

# Lenovo P14s | Gen 1

Version: 1.0 | 09/28/2020

## Downloads

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Hardware Maintenance Manual	<a href="#">P14s   HMM</a>
Drivers & Software	<a href="#">P14s   Drivers &amp; Software</a>

## SECTION I: Platform Overview

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Description	<p>ThinkPad P14s i LENOVO'S LIGHTEST MOBILE WORKSTATION</p> <p>The ThinkPad® P14s i, Lenovo's most mobile workstation, offers the latest Intel Core processors and NVIDIA Quadro professional graphics all in a compact 14 inch chassis. Striking a balance between power and mobility, the ThinkPad P14s is perfect for highly mobile power users, allowing students, engineers or designers to be creative anytime, anywhere.</p> <p>Built with an advanced, comprehensive suite of ThinkShield security features, the ThinkPad P14s i has you protected from every angle — giving you the freedom to innovate fearlessly.</p>
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## CPU

Processor Support	Commet Lake U Series Core i5/i7
Socket Type	BGA

## Operating Systems

Preloaded	Windows 10 Pro 64 (19H2) Windows 10 Home 64 (19H2) Windows 10 Home Single Language 64(19H2) Windows 10 Home Chinese Language Edition 64(19H2)
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	Windows 10 CMIT Government Edition Ubuntu (Version20.04)
Supported	Windows 10 Pro 64 (19H2) Windows 10 Home 64 (19H2) Windows 10 Home Single Language 64(19H2) Windows 10 Home Chinese Language Edition 64(19H2) Windows 10 CMIT Government Edition Ubuntu (Version20.04) Red Hat Enterprise Linux (Certification support, Version8.2)

## Memory

Number of DIMM Slots	1 soldered-down DIMM + 1 DIMM slot
Channels	Single Channel w/ 1 soldered DIMM Dual Channel w/ 1 soldered DIMM + 1 add-in DIMM
Type	DDR4
ECC Support	No
Speed	physical 3200 MHz operational 2666MHz
Max DIMM Size	32GB
Max System Memory	48GB
Min System Memory	8GB
Soldered Memory	8GB/16GB

## Storage

Storage Slots	1 x M.2 2280
SATA	/
PCIe	Solid State Drive, OPAL2 PCIe-NVMe M.2 2280- TLC (/QLC for Optane Memory with SSD)
SAS	None
Interface	YES
Security	SATA/PCIE
Optional Hard Disk Drive Controllers	OPAL2 for NVMe SSD

## Video

Integrated Graphics	Processor Graphics Intel® UHD Graphics 620
Discrete Graphics	NVIDIA Quadro P520
Adapter	None
Bus Interface	PEG

## Display

Resolutions	FHD / UHD
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## Camera

Resolution	HD 720p
Frames per Second	30 fps
Focus	Fixed 50cm
Camera Interface	USB 2.0
IR Camera	Yes (optional) (with WWAN co-existence), Hybrid Camera

## Keyboard

Number of Keys	US : 84 / UK : 85 / JP : 89
Numpad	No
Size	100% ISO
Function Key Features	Yes
Backlit	Yes
Keyboard size	CS20 KYB
Key stroke	1.8mm
Key pitch	19.05mm
Keyboard backlight	Standard
Keyboard thickness	Standard

## Touchpad / Fingerprint Reader

TrackPoint Details	COMO TrackPoint module (t5.5mm)
Finger Print Reader Model	Synaprics Metallica 8x8 FPR, MoC
Multi-Touch	Yes
Resolution	1000 ppi
TouchPad/Trackpad thickness	3.3mm
TouchPad/Trackpad type	3 BCP
Trackpad size	100mm x 69 mm
Trackpad material/finish	Mylar surface

## I/O – Ports and Connectors

USB	2x USB-A 3.2 (Gen 1) (1 powered)+1 USB-C 3.2 (Gen 1) (DP1.2/PD)
Thunderbolt	1x Thunderbolt 3 (USB-C 3.2 Gen 2/DP1.2/PD)
HDMI	1x HDMI 1.4b
Audio Combo Jack	1x Microphone & Headphone Combo Jack (3.5mm)
Media Card Reader	Dedicated MicroSD Card Reader (UHS-I) (MMC,SD,SDHC SDXC)
Smart Card Reader	Yes (optional)
Power Connector	DC-In
Docking Port	Docking Via Thunderbolt 3 / USB-C
VirtualLink	None
Network adapter	Gigabit Ethernet (RJ45)

## Power Connector

Main	DC-In
USB-C	1x Thunderbolt 3 (USB-C/DP/PD)

## Ethernet

Vendor	Intel
Count	x1
EEPROM	SPI ROM (Merge with BIOS/MEFW)
Speeds	10/100/1000 Mbps
Functions	Wake On LAN MAC Address Pass Through PXE Boot Flash Over LAN
Connectors	RJ45

## WWAN

Model	Fibocom L850-GL LTE CAT9 Fibocom L860-GL LTE CAT16
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## Near Field Communications

Model	Yes, optional
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## Audio

Vendor	Realtek
Type	High Definition Audio Codec
Internal Speaker	Yes, dual speakers
Connectors	Microphone & Headphone Combo Jack (3.5mm)
Chipset	ALC3287
Number of Channels	4-channel DAC, 4-channel ADC
Number of Bits/Audio Resolution	16/20/24-bit PCM format
Sampling Rate (Recording/Playback)	n
Signal to Noise Ratio	90dB Signal-to-Noise Ratio (A-weighting) for ADC input. 100dB Signal-to-Noise Ratio (A-weighting) for DAC output
Analog Audio	None
Dolby Digital	Yes
Digital Out (S/PDIF)	No
Speaker Power Rating	2W@4ohm/ch

## Power adapter

Type	65W AC Adapter
Dimensions	142cc (28.5 x 46 x 108 mm) 65W (*0)
Input Voltage	100-240V

## Security

TPM	Yes, TPM2.0
Asset ID	Yes
vPro	Yes on vPro model

## Chassis Information

Color	Black
Thermal Solutions	Internal Single FAN, Intelligent Cooling
Dimensions	Length 12.95 inches 329 millimeters Width 8.94 inches 227 millimeters

	Height 0.70 inches (Thickest 0.74 inches, Thinnest 0.52 inches) 17.9 millimeters (Thickest 18.9mm, Thinnest 13.14mm)
Weight	with 3 Cell 50WHr Battery, Min 3.24lbs/1.47kg

## Packaging Parameters

Height (mm)	300
Height (inch)	11.8
Width (mm)	446
Width (inch)	17.6
Depth (mm)	81
Depth (inch)	3.1
Weight (kgs)	0.32kg
Weight (lbs)	0.71lbs

## Security & Serviceability

Hardware Maintenance Manual	<a href="https://download.lenovo.com/pccbbs/mobiles_pdf/t14_gen1_p14s_gen1_hmm_en.pdf">https://download.lenovo.com/pccbbs/mobiles_pdf/t14_gen1_p14s_gen1_hmm_en.pdf</a>
Drivers & Software	<a href="https://pcsupport.lenovo.com/us/en/products/laptops-and-netbooks/thinkpad-p-series-laptops/p14s-type-20s4-20s5/downloads/driver-list">https://pcsupport.lenovo.com/us/en/products/laptops-and-netbooks/thinkpad-p-series-laptops/p14s-type-20s4-20s5/downloads/driver-list</a>
Self Healing BIOS	No
Access Panel	Removeable bottom cover
Number of Screws	6
Swappable Components	Base cover assembly, TrackPoint pointing stick, Lenovo factory recovery USB key, Power cord, ac power adapter (65W)
Storage Slots	1 storage slot
Memory	1 soldered down RAM + 1 SODIMM slot
System Board	1190 System Board. No self-service CRU.
Restore CD/DVD/USB Set	None. Purchase via Lenovo Customer Support Center
Cable Lock Support	Security-lock slot
Power-On Password	Yes
Hard Disk Password	Yes; User and Master hard disk password
Supervisor Password	Yes
NIC LEDs (integrated)	Yes (if it means the LED for Ethernet)
Security Chip	Yes (for TMP 2.0)
Access Panel Key Lock	Bottom Cover Tamper Detection
Boot Sequence Control	Yes

# Operating Environment

Operating - Air Temperature	At altitudes up to 2438 m (8000 ft) - Operating: 5°C to 35°C (41°F to 95°F)
Non Operating - Air Temperature	At altitudes up to 2438 m (8000 ft) - Storage: 5°C to 43°C (41°F to 109°F)
Humidity	Operating: 8% to 95% at wet-bulb temperature 23°C (73°F) Storage: 5% to 95% at wet-bulb temperature 27°C (81°F)
Corrosive Gas	G1
Particulates	P1

## SECTION II: Platform Detail

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### Supported Components

Processor	Intel® Core™ i5-10210U (4C) Intel® Core™ i5-10310U (4C), vPro Intel® Core™ i7-10510U (4C) Intel® Core™ i7-10610U (4C), vPro Intel® Core™ i7-10710U (6C) Intel® Core™ i7-10810U (6C), vPro
Memory Support	DDR4 2400MHz SO-DIMM
Chipset (PCH)	Integrated Soc
Size of BIOS Flash	16 MB
Clock	Crystal
Audio	Realtek High Definition Audio
Ethernet	Non-vPro model: Intel® Ethernet Connection I219-V (Jacksonville) vPro model: Intel® Ethernet Connection I219-LM (Jacksonville)

### Memory

System Capacity Options	i5 non-vPro & vPro: 8GB soldered-down + 8/16/32GB i7 4C non-vPro & vPro: 8/16GB soldered-down + 8/16/32GB i7 6C non-vPro & vPro: 16GB soldered-down + 8/16/32GB
non-ECC	8GB DDR4 3200 SDRAM/SoDIMM (operational 2666MHz) 16GB DDR4 3200 SDRAM/SoDIMM (operational 2666MHz) 32GB DDR4 3200 SoDIMM (operational 2666MHz)
Brand of non-ECC Memory	Samsung SK Hynix Micron Ramaxel
ECC	None





# of Cores	4	4	4	4	6	6
# of Threads	8	8	8	8	12	12
Processor Base Frequency	1.6GHz	1.7GHz	1.8GHz	1.8GHz	1.1GHz	1.1GHz
Max Turbo Frequency	4.2GHz	4.4GHz	4.9GHz	4.9GHz	4.7GHz	4.9GHz
Cache	6MB	6MB	8MB	8MB	12MB	12MB
TDP	15W-25W	15W-25W	15W-25W	15W-25W	15W-25W	15W-25W
Intel ARK Spec Link	<a href="#">Intel® Core™ i7-8365U</a>	<a href="#">Intel® Core™ i7-8565U</a>	<a href="#">Intel® Core™ i7-8665U</a>	-	-	-

## Display Specifications

Model	FHD	FHD w/oncell touch	FHD low power	FHD ePrivacy	UHD
Resolution	1920 x 1080	1920 x 1080	1920 x 1080	1920 x 1080	3840 x 2160
Diagonal	14"	14"	14"	14"	14"
Aspect Ratio	Ratio 16:9	Ratio 16:9	Ratio 16:9	Ratio 16:9	Ratio 16:9
Backlight	LED	LED	LED	LED	LED
PPI	157	157	157	157	315
Active Area	309.37 X 174.02	309.31 X 173.99	309.37 X 174.02	309.31 X 173.99	309.31 X 173.99
Refresh Rate	48 / 60 Hz	48 / 60 Hz	60Hz	60Hz	60Hz
Contrast Ratio	700:1 (TYP)	700:1 (TYP)	800:1 (TYP)	1000:1 (TYP)	1500:1 (TYP)
Viewing Angle	85/85/85/8 5 degree	85/85/85/8 5 degree	85/85/85/8 5 degree	85/85/85/8 5 degree	85/85/85/8 5 degree
Color gamut	45% NTSC	45% NTSC	72% NTSC	72% NTSC	100% Adobe
Brightness	250nit	300nit	400nit	500nit	500nit, HDR 400
Contrast	Ratio 700:1	Ratio 700:1	Ratio 800:1	Ratio 1000:1	Ratio 1500:1
Color Depth	16M	262K	16M	16M	1064M
Interface	eDP 1.2	eDP 1.2	eDP 1.3	eDP 1.4	eDP 1.4
Panel ID Recognition	EDID in BIOS Table	EDID in BIOS Table	EDID in BIOS Table	EDID in BIOS Table	EDID in BIOS Table
Weight	285g max	285g max	220g max	340g max	220g max
Color Calibrator	None	None	None	None	X-Rite Factory Color Calibration
Panel Technology	IPS, Anti-Glare	IPS, Anti-Glare	IPS, Anti-Glare	IPS, Anti-Glare	IPS, Glare
Touch Panel	None	YES	None	None	None

## HDD Specifications

2.5" SAS Hard Disk Drive (HDD)	N/A
2.5" SATA Hard Disk Drive (HDD)	N/A

## HDD Storage Device Specifications

Connector	N/A
Transfer Rate (Gb/sec)	N/A

## HDD Performance

Spindle Speed(RPM)	N/A
Power off to Spindle Stop(sec)	N/A
DC Power to Drive Ready(sec)	N/A
Receipt of Start Unit Command to Drive Ready(sec)	N/A
Average Latency(msec)	N/A

## HDD Power Management

Input (VDC)	N/A
Typical (Watts)	N/A
Idle (Watts)	N/A

## HDD Dimensions

Height (mm - Max)	N/A
Width (mm)	N/A
Depth (mm - Max)	N/A
Weight (grams)	N/A

## HDD Temperature

Operating(C) Ambient	N/A
Operating(C) Base Casting	N/A
Non-Operating(C) Ambient	N/A
Gradient(C per Hour)	N/A

## HDD Shock

Operating(Gs @ 2ms)	N/A
Non-Operating(Gs @ 2ms)	N/A

## SSD Specifications

2.5" SATA Solid State Drive (SSD)	N/A
M.2 (NGFF) PCIe Solid State Drive (SSD)	1x M.2 2280 PCIe
2.5" PCIe Solid State Drive (SSD)	N/A
Intel Optane Storage Technology	N/A

## Solid State Storage Devices

Supported Types	M.2
Dimensions inches/centimeters (W x D x H)	22.0 (+-0.15) x 80.0 (+-0.15) x 2.3 (max)
Size	M.2 2280S3
Interface Type	PCIe NVMe
Read/Write IOPS Specifications	Read: 250K (2TB, 1TB, 512GB), 200K (256GB), 320K (512GB Hybrid) Write: 240K (2TB, 1TB, 512GB), 190K (256GB), 250K (512GB Hybrid) Burst 4K Random IOPS , Measured by Crystal Disk Mark (QD32T1, Data size set 1GB)
Bandwidth Performance	PCIe Gen3x4 (8Gb/S) PCIe Gen3x2x2 for Hybrid SSD
Power Consumption (Max)	3.0A (duration for 10 us)
Active(AVG)	5W
Idle	5mW (L1.2)
Min MTBF	2,000,000 (h)
Min Sequential Read	3000MB/s (2TB, 1TB, 512GB), 2900MB/s (256GB), 1550MB/s (512GB Hybrid) 128KB Seq for hybrid
Min Sequential Write	1600MB/s (2TB, 1TB/512GB), 900MB/s (256GB), 990MB/s (512GB Hybrid) 128KB Seq for hybrid

Hardware Encryption	Yes
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## Discrete Graphics Adapter

GPU Name	Quadro P520
CUDA Processing Cores	384
GPU Memory	2 GB
Memory Bandwidth	48 GBps
Memory Type	GDDR5
Memory Interface	64-bit
TGP Max Power Consumption	18W
Display Port	1.4
OpenGL	4.5
Shader Model	5.1
DirectX	12.1
PCIe Generation	3
Floating-Point Performance	1.1
VR Ready	No
Simultaneous Multi-Projection	No
NVIDIA FXAA/TXAA Antialiasing	Yes
NVIDIA nView Display Management Technology	Yes
GPU Direct for Video	No
Vulkan Support	Yes
NVIDIA Optimus	Yes

## WLAN

Model	1) Intel Wi-Fi 6 AX201 2*2ax+BT5.0 Non-vPro PCIE M.2 1216 Module (CNVi) 2) Intel Wi-Fi 6 AX201 2*2ax+BT5.0 vPro PCIE M.2 1216 Module (CNVi)
Connector: Main, Aux/GNSS, GNSS	ANT1:AUX WiFi + BT; ANT2: Main WiFi
Antenna Diversity	Supported
MIMO	Supported
GNSS Bian	N/A
Radio ON/OFF Control	Supported
Connector interface	CNVi

Operating Temperature (Adapter Shield)	0c to +80c
Humidity Non-Operating	50%~90% Rh non condensing (at temperatures of 25c to 35c)
Operating Systems	Microsoft Windows 7*, Microsoft Windows 8.1*, Microsoft Windows 10*, Linux* (limited feature support), Android
Wi-Fi Alliance	Wi-Fi CERTIFIED* a/b/g/n/ac, WMM*, WMM-PS*, WPA*, WPA2*, WPS2*, Protected Management Frames, Wi-Fi Direct* for peer to peer device connections, Wi-Fi Miracast* as Source.
IEEE WLAN Standard	IEEE 802.11a/b/g/n/ac, 802.11d, 802.11e, 802.11h, 802.11i, 802.11w; 802.11r, 802.11k, 802.11v pending OS support; Fine Timing Measurement based on 802.11REVmc
Roaming	Support seamless roaming between access points
Bluetooth*	Dual Mode Bluetooth® 5.0, BLE
Authentication	WPA and WPA2, 802.1X (EAP-TLS, TTLS, PEAP, LEAP, EAP-FAST), EAP-SIM, EAP-AKA, EAP-AKA
Authentication Protocols	PAP, CHAP, TLS, MS-CHAP*, MS-CHAPv2
Encryption	64-bit and 128-bit WEP, 128-bit AES-CCMP
Regulatory	For a list of country approvals, please contact your local Intel representatives.
US Government	FIPS10, FISMA
Product Safety	UL,C-UL,CB (IEC 60950-1)

## Battery

Dimension	266.6 mm x 86.6 mm x 5.45 mm
Weight	240g
Type (Chemistry and Cell)	Li-ion Polymer
Voltage	11.52V
Battery Life	Max >14 hours battery life
Battery Capacity	Integrated 3-cell 57Wh battery
Charging Time	0% to 100% 0% to 80% Battery [Wh] 57 57 Battery Charging Time (in-operation) 2.18 hr 1.31 hr Battery Charging Time (off) 1.85 hr 0.93 hr
Operating Temperature Range	between 10°C (50°F) and 35°C (95°F)
Warranty	1 Year / 3 Year Available
Coin Cell Battery (Model)	CR2032

# SECTION IV: BIOS / Certifications / Standards /

## Environmental

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### BIOS Specifications

WMI Support	Yes, if it is BIOS Setup change by WMI.
ROM-Based Setup Utility (F1)	Yes
Bootblock Recovery	N/A
Replicated Setup	Yes, it supported with SRSETUP tool.
Boot Control	Yes, it means Boot order change.
Memory Change Alert	N/A
Thermal Alert	N/A
Asset Tag	Yes
System/Emergency ROM Flash Recovery with Video	N/A
Remote Wakeup/Remote Shutdown	Yes, if Remote wakeup is Wake on LAN from S4/S5.
Keyboard-less Operation	N/A
Per-port Control	Yes, if it is I/O port enable/disable by BIOS Setup.
Adaptive Cooling	Yes, if it is thermal & fan control.
Security	Yes, BIOS password / Hard disk password / Finger print
Intel(R) AMT (includes ASF 2.0)	Yes. If you select vPro model
Intel(R) TXT	Yes. If you select vPro model
Memory Modes	N/A

### EMC & Safety

EMC	Published, Certified Existing Reports EMC - Australia EMC - Belarus EMC - Canada EMC - China EMC - EU/EFTA EMC - Japan EMC - Kazakhstan EMC - New Zealand EMC - Russia EMC - South Korea EMC - Taiwan EMC - USA/Territories Not Applicable / Not Required EMC - Israel
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	<p>EMC – Moldova  EMC – Serbia  EMC – Turkey  EMC – Uzbekistan  EMC – Vietnam</p>
Safety	<p>To access the latest User Guide and Safety and Warranty Guide, go to: <a href="https://support.lenovo.com">https://support.lenovo.com</a>  Low Halogen Declaration of Conformance  TNOT-2017-0040  Section 9 – Low Halogen Scorecard  Izod Test – EPEAT Compliant  Homologation PCRB Compliant  In the following countries: Albania, Algeria, Andorra, Angola, Antigua and Barbuda, Argentina, Armenia, Aruba, Australia, Azerbaijan, Bahamas, Bahrain, Bangladesh, Barbados, Belarus, Belize, Benin, Bermuda, Bolivia, Botswana, Burkina Faso, Burundi, Cambodia, Cameroon, Canada, Cape Verde, Cayman Islands, Central African Republic, Chad, China, Colombia, Comoros, Congo, Costa Rica, Djibouti, Dominican Republic, Egypt, El Salvador, Eritrea, Ethiopia, EU/EFTA, Fiji, Gabon, Gambia, Georgia, Ghana, Grenada, Guatemala, Guinea, Haiti, Honduras, Hong Kong, India, Indonesia, Israel, Jamaica, Japan, Jordan, Kazakhstan, Kenya, Kuwait, Laos, Lebanon, Liberia, Macau, Madagascar, Malawi, Malaysia, Mali, Mauritania, Mauritius, Mexico, Moldova, Mongolia, Morocco, Mozambique, Namibia, Nepal, New Zealand, Nicaragua, Niger, Nigeria, Oman, Pakistan, Panama, Papua New Guinea, Paraguay, Peru, Philippines, Qatar, Russia, Saudi Arabia, Senegal, Serbia, Seychelles, Sierra Leone, Singapore, South Africa, South Korea, Sri Lanka, Swaziland, Taiwan, Tajikistan, Tanzania, Thailand, Togo, Tunisia, Turkey, Turkmenistan, Uganda, Ukraine, United Arab Emirates, Uruguay, USA/Territories, Uzbekistan, Venezuela, Vietnam, Zambia, Zimbabwe, Brazil – Inmetro 170 Govt Bids, Guinea-Bissau, Lesotho</p>

## Environmentals

Energy Star	<p>ENERGY STAR® Version 8.0  For more information about ENERGY STAR, go to: <a href="https://www.energystar.gov">https://www.energystar.gov</a></p>
EPEAT	EPEAT Declaration of Conformance For Machine Types: 20S4, 20S5
IT ECO declaration	<p>The latest environmental information about Lenovo products is available at: <a href="https://www.lenovo.com/ecodeclaration">https://www.lenovo.com/ecodeclaration</a></p>
Hazardous Substances	<p>The latest environmental information about Lenovo products is available at: <a href="https://www.lenovo.com/ecodeclaration">https://www.lenovo.com/ecodeclaration</a>  European Union RoHS  This Lenovo product, with included parts (cables, cords, and so on) meets the requirements of Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment (“RoHS recast” or “RoHS 2”).  For more information about Lenovo worldwide compliance on RoHS, go to: <a href="https://www.lenovo.com/rohs-communication">https://www.lenovo.com/rohs-communication</a></p>

## Manageability

Industry Standard Specifications	<p>This product meets the following industry standard specifications for manageability functionality:  Intel LAN with AMT</p>
Remote Manageability	Lenovo ThinkManagement Console

Software Solutions	Microsoft System Center Configuration Manager LANDesk Management Suite for ThinkVantage Technologies ( <a href="http://www.landesk.com/lenovo">www.landesk.com/lenovo</a> )
System Software Manager	Lenovo ThinkPad supports software management tools from the Lenovo Vantage System Update suite: System Update Update Retriever
Service, Support, and Warranty	On-site Warranty and Service: Three-years, limited warranty and service offering delivers on-site, next business-day service for parts and labor and includes free telephone support 8am to 5pm. Global coverage ensures that any product purchased in one country and transferred to another, non-restricted country will remain fully covered under the original warranty and service offering.