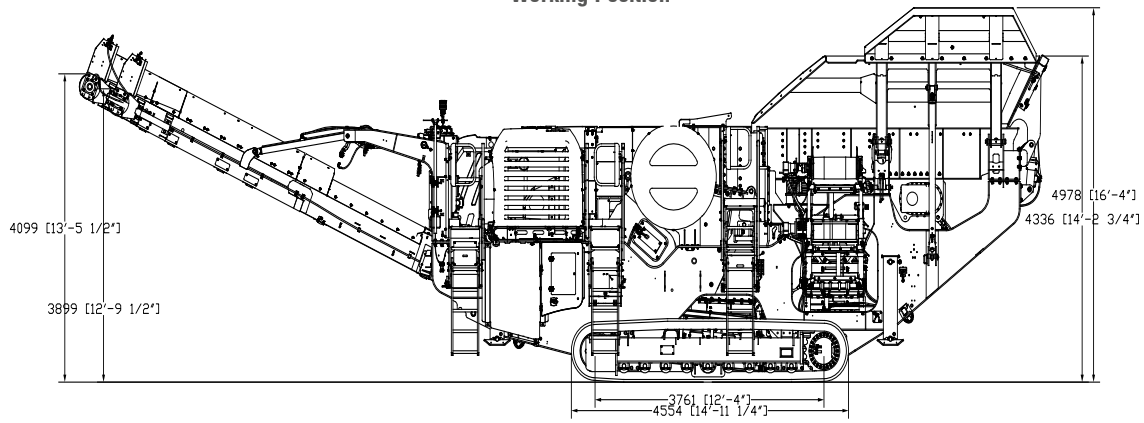
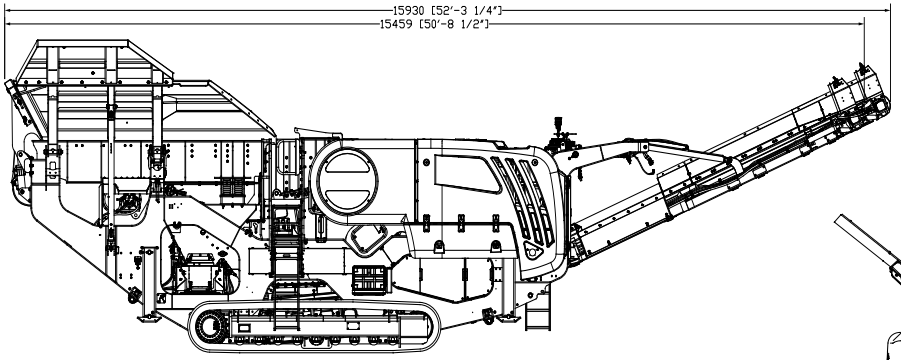
Figure 2: Premiertrak 450
VGF & Bypass Conveyor
Working Position





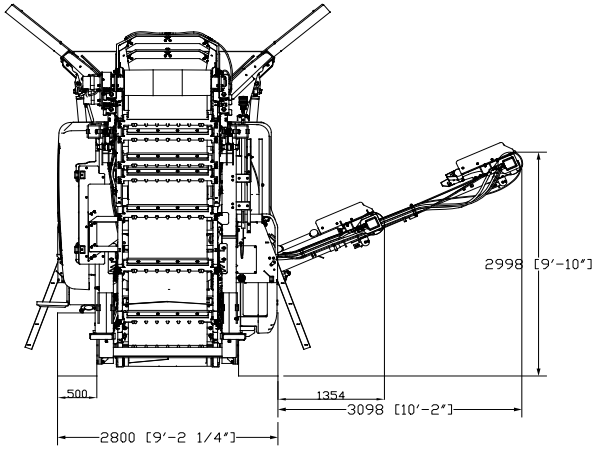


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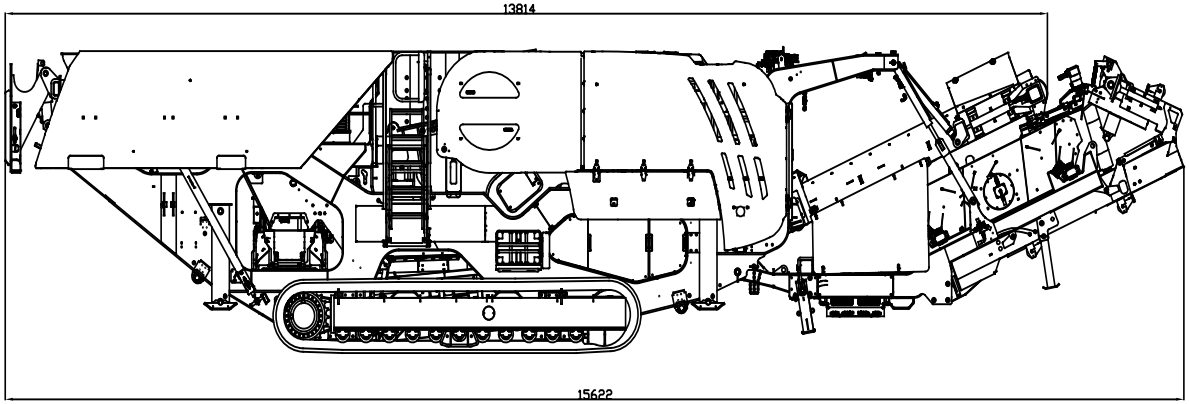
Figure 5: Premiertrak 450
VGF & Post-Screen
Transport Position



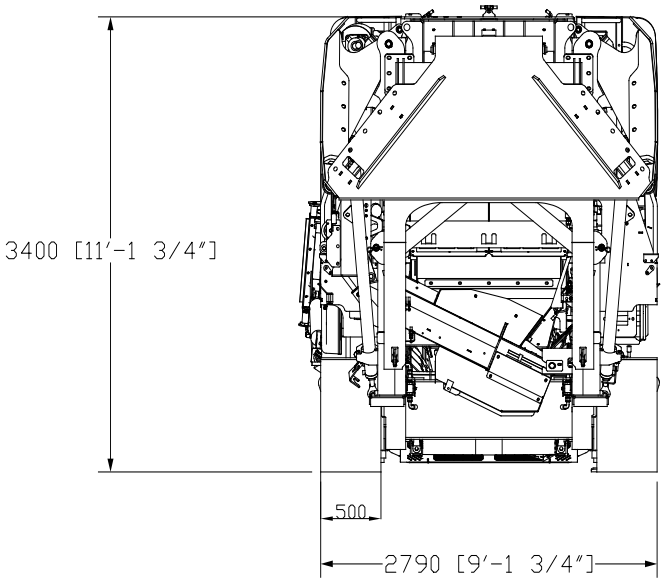


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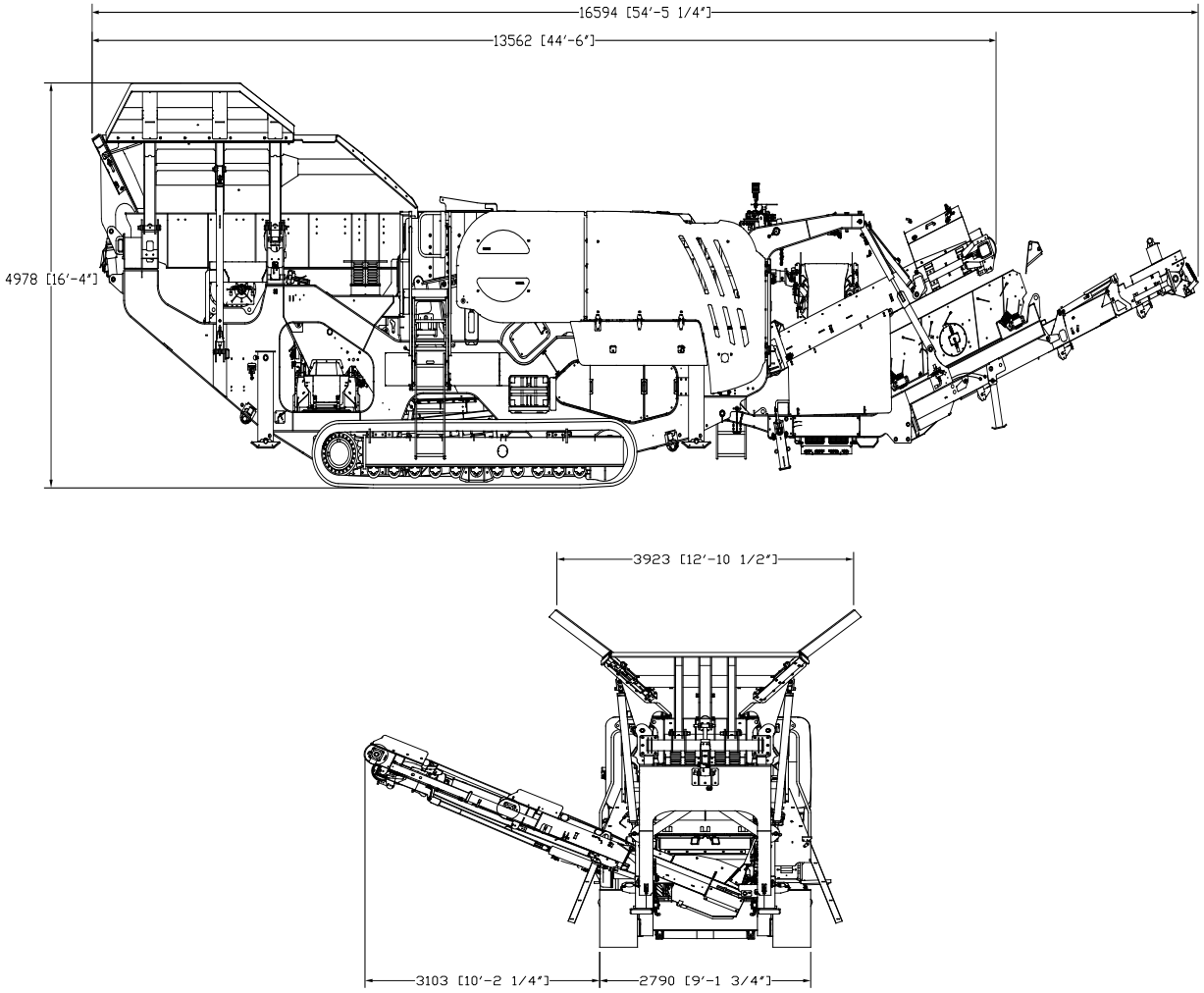
Figure 6: Premiertrak 450
VGF & Post-Screen
Working Position



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.

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