OpenStage PCBs can be manufactured relatively cheaply by SeeedStudio or OSH Park. Seeed has a minimum order of 5 units and OSH a minimum of 3. Seeed works out slightly cheaper in absolute terms and much cheaper per board. Listed price is roughly the cost for one OSH board. We may have boards in					TOTAL	296.492	2			
stock or may be able to split costs wit	price is roughly the cost for one OSH board. We may hav th you. If not, you're looking at around \$120 to \$170 for th	e boards in ne minimum								
bulk purchase.										
Description	Purpose	Quantity	Price Each (USD)	Sub-Tota	l Supplier	Part ID				
Custom OpenStage PCB*	Main board	1	50	50		Seeedstudio or OSH Park		In addition, you will need a DCLI that	tio ovitable for driv	ina vara madara 14
CUI V7809-1000 DC/DC Regulat	Produce 9V 1A DC	1	7.81	7.81	Digi-Key	102-1717-ND		In addition, you will need a PSU that should be between 11V to 30V. Some		
10uF 16V Cap	Filter for regulator	1	0.48		Digi-Key	587-1376-1-ND		Name & specs	Supplier	Part ID
10uF 50V Cap	Filter for regulator	1	0.94	0.94	Digi-Key	587-3167-1-ND		Mean Well 24V 4A. Will need jack. Abou	t \$60 Mouser	709-CLG100-2
								CUI Inc. 24V 2.7A. About \$17	Digikey	T1121-P5P-NI
5k Trim pot	LCD contrast	1	0.98	0.98	Digi-Key	3362U-502LF-ND				
Female DB9 connector	Motor connections	2			Digi-Key	609-1485-ND				
Male DB9	PC serial port connection	1	2.87		Digi-Key	609-1479-ND				
Piezo buzzer	Audio indicator	1			Digikey	445-2525-1-ND				
ADM232 RS232 to Tx/Rx	Convert TTL <-> RS232	1			Digi-Key	ADM232AANZ-ND				
0.1 uF 50 V axial caps	Convert TTL <-> RS232	5			Digi-Key	399-4454-1-ND				
Board-mount BNC connector	For *optional* debugging info (pulse waveforms)	4			Digi-Key	A32263-ND				
Switch	Power switch	1	-		Digi-Key	CKN5001-ND				
Power entry jack (24V 5A)	Input power to board	1			Digi-Key	CP-002AH-ND				
0.5" M/F stand-off	LCD support post	4			Digi-Key	8401K-ND				
male 16 pos strip header	To connect PCBs to main board	10	****		Digi-Key	609-3287-ND				
female 1x16 strip header	LCD connector	1			Digi-Key	S7014-ND				
female 1x6 strip header	USB host shield	2			Digi-Key	S7039-ND				
female 1x8 strip header	USB host shield	2			Digi-Key	S7041-ND				
female 1x2 strip header	Quadstepper power input	1			Digi-Key	S7035-ND				
•		10	***		Digi-Key Digi-Key	S7036-ND				
female 1x3 strip header female 2x18 strip header	Quadstepper motor outputs (to be cut)	10				S7112-ND				
•	Quadstepper logic inputs	2			Digi-Key					
male 2x18 strip header	Quadstepper & Mega logic connections	1			Digi-Key	S2021E-09-ND				
female 2x3 strip header	Mega ICSP		****		Digi-Key	S7106-ND	V		h I d d i	
Jumper	Bypass R1 to LCD if it's not needed	1	***		Digi-Key	3M9580-ND	You could also	o skip this and short the connections wit	n a soldered wire	
20k resistor	pull-down resistors for button	3			Digi-Key	RMCF1206JT20K0CT-ND				
Indicator led	Indicate motor activity and serial port activity	6			Digi-Key	C5SMF-RJS-CT0W0BB2CT-ND				_
2.74 k ohm resistors	Current limiting resistors for LEDs (dim)	8			Digi-Key	311-2.74KFRCT-ND	Choose this	There will be spare resistors (they're	easy to lose)	_
300 ohm resistors	Current limiting resistors for LEDs (bright)	8			Digi-Key	RMCF1206JT300RCT-ND	Or this			
300 ohm resistors	Current limiting resistors for debugging connection	10			Digi-Key	RMCF1206JT300RCT-ND				
N-channel power MOSFET	reverse polarity protection	1			Digi-Key	NP90N06VLG-E1-AYCT-ND				
4-40 hex nut	to secure LCD stand off to main board	4			Sparkfun	PRT-10232				
4-40 1/4" screws (10 pack)	to secure LCD to stand off	1			Sparkfun	PRT-10453				
Quadstepper	Stepper motor driver board	1			Sparkfun	ROB-10507				
Arduino Mega 2560	Microcontroller	1			Sparkfun	DEV-11061				
USB Host Shield	Interface with PS3 gamepad	1			Sparkfun	DEV-09947				
20x4 LCD character display	Reports stage position, etc	1	-		Sparkfun	LCD-00256				
Pushbutton	*OPTIONAL* reserved for future use	2	0.5		Sparkfun	COM-9190				
USB cable	Connect PS3 controller to USB host shield	1			Sparkfun	CAB-11301				
PS3 Game pad	For stand-alone stage control	1	-		Amazon	B0015AARJI				
Wago 233-0506 6 pos term. block	For *optional* debugging info (direction, and pin1	1	3.16		Newark	79K2052				
				0						
M/M 10ft DB9	Cut in half, providing 2 5ft cables to drive 4 motor	1	9.99	9.99	Cables2Go	#9449				
F/F 10ft DB9	PC serial port connection	1	9.99	9.99	Cables2Go	#2694				
				0						