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Research & Development Facility

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ABOUT US

CORPORATE OVERVIEW

POWERPLUS GROUP INC., USA, a leading global manufacturer of a comprehensive range of construction equipment, is part of Worldwide Techno-Equipment Group (1973) Pte Ltd. Established since 1973, POWERPLUS GROUP has evolved into a world-renowned organization that offers machinery unparalleled in price, quality and performance.

POWERPLUS machinery is manufactured with enhanced capacities to exceed even the most stringent international standards of quality and safety. With the aim of producing machinery that is able to withstand even the most extreme climatic conditions and rugged terrains, POWERPLUS Research & Development team which has its Headquarters in the United States, has been the backbone behind all its innovative engineering solutions.

Optimizing the best of technology from the United States, Europe and Japan, POWERPLUS machinery is configured to its ideal technical capabilities. A multinational team of engineers analyzes the data collected from our network of distributors worldwide and are on the constant lookout for ways to maximize the life-span of POWERPLUS machinery.

Today the Company's clientele spans over 100 countries across 6 continents.

At the forefront of setting quality standards, every POWERPLUS machine undergoes a technical review after 2 years and is tested rigorously before a new model is churned out of its production facility.

With an emphasis on delivering value and excellent after-sales service to our customers, the POWERPLUS experience outshines and outclasses its competitors in all aspects.



ENGINEERED FOR OPTIMAL DURABILITY

- Pushing new boundaries, POWERPLUS range of motor graders offers high-level performance and flexibility with the objective of ensuring optimal accuracy for the most delicate tasks.
- Through hours of testing performed in different terrains, altitudes and climatic conditions, POWERPLUS has built their finest grader which delivers exceptional durability, unparalleled control as well as grading precision with smooth gear and directional changes.
- Engineered with field-proven components for powerful and reliable service life, this new generation multi-purpose construction machine ensures consistent quality and results whether you are building a road, trenching, scarifying or land grading.

CONDUCIVE WORKING ENVIRONMENT FOR OPERATOR'S COMFORT AND INCREASED PRODUCTIVITY

- Fully enclosed ergonomic cabin designed to keep operators comfortable and productive, complete with adjustable control console, POWERPLUS air-suspension seats, ample storage space, MP3 player and air-conditioning.
- Sound-resistant cabin built to reduce external noise and dampen vibration levels to enhance operator's concentration and comfort.
- Streamline dashboard with well-displayed instrument panel for easy monitoring of all vital information and functions onboard.

PERKS FOR END-USERS

- Choice of CAT or CUMMINS engine for maximum power and fuel efficiency.
- Smooth-shifting transmission allows consistent, easy and seamless operation.
- Balanced hydraulic flow that delivers consistent, precise and responsive control.
- High-strength reinforced frame structure for a solid working platform.
- International warranty coverage promises to deliver years of trouble-free service and quality assurance.

MINIMIZED ENVIRONMENTAL IMPACT

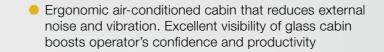
- Motor graders manufactured to meet international safety and environmental standards.
- The careful selection of premium parts and technology enables maximum productivity and lowers fuel consumption and emission levels.
- Up to 80% of recyclable parts for a clean and green environment.













POWERTRAIN



ENGINE

POWERPLUS Motor Graders come equipped with CAT3306B(L) or CUMMINS 6BTA / 6CTA series engine to provide unparalleled performance, superior reliability, lower fuel consumption and emissions levels.

For improved spare parts availability, the POWERPLUS' Engineering Team has selected world-renowned engines that are covered under an international warranty package. This enables end-users from across the globe to conveniently tap on the OEM's service network when required.



TRANSMISSION

To achieve a top-notch grade, power delivered through the transmission to the axles ought to be seamless.

POWERPLUS Motor Graders are equipped with ZF6WG180(L) / ZF6WG200 which produces excellent gear-shifting quality that all operators desire, without any interruptions to the tractive force. It is purposefully designed with extremely short shafts to prevent gear-meshing faults.



FULL-FLOATING REAR TANDEM AXLES

As graders are required to adapt to a multitude of ground conditions, the rear axles ought to produce smooth movements coupled with high pulling force.

POWERPLUS produces its very own full-floating rear tandem axles Transtorque $^{\text{TM}}$ to have a better control on performance and quality. With Transtorque $^{\text{TM}}$, we have successfully allocated the most ideal axles loads for superiority stability even while cutting hard surfaces.

FRONT FRAME

POWERPLUS has re-engineered the front frame with a top and bottom plate construction. Hydraulic hoses are repositioned on the sides to enable operators to perform regular checks and replace any damaged hoses simply by removing a sheet metal cover.







DRAWBAR, CIRCLE AND MOLDBOARD

The new A-frame draw bar adopts a heavy-duty boxed frame design for high strength. It is also made wider to ensure ultimate durability and prolonged component life.

The internal circle teeth which undergoes an Italian technology heat treatment process to resist wear are now enlarged to provide a larger contact area. This improves turning ability of the moldboard especially under heavy loads.

The moldboard is made from high carbon steel with optimal curvature for excellent load distribution and minimal material build-up in the circle area. It can pitch, tilt and move laterally to make the finest of grades. Cutting edges



DIFFERENTIAL

EATON NoSPIN differential system improves performance during turning or when operating on wet and muddy ground conditions.

This component features 100% automatic locking action even if one wheel is suspended in the air and simultaneously enables a fully locked rear axle to automatically disengage when wheel speeds are mismatched. The result is maximum delivery of available torque to the wheels with ample traction to overcome the roughest terrains.



ALL WHEEL DRIVE

All-wheel drive (AWD) function is available on PP14GA-IX, It is especially designed for poor underfoot conditions such as snow, mud, gravel, sand and etc. This feature delivers superior traction and significantly improves draft control, steering and responsiveness.



MOLDBOARD

The moldboard, with its optimal curvature has excellent rolling performance, enabling POWERPLUS Motor Graders to perform a multitude of operations. Having a long wheel base allows operators to achieve a large blade angle which permits material to roll freely along the blade.

Standard moldboard length for PP12G-IX is 3.7m (12ft) and PP14G-IX is 4.3m (14ft). Moldboard extensions are available to increase moldboard surface area and extend reach capability.



FRONT BLADE

The optional front blade which is hydraulically operated enables operators to perform some light dozing, clearing obstacles that come in the way. This attachment transforms the motor grader into a multi-purpose equipment.



REAR RIPPER

The optional rear ripper penetrates tough ground conditions and rip through exhaustively, resulting in easier material movement of the moldboard. Standard rear ripper comes with three (3) shanks while a five (5) shanked option is available.



MID-MOUNT SCARIFIER

The optional mid-mount scarifier is positioned in between the front axle and moldboard to scarify hardy ground surfaces. This allows the blade to move the loosened material in a single pass. Standard mid-mounted scarifier comes with nine (9) shanks while an eleven (11) teeth option is available.



OPERATOR STATION EASY MAINTENANCE

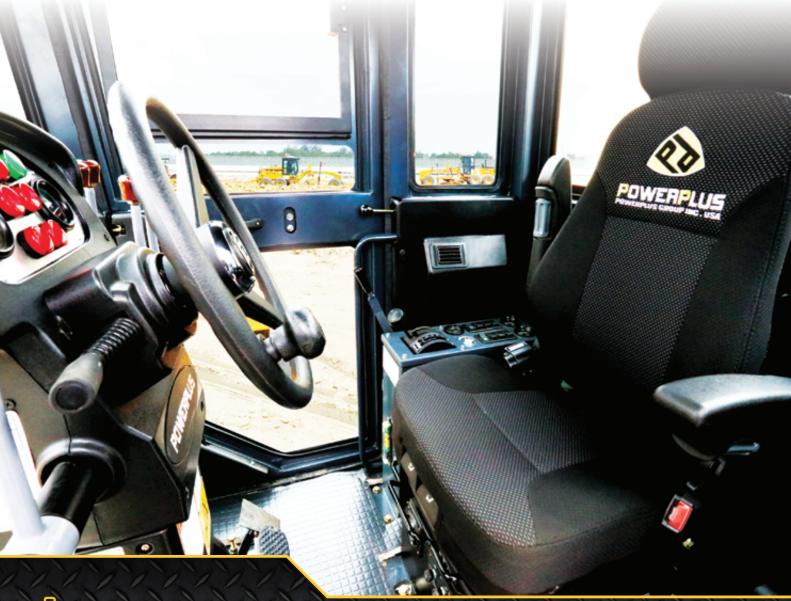
OPERATOR'S COMFORT

With a fully adjustable control console column and POWERPLUS air-suspension seat, any operator regardless of size and weight will be able to work in comfort. The ergonomic operator chair is both practical and comfortable, allowing operators to tackle whatever tasks the day brings.

POWERPLUS Motor Graders boast a spacious cabin, enabling operators to stand and move about during operation. The cabin is fitted with noise and vibration dampers to ensure a pleasant and silent working environment.

The wide-view glass cabin also allows operators to have a clear vision of the front wheels and moldboard positioning for precise manoeuvring and ensuring a safe operation.





MAINTENANCE

Daily checks can be performed at ground-level and various aspects of the machine's condition can be monitored through the displayed instrument panel to speed up inspection time and keep daily operating costs low.

Large gullwing service doors open wide to provide easy access to the engine compartment maintenance and repairs. Filters are conveniently located to speed up routine replacements. POWERPLUS Motor Graders use spin-on filters.



SAFETY

Safety is of utmost importance to POWERPLUS. As motor graders are used for various applications, we are able to adapt and configure our equipment to suit different working environment and its requirements. A ROPS/FOPS cabin with additional protective mesh on the glass doors and windows are an optional feature to ensure safe operations. Additional lights can also be equipped for underlit working conditions and night operations.



CONTROLS

Fitted with traditional lever control system, any operator with prior experience will be able to easily navigate their way around a POWERPLUS Motor Grader. For new operators, well-displayed symbols will enable them to quickly master the controls like an expert.

Short throw levers are ergonomically-positioned within easy reach for ease of multi-function controls. This function allows operators to work hours at a go without putting unnecessary strain on their bodies. Thus, ensuring maximum comfort to operators and reduces operator fatigue.





9

PP120G-IX

ENGINE	
Model	CUMMINS 6BT5.9-C130
Туре	Direct injection, turbocharged, water cooled
Rated Power	130 hp
Rated Speed	2200 rpm

TRANSMISSION

- - -	ADVANCE YD13, Powershift, single-shift
Type	lever, neutral shift lock device

TRAVEL SPEED		
Gear	Forward	Reverse
1st	6.9 km/h	6.9 km/h
2nd	10.7 km/h	17.3 km/h
3rd	17.3 km/h	37.8 km/h
4th	26.0 km/h	-
5th	37.8 km/h	-
6th	53.4 km/h	-

HYDRAULIC SYSTEM

Differential Lock	NO-SPIN
Oil Motor	EATON
Distributing Valve	HUSCO

STEERING SYSTEM

Maximum Turning Range	Left or right 49 °
Frame Articulation	Left or right 26°
Minimum Turning Radius	6600 mm
System Pressure	17.5 MPa

AXLES

Front	Ground clearance 430 mm and oscillation angle (total) 32°
Rear	POWERPLUS full floating rear tandem axle

DRIVE

Main Reducer	Spiral bevel gear, single gear
Final Reducer	Single stage chain drive
Tandem Drive	Double row roller chains

WEIGHT Operating Weight 12500 kg

BRAKES

Service Brake	Hydraulic assisted and inner-expanding brake
Parking Brake	Mechanical and inner-expanding brake type

MOLDBOARD

BLADE RANGE	
Moldboard Side Shift Right / Left	815 mm / 815 mm
Maximum Extending Length Right / Left	1886 mm / 1916 mm
Rotating Angle	360 °
Maximum Lift Above Ground	410 mm
Maximum Grading Depth	560 mm
Maximum Blade Angle Right / Left	90 °
Blade Tip Angle	29 ° - 77 °

TIRES

Tire Size	17.5-25-14PR
Tire Pattern	L2

REFILL CAPACITY	
Fuel Tank	370 L
Engine Oil	18 L
Transmission	28 L
Rear Axle	18 L
Tandem Housing	90 L
Hydraulic System	65 L

CARIN

An ergonomically designed sound proof cabin, enabling wide operational view, comes standard with designer upholstery, adjustable POWERPLUS mechanical suspension driver's seat, streamline dashboard, aircon and radio/mp3 player for extensive operations with well deserved comfort.

PP12G-IX

ENGINE	NGINE	
Model	CUMMINS 6BTA5.9-C180	
Type	Direct injection, turbocharged, water cooled	
Rated Power	180 hp	
Rated Speed	2200 rpm	

	Lyne	ZF 6WG180 (L) Hydro-electrical control with
		single lever operations

TRAVEL SPEED			
Gear	Forward	Reverse	
1st	6.5 km/h	6.5 km/h	
2nd	11.4 km/h	14.6 km/h	
3rd	14.6 km/h	30.0 km/h	
4th	24.8 km/h	-	
5th	30.0 km/h	-	
6th	49.2 km/h	-	

HYDRAULIC SYSTEM

	Differential Lock	NO-SPIN
	Oil Motor	EATON
	Distributing Valve	HUSCO

STEERING SYSTEM

Maximum Turning Range	Left or right 49°
Frame Articulation	Left or right 26°
Minimum Turning Radius	7300 mm
System Pressure	17.5 MPa

AXLES

Front	Ground clearance 430 mm and oscillation angle (total) 32°
Rear	POWERPLUS full floating rear tandem axle

DRIVE

	Main Reducer	Spiral bevel gear, single gear
	Final Reducer	Single stage chain drive
	Tandom Drivo	Double row reller chains

WEIGHT	
Operating Weight	15000 kg

BRAKES Service Brake Hydraulic assisted and inner-expanding brake Parking Brake Mechanical and inner-expanding brake type

MOLDBOARD	
Dimensions	3658 mm x 580 mm x 16 mm

BLADE RANGE	
Moldboard Side Shift Right / Left	815 mm / 815 mm
Maximum Extending Length Right / Left	1886 mm / 1916 mm
Rotating Angle	360 °
Maximum Lift Above Ground	450 mm
Maximum Grading Depth	535 mm
Maximum Blade Angle Right / Left	90 °
Blade Tip Angle	29 ° - 77 °

TIRES	
Tire Size	17.5-25-14PR
Tire Pattern	L2

REFILL CAPACITY		
Fuel Tank	370 L	
Engine Oil	17 L	
Transmission	28 L	
Rear Axle	18 L	
Tandem Housing	90 L	
Hydraulic System	65 L	

CABIN

An ergonomically designed sound proof cabin, enabling wide operational view, comes standard with designer upholstery, adjustable POWERPLUS mechanical suspension driver's seat, streamline dashboard, aircon and radio/mp3 player for extensive operations with well deserved comfort.



PP14G-IX

ENGINE	
Model	CUMMINS 6CTA8.3-C190
Туре	Direct injection, turbocharged, water cooled
Rated Power	190 hp
Rated Speed	2200 rpm

TRANSMIS	SION
Type	ZF 6WG180 (L) Hydro-electrical control
71	with single lever operation

TRAVEL SPEED		
Gear	Forward	Reverse
1st	6.5 km/h	6.5 km/h
2nd	11.4 km/h	14.6 km/h
3rd	14.6 km/h	30.0 km/h
4th	24.8 km/h	-
5th	30.0 km/h	-
6th	49.2 km/h	-

HYDRAULIC SYSTEM		
	Differential Lock	NO-SPIN
	Oil Motor	EATON
	Distributing Valve	HUSCO

STEERING SYSTEM	
Maximum Turning Range	Left or right 49°
Frame Articulation	Left or right 26°
Minimum Turning Radius	7400 mm
System Pressure	16 MPa

AXLES	
Front	Ground clearance 610 mm and oscillation angle (total) 32°
Rear	POWERPLUS full floating rear tandem axle

DRIVE	
Main Reducer	Spiral bevel gear, single gear
Final Reducer	Single stage chain drive
Tandem Drive	Double row roller chains

WEIGHT	
Operating Weight	16000 kg

BRAKES	
Service Brake	Hydraulic assisted and inner-expanding brake
Parking Brake	Mechanical and inner-expanding brake type

3 mm x 580 mm x 16 mm
-

BLADE RANGE	
Moldboard Side Shift Right / Left	815 mm / 815 mm
Maximum Extending Length Right / Left	2341 mm / 2346 mm
Rotating Angle	360 °
Maximum Lift Above Ground	450 mm
Maximum Grading Depth	535 mm
Maximum Blade Angle Right / Left	90 °
Blade Tip Angle	29 ° - 77 °

TIRES		
Tire Size	17.5-25-14PR	
Tire Pattern	L2	

REFILL CAPACITY	
Fuel Tank	370 L
Engine Oil	27 L
Transmission	28 L
Rear Axle	18 L
Tandem Housing	90 L
Hydraulic System	65 L

An ergonomically designed sound proof cabin, enabling wide operational
view, comes standard with designer upholstery, adjustable POWERPLUS
mechanical suspension driver's seat, streamline dashboard, aircon and
radio/mp3 player for extensive operations with well deserved comfort.

As our products are upgraded periodically, we reserve all rights to change any information without prior notice.

PP14G-IX ADVANCE | PP14GA-IX

ENGINE (PP14G-IX ADVANCE)		
Model	CUMMINS 6CTA8.3-C215 / SC11CB220 (CAT 3306B TECH)	
Туре	Direct injection, turbocharged, water cooled	
Rated Power	215 / 220 hp	
Rated Speed	2200 rpm	

ENGINE (PP14GA-IX)	
Model	SC11CB220 (CAT 3306B TECH)
Туре	Direct injection, turbocharged, water cooled
Rated Power	220 hp
Rated Speed	2200 rpm

TRANSMISSION		
Ту	/ре	ZF 6WG200 Hydro-electrical control with single lever operation

TRAVEL SPEED		
Gear	Forward	Reverse
1st	6.86 km/h	6.86 km/h
2nd	11.78 km/h	15.51 km/h
3rd	15.51 km/h	32.59 km/h
4th	26.17 km/h	-
5th	32.59 km/h	-
6th	50.86 km/h	-

HYDRAULIC SYSTEM	HYDRAULIC SYSTEM	
Differential Lock	NO-SPIN	
Oil Motor	EATON	
Distributing Valve	HUSCO	

STEERING SYSTEM	
Maximum Turning Range	Left or right 49°
Frame Articulation	Left or right 26°
Minimum Turning Radius	7600 mm 7400 mm
System Pressure	16 MPa

AXLES		
Front	Ground clearance 610 mm and oscillation angle (total) 32°	
Rear	POWERPLUS full floating rear tandem axle	

DRIVE		
Drive Type	PP14G-IX ADVANCE	4 Tandem Drive
	PP14GA-IX	All Wheel Drive
Main Reducer	Spiral bevel gear, single gear	
Final Reducer	Single stage chain drive	
Tandem Drive	Double row roller chains	

WEIGHT	
Operating Weight	17000 kg

BHAKES		
Service Brake	Hydraulic assisted and inner-expanding brake	
Parking Brake	Mechanical and inner-expanding brake type	

Dimensions	4320 mm x 580 mm x	: 16 mm
BLADE RANGE		
Moldboard Side Shift Right / Left		815 mm / 815 mm
Maximum Extending Length Right / Left		2367 mm / 2372 mm
Rotating Angle		360 °
Maximum Lift Above Ground		450 mm

TIRES	
Blade Tip Angle	29 ° - 77 °
Maximum Blade Angle Right / Left	90 °
Maximum Grading Depth	535 mm

17.5-25-14PR

L2

REFILL CAPACITY	
Fuel Tank	370 L
Engine Oil	27 L
Transmission	28 L
Rear Axle	18 L
Tandem Housing	90 L
Hydraulic System	65

CARIN

Tire Size

Tire Pattern

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PP16G-IX ADVANCE

ENGINE		
Model	CUMMINS QSL8.9-C260	
Туре	Electrical injection, Turbocharged	
Rated Power	260 hp	
Rated Speed	2200 rpm	

TRANSMISSION	
IVDE	ZF 6BP230 Hydro-electrical control with single lever operation

TRAVEL SPEED		
Gear	Forward	Reverse
1st	5.81 km/h	6.13 km/h
2nd	8.91 km/h	14.9 km/h
3rd	14.2 km/h	34.9 km/h
4th	21.64 km/h	-
5th	33.22 km/h	-
6th	48.8 km/h	-

HYDRAULIC SYSTEM	
Differential Lock	NO-SPIN
Oil Motor	EATON
Distributing Valve	HUSCO

STEERING SYSTEM	
Maximum Turning Range	Left or right 45°
Frame Articulation	Left or right 25°
Minimum Turning Radius	8600 mm
System Pressure	16 MPa

AXLES	
Front	Ground clearance 480 mm and oscillation angle (total) 34°
Rear	POWERPLUS full floating rear tandem axle

DRIVE	
Main Reducer S	Spiral bevel gear, single gear
Final Reducer S	Single stage chain drive
Tandem Drive	Double row roller chains

WEIGHT	
Operating Weight	19500 kg

BRAKES	
Service Brake	Caliper disc brakes
Parking Brake	Flexible shaft control actuated inner expanding drum brake

MOLDBOARD	
Dimensions	4422 mm x 688 mm x 20 mm

BLADE RANGE	
Moldboard Side Shift Right / Left	715mm / 685mm
Maximum Extending Length Right / Left	2230mm / 1970 mm
Rotating Angle	360 °
Maximum Lift Above Ground	425 mm
Maximum Grading Depth	470 mm
Maximum Blade Angle Right / Left	90 °
Blade Tip Angle	36 ° - 66 °

TIRES	
Tire Size	20.5-25-16PR
Tire Pattern	L2

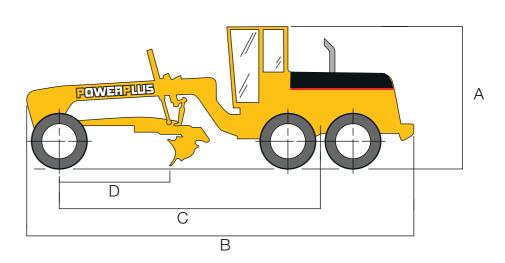
REFILL CAPACITY	
Fuel Tank	504L
Engine Oil	23L
Transmission	35L
Rear Axle	35L
Tandem Housing	50x2L
Hydraulic System	130L

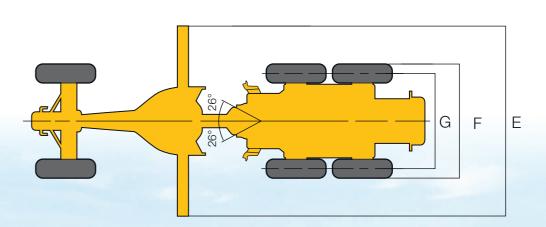
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DIMENSIONS		PP120G-IX	PP12G-IX	PP14G-IX	PP14G-IX ADVANCE	PP14GA-IX	PP16G-IX ADVANCE	
Α	Overall Height	mm	3465	3420	3420	3420	3420	3650
В	Overall Length	mm	8290	8820	8945	8945	8945	9550
С	Wheelbase To Center Of Tandem	mm	6100	6100	6100	6100	6100	6660
D	Cutting Edge To Center Of Front Axle	mm	2600	2600	2600	2600	2600	3000
Е	Width Of Standard Moldboard	mm	3658	3658	4268	4320	4320	4422
F	Width Over Tires	mm	2600	2600	2600	2600	2600	2800
G	Tread (Rear)	mm	2120	2120	2120	2120	2120	2280







OPTIONAL

ENGINE

Cold Weather Kit
Desert Filter
Enlarged Radiator

CABIN

Glass Protection Heater Rear-View Camera ROPS/FOPS Frame

WHEELS & TIRES

Snow Chains Solid Tires

ACCESSORIES

Automatic Levelling System (various brands available) LED Lights Solar Film

ATTACHMENTS







REAR RIPPER FRONT DOZER BLADE





AUTOMATIC LEVELING SYSTEM

*Availability of equipment may vary across different regions. Kindly consult your POWERPLUS territory sales personnel for details.

GLOBAL NETWORK DISTRIBUTION

POWERPLUS is committed to creating long-term value for its customers, partners and stakeholders. Our Service Centers are strategically located in major construction, industrial and manufacturing hubs in key regions around the world.

Given our years of experience in the industry, it is no doubt that our customers can always rely on us for the expertise, services and solutions we provide. Most importantly, you will find our after-sales service a reliable and satisfying experience at all our Service Centers worldwide.



DURABILITY, RELIABILITY & AFFORDABILITY

POWERPLUS Parts and Service Centers provides a convenient channel for you to order the original spare parts through a network of highly certified OEM manufacturers and an effective distribution of spare parts through our global network of vendors.

From determining the correct part number to locating and ordering, we are committed to working round-the-clock for timely solutions and delivery to ensure we serve our customers promptly and efficiently.

Coupled with affordable parts prices and high interchangeability across the POWERPLUS machinery range, we take pride in being able to offer value to our customers with cost-effective solutions. Most importantly, you are able to retain the machines with high residual value to enhance your return on investment.







SERVICE

Delivering Unsurpassed Customer Service - Because You Matter.

Our dedicated team of customer service executives, skilled engineers and technicians are well-trained to ensure timely and propitious support throughout the customer life cycle. With a comprehensive dealer network coverage and service facilities support, POWERPLUS dedicated team of account managers and service teams from the Customer Service Charter are trained to respond to your queries and requests promptly and efficiently.

To deliver more, our service package includes educating our customers with training, maintenance and servicing to ensure customers are empowered to utilize the machines at its best; therefore optimizing the machine's performance and increasing uptime.

At POWERPLUS, we strive to build and maintain long-term relationships with each and every client based on trust, integrity and professionalism.







