

Apogee 1+ Recommended Spare Parts List

Part Number	Description	AVAILABILITY	REPAIRABLE?
2171785	EDU	Not currently available	yes
2171935V02	Torch Controller	available	yes
2172317	Battery SRAM Mem Card	currently in stock	no
2172318	Memory Card 256K SRAM	available	no
2172373	Module Automation Other than Robot	available	yes
2172439	MKS 146 AAA MN	Not currently available	no
4085869	Hand Held Terminal (Pendant)	available	no
2172519-026	MCU	Not currently available	yes
2172589	Gas Electronics System 8115 Echelon HZ (8100 Gas Electronics)	available	yes
2172630	C/A - W78N Z Axis Gore tube; Network Cable	unknown	no
2172632	C/A W29N - Network Cable	unknown	no
2172703	C/A MR to Echelon Converter for 7640 Controller	unknown	no
2172717	I/O Module Transfer Rack	available	no
2172874	MCU Power Supply	currently in stock	no
3163331V01	PCA Utility Board	available	yes
3163331V02	Utility Lite 7355	available	yes
2173500V01	RAM/ROM board	available	yes
3163451	PCA Relay Octal - Rib Board	currently in stock	yes
3163541	Recipe Module	currently in stock	no
3163551V02	Gas Electronics VCVD Interface Board	Not currently available	yes
3163671	Brushless Amp W/O dynamic brake E axis ONLY (to convert to 3163672 add dynamic brake without modifications to board)	Not currently available	no
3163672	Brushless Amp W/ dynamic brake CZ and Z ONLY	Not currently available	no
3163741	Dynamic Brake for Z-axis Brushless Amp	currently in stock	no
3MAD004253	Motor - Stepper 5 Phase w/Gear - V Axis diagram, the motor p/n (Replaced part #DCX02134)	Not currently available	no
4033766	Teflon Nut - ATM EXH Interconnect (FURON P/N 1MP16N)	available	no
4037058	Thermocouple assy, TC 'J' type, 17mm, w/leads, for rotators	available	yes
4037340	Heater Core Poly (Old and New)	available	no
4037360	Profile T/C 5Z "S" POLY Rev 0	available	yes
4037440	Heater Core - New Style (1998) TEOS, Nitride, Atmospheric	available	no
4037600	Tube PRCS QTZ 200MM ATM - ISPH - Injector size 10/6	available	no
4038207	Dual solenoid valve 24vdc by Koganei used in load lock	currently in stock	no
4038253	Cap SiC for Atmospheric Furnace	available	no
4038260	O-Ring Rotation Port - G50	available	no
4038267	Vexta Driver UDX 5107N (V, VR, R, CXL, CXR,)	Not currently available	no
4038280	Heater Core Atmospheric/Teos/Nitride Process (6 Inch)	available	no
4038776	Photo Sensor Wafer Detector	available	no
4038777	Photo Sensor Amp - Wafer Detector	available	no
4038824	Insulator Quartz Collar 776mm ATMOS 200mm	available	no
4038825	Insulator Quartz Collar 60mm Atmospheric Plug	available	no
4075022	Torch T/C Assembly, Type K	currently in stock	yes
4075041	UV Detector Assembly for Torch	currently in stock	no
4075045	Ignition Lamp, 500W, EHD	currently in stock	no
4075049	Torch module control interface (PCB)	currently in stock	no
4080458	Vexta Driver - Stepper Motor "OF" Axis UDX 5105	Not currently available	no
4080739	Switch Photo Microsensor 5mm Slot - 673	Not currently available	no
4080748	Air Fitting - VLV FLOW CONT AIR .12 NPT for narrow/wide cylinder	available	no
4080775	Air Cylinder Side Lock - CYL AIR 12 X 10	available	no
4080776	Air Cylinder H-end Lock - CYL AIR 16 X 50	available	no
4080777	Air Fitting with Throttle Adjustment - H-end Lock, notch finder 5/32 "elbow"	available	no
4080839	Switch, limit, E / Z axis, 125V / 5A	currently in stock	no
4080840	Gearbox "CZ" Axis	Not currently available	no
4080853	CXL and CXR Bearing Slide	Not currently available	no
4080864	CXL and CXR Mounting Block	Not currently available	no
4080876	Orange Drive Belt - CXL and CXR axis	currently in stock	no
4080883	Switch Photo Microsensor 5mm Slot - 672	Not currently available	no
4080918	Motor Servo 200 Watt	Not currently available	no

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4080919	Motor Stepper 5 Phase w/Gear 100:1	Not currently available	no
4080929	C/A W56L CXL - Limit Switches - interchangeable with W60L 4083057 (CXR)	Not currently available	no
4080930	C/A W57L Cassette present CXL - interchangeable with W63L 4083056 (CXR)	Not currently available	no
4081140	Motor Servo 100 Watt E, CY, SS - Japanese connections	Not currently available	no
4081157	Coupling Backlashless for "SS" Axis 8/8 Bore	available	no
4081301	Gearbox "Z" Axis New # 4083851	Not currently available	no
4081343	Coupling Backlashless for "Z" Axis 14/15 Bore	currently in stock	no
4081373	C/A Hall Effect Sensor Rear Shutter	Not currently available	no
4081397	Vexta Motor 5-Phase 100/1 gear ratio R-axis	OBSOLETE	POSSIBLY
4081404	Gasket Tweezer Teflon	available	no
4081405	Gasket Tweezer Silicon	available	no
4081803	Shutter Bracket with Set Screws (Tube)	Not currently available	no
4081809	Pins, teflon for Shutter Cushion (Tube)	available	no
4081810	Shutter, ATM	available	YES
4081812	Teflon - O-Ring Holder - Tube Shutter	available	no
4083006	Ring Support Process Tube Atmospheric	available	yes
4083008	Locator Pins Teflon Pedestal Atmospheric	available	no
4083010	Teflon Cushion - Tube, lower, Atmospheric	available	no
4083013	Teflon Cushion - Tube, upper, Atmospheric	available	no
4083025	Ceramic Disks for Heater Core	currently in stock	no
4083031	Centering Ring Teflon ATM Inlet/Exhaust	currently in stock	no
4083054	C/A W83R,ribbon, between vextas, and robot motors (V,VR)	Not currently available	no
4083056	C/A W63L Cassette present CXR - interchangeable with W57L 4080930 (CXL)	Not currently available	no
4083057	C/A W60L CXR - Limit Switches - interchangeable with W56L 4080929 (CXL)	Not currently available	no
4083090	C/A W64L CXL/CXR loader CZ Axis gore Tube cable for motor, encoder and sensors.	Not currently available	no
4083140	Robot Kit NSK M-U046	Not currently available	no
4083143	Driver Rot Axis NSK Y - ESB014CFI	OBSOLETE	no
4083144	Driver Liner Axis NSK X - ESLZ10CFI	OBSOLETE	no
4083222	CVD Upper Cushion - Teflon	available	no
4083223	Furnace Seal Ring (CVD Lower Teflon Cushion)	available	no
4083240	C/A W17E J511 V/VR Motor - Z Axis gore Tube	Not currently available	no
4083241	C/A W18R, for robot axis and limits (V, VR)	Not currently available	no
4083243	C/A W54E V/VR HOME LIM+ - Z Axis gore Tube	Not currently available	no
4083246	Spring - Furnace Port	available	no
4083254	Grease Fomblin - Tube	available	no
4083316	Shutter Tube CVD with arm (Also includes the teflon buttons) complete	available	POSSIBLY
4083339	Robot head - 5UDE020753 with out the SP CONN	currently in stock	no
4083396	Cylinder, Air, Rodless - for moving the tube shutter front and back	Not currently available	no
4083398	Switch Hall Effect for I/O Port	Not currently available	no
4083442	Photo Sensor Assembly Amp - RH Wafer Detector	available	no
4083443	Photo Sensor Assembly Amp - LH Wafer Detector	available	no
4083450	Bar that holds the reflective tape - 150MM	available	no
4083452	Plate Support - plate that connects the platform w/bar - 150MM	available	no
4083455	Cassette Platform - 150MM	available	no
4083493	Coupling Backlashless for "E" Axis 14/10 Bore	available	no
4083512	Reflective tape - 150MM	available	no
4083514	Rotation Boat Mech 150-200 MM	Not currently available	no
4083544	Gearbox "Z" Axis - new pitch angle - Joe Saunders	Not currently available	no
4083565	Air Fitting with Throttle Adjustment, Inline - 6mm Needle valve	Not currently available	no
4083566	Air Fitting with Throttle Adjustment, Inline - 5/32" Needle valve	Not currently available	no
4083582	Plate - Robot - Y axis Stop	Not currently available	no
4083636	Block Front H-end Block	Not currently available	no
4083778	Air Fitting Quick Disconnect Elbow 90 - Tube Shutter	Not currently available	no
4083779	Shutter Needle Valve (Tube)	available	no
4083786	Solenoid Block for Stager Air w/5 Solenoids and connectors	Not currently available	no
4083852	Gearbox E Axis - New part number as of 09/01/98 - old part number 4081302	Not currently available	no

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4083860	CY Axis Gearbox and Motor Drive Assembly	Not currently available	no
4083953	Vacuum Filter In-line FLTR INLINE VAC	available	no
4083960	Sensor, Vacuum - Robot Fingers	Not currently available	no
4083975	Shutter Springs (Tube)	Not currently available	no
4084020	Motor Servo 100 Watt E, CY, SS - domestic connections	Not currently available	no
4084021	Motor Servo 200 Watt CZ, Z	currently in stock	no
4084528	C/A X axis cable (motor & encoder) - X axis gore tube	Not currently available	no
4084881	Screw SST Captive M4 Scavenger Plates - CVD - ECO 51737	available	no
4084904	Mounting panel for sixth sense controller	available	no
5070003	Thumbscrew CVD Support Ring	available	no
5070098	Teflon Cushion - Interconnect Clamp	available	no
7501146	Power Supply 15V 1.8 AMP	currently in stock	no
7719628	Quick Disconnect H2O - Female - .25 SWG	available	no
8012873	Quick Disconnect H2O - Female - Atmos. Flange .38 SWG	available	no
8015167	Quick Disconnect H2O - Male - Atmos. Flange .38 SWG	available	no
8015998	Quick Disconnect H2O - Male - .50 FPT for the cold Trap	available	no
8015999	Quick Disconnect H2O - Female - .50 FPT for the cold trap	available	no
8017636	Front Door Latch	available	no
8017983	T/C Spike "S" APOGEE	available	no
8196157	Power Supply 5V, +/- 12V	currently in stock	no
9002158	Quick Disconnect H2O - Male - .25 SWG	available	no
9012760	Switch Photo Microsensor 5mm Slot - 670	currently in stock	no
9014149	C/A Gas Electronics to MFC - 12 foot	available	no
9015063	Switch Photo Microsensor 5mm Slot - 671	available	no
9015650	Connector, TC male and female, "J" type	available	no
9017271	Terminal Ring .25 04GA E/T (heater core lug)	available	no
9017606	ICCI Flow Switch	currently in stock	no
9024287	T/C Assy "J" (Flange)	available	no
9024466	Power Supply Triple +/- 15V +24V	currently in stock	no
9025087	C/A Network - Gas Electronics	available	no
2173097	Temperature Module 7640	currently in stock	yes
9025980	C/A Heater Room OT	available	no
9027090	Cap Close Relay	currently in stock	no
9027439	C/A Robot I/O W79N New Design June 1998	available	no
9027457	C/A Robot Extension Cable (W55E) - replaces 4083244	available	no
9027646	C/A stager right hand side H-end and I/O port- does not include lower bracket	available	no
9027647	C/A stager left hand side H-end and I/O port- does not include lower bracket	available	no
9028305	C/A W82R X limit/ VR for Robot replaces both P/N's 9027456 and 9025945	available	no
9040088	Solenoid 2 way auto switch 24 VDC	available	no
9042726	T/C Spike Overtemp Type "S"	available	no
9042727	T/C Spike Undertemp Type "S"	available	no
9043618	Flow switch 3 GPM	available	no
9043756	DVP for Schumacher Bubbler (New Type Valve)	currently in stock	no
9045038	Flow Switch - H2O	available	no
9025821	C/A W28R Robot I/O module to vac sense and vac solenoids	available	no
D3K24358	Robot Arm for finger #5.	Not currently available	no
D4CK24354	Chuck Arm #1.	Not currently available	no
D4CK24355	Chuck Arm #2	Not currently available	no
D4CK24356	Chuck Arm #3	Not currently available	no
D4CK24357	Chuck Arm #4	Not currently available	no
D4CK24358	Chuck Arm #5	Not currently available	no
D4CK33638	Chuck for #1 Finger	Not currently available	no
D4CK33639	Chuck for #2 Finger	Not currently available	no
D4CK33640	Chuck for #3 Finger	Not currently available	no
D4CK33641	Chuck for #4 Finger	Not currently available	no
D4CK33642	Chuck for #5 Finger	Not currently available	no

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Part Number	Description	AVAILABILITY	REPAIRABLE?
D4CK38165	Top plate for Finger Chucks	Not currently available	no
D4CX03050	Robot Vacuum Solenoid Block with five solenoids on it.	Not currently available	no
D4EE55335	C/A W17 - NSK X-axis Motor / Encoder to gore tube	Not currently available	no
D4EE55338	C/A W89E Y-axis Motor / Encoder - Z axis gore tube	Not currently available	no
D4EX03134	C/A W90E X axis Motor / Encoder - Z axis gore tube	Not currently available	no
D4EX04135	C/A W18 - NSK Y-axis Motor / Encoder to gore tube	Not currently available	no
PS2171003V01	PCA CPU Board	available	yes
PS2172500V01	PCA Ram/Rom Board	available	yes
PS3161525V21	Analog I/O Microprocessor Gas Electronics	currently in stock	yes
PS3161525V24	Controller Scanner - Gas Electronics	currently in stock	yes
PS3161525V27	Gas Electronics Analog I/O HZ 7900/8100	currently in stock	yes
PS3161525V31	Gas Electronics Analog I/O HZ 8115 TOP	currently in stock	yes
PS3161525V32	Gas Electronics	currently in stock	yes
PS3161525V33	Gas Electronics Analog I/O HZ 79/8100 ECH BOTTOM	currently in stock	yes
PS3161722V01	Gas Electronics 8115 Solenoid Driver Bd 2	currently in stock	yes
PS3161722V02	Gas Electronics 8115 Solenoid Driver Bd 4	currently in stock	yes
PS3162154V120	Gas Electronics 7900 Logic Processor II OPJM	currently in stock	yes
PS3162154V122	Gas Electronics 7900 Logic Processor II BO BI A2	currently in stock	yes
PS3162154V96	Gas Electronics 7900 Logic Processor II Post Purge	currently in stock	yes
PS3163491V01	PCA Memory Card Drive (Holder)	currently in stock	yes
PS3163511V01	PCA Servo Board 1 CXL, CXR, CZ	currently in stock	yes
PS3163511V02	PCA Servo Board 2 CY, LOF, LOR	currently in stock	yes
PS3163511V03	PCA Servo Board 3 X, Y, Z	currently in stock	yes
PS3163511V04	PCA Servo Board 4 - V, VR	currently in stock	yes
PS3163511V05	PCA Servo Board 5 SS, E, R	currently in stock	yes
PS4085869	Kit Pendant Term Brkt & Cable (replacement for 2172507)**see 4085869**	available	no