Main parts

PN2
PCB boards
LIGO
D1100326-v2

PN3
Front panel
LIGO
D1100324-v1

PN11
Enclosure
Hamilton Metalcraft
D1101509-v1

PN12
Rear panel
LIGO
D1100325-v1

HV Driver mounting

H42 Standoff, #4, 5/16"
H43 Standoff, #4, 5/16"
H44 Standoff, #4, 5/16"
H45 Standoff, #4, 5/16"

H46 Standoff, #4, 5/16"
H47 Standoff, #4, 5/16"
H48 Standoff, #4, 5/16"
H49 Standoff, #4, 5/16"
McMaster-Carr
93620A707

Front panel attachment

H1   Standoff, M3, 12mm
H2   Standoff, M3, 12mm
H3   Standoff, M3, 12mm
Mouser
728-FM1259-3005-SS

H12 Screw M3, 8mm
H13 Screw M3, 8mm
H14 Screw M3, 8mm
McMaster-Carr
90317A115

H27 Screw M3, 6mm, flat
H28 Screw M3, 6mm, flat
H29 Screw M3, 6mm, flat
McMaster-Carr
91420A116

Rear panel fan

F1
Fan 60x25mm, 24VDC
Mouser
5912-614NL

PN1   2-pin plug
Digi-Key
281-1054-ND

H15 Screw 6-32, 1.25"
H16 Screw 6-32, 1.25"
H17 Screw 6-32, 1.25"
H18 Screw 6-32, 1.25"
McMaster-Carr
90273A155

H30   Lock nut, 6-32
H31   Lock nut, 6-32
H32   Lock nut, 6-32
H33   Lock nut, 6-32
McMaster-Carr
90631A007

Rear panel power entry

PN4
D-sub shell, 3W3C
Digi-Key
626-1098-ND

PN5
Terminal, QC, AWG 16
PN6
Terminal, QC, AWG 16
Digi-Key
A27824CT-ND
PN7   Thermal breaker
Allied
677-0189

PN13
Power pin, AWG 16-20
PN14
Power pin, AWG 16-20
Digi-Key
626-1140-ND

PN15
Terminal, QC, AWG 16
PN16
Terminal, QC, AWG 16

PN17
Ring term., #10, AWG16
Digi-Key
A27243-ND

PN20
Power socket, AWG 16-20
Digi-Key
626-1144-ND

PN21   Jack screw kit
PN22   Jack screw kit
Digi-Key
626-1256-ND

PN23   2-pin plug
Digi-Key
281-1243-ND
PN24   Terminal turret
Mouser
534-1587-1

LED lens caps/D-subs

L1   LED lens cap
L2   LED lens cap
L3   LED lens cap
L4   LED lens cap
L5   LED lens cap
L6   LED lens cap
L7   LED lens cap
L8   LED lens cap
L9   LED lens cap
L10 LED lens cap
L11 LED lens cap
L12 LED lens cap
L13 LED lens cap

L14 LED lens cap
L15 LED lens cap
L16 LED lens cap
L17 LED lens cap
L18 LED lens cap
L19 LED lens cap
L20 LED lens cap
L21 LED lens cap
L22 LED lens cap
L23 LED lens cap
L24 LED lens cap
L25 LED lens cap
L26 LED lens cap
Mouser
534-8659

PN27   Jack screw
PN28   Jack screw
PN29   Jack screw
PN30   Jack screw

PN31   Jack screw
PN32   Jack screw
PN33   Jack screw
PN34   Jack screw
Digi-Key
5207953-3-ND

Main and power board mounting

H4   Screw 6-32, 3/4"
H5   Screw 6-32, 3/4"
H6   Screw 6-32, 3/4"
H7   Screw 6-32, 3/4"
H8   Screw 6-32, 3/4"
McMaster-Carr
90403A151
H9   Heat sink
H10   Heat sink
Mouser
532-373324M32G
H11   Thermal pad
Digi-Key
BER164-ND

H19 Screw 6-32, 3/8"
H20 Screw 6-32, 3/8"
H21 Screw 6-32, 3/8"
H22 Screw 6-32, 3/8"
H23 Screw 6-32, 3/8"
H24 Screw 6-32, 3/8"
H25 Screw 6-32, 3/8"
H26 Screw 6-32, 3/8"
McMaster-Carr
90403A146

H34 Washer #6, 9/16"
H35 Washer #6, 9/16"
H36 Washer #6, 9/16"
H37 Washer #6, 9/16"
H38 Washer #6, 9/16"
H39 Washer #6, 9/16"
H40 Washer #6, 9/16"
H41 Washer #6, 9/16"
McMaster-Carr
91525A104

Cables

PN8
DB25 cable m-f
Digi-Key
M7NOK-2506J-ND
PN9
IDC Header, 26-pin
PN10
Header, 26-pin
Digi-Key
MKC26A-ND

PN18
Wire, 16AWG, black
Newark
87K2776

PN19   4-pin plug
Digi-Key
281-1263-ND

PN25
Wire, 16AWG, red
Newark
87K6286

PN26   4-pin plug
Digi-Key
281-1254-ND

Title	**Picomotor Controller**		
Size	Number		Revision
A	D1100323		2
Date:	10/4/2011	Sheet 1 of 2	
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Rack brackets (optional)

H50 Handle, 3.0"	M1 #6-32 1/4" flat	M7 #6-32 3/8" flat
H51 Handle, 3.0"	M2 #6-32 1/4" flat	M8 #6-32 3/8" flat
Mouser 534-9109	M3 #6-32 1/4" flat	M9 #6-32 3/8" flat
H52 Ferrule	M4 #6-32 1/4" flat	M10 #6-32 3/8" flat
H53 Ferrule	M5 #6-32 1/4" flat	McMaster-Carr 91099A215
H54 Ferrule	M6 #6-32 1/4" flat	
H55 Ferrule	McMaster-Carr 91099A205	
Mouser 534-9121		

Rubber feet (optional)

H56 Rubber feet	H60 #4 washer	H64 #4 screw, 1/4"
H57 Rubber feet	H61 #4 washer	H65 #4 screw, 1/4"
H58 Rubber feet	H62 #4 washer	H66 #4 screw, 1/4"
H59 Rubber feet	H63 #4 washer	H67 #4 screw, 1/4"
Digi-Key 720K-ND	McMaster-Carr 90945A710	McMaster-Carr 90272A106

Enclosure hardware

E1 #4-40 3/16" flat	E9 #4-40 3/16" flat	E17 #4-40 3/16" flat
E2 #4-40 3/16" flat	E10 #4-40 3/16" flat	E18 #4-40 3/16" flat
E3 #4-40 3/16" flat	E11 #4-40 3/16" flat	E19 #4-40 3/16" flat
E4 #4-40 3/16" flat	E12 #4-40 3/16" flat	E20 #4-40 3/16" flat
E5 #4-40 3/16" flat	E13 #4-40 3/16" flat	E21 #4-40 3/16" flat
E6 #4-40 3/16" flat	E14 #4-40 3/16" flat	E22 #4-40 3/16" flat
E7 #4-40 3/16" flat	E15 #4-40 3/16" flat	E23 #4-40 3/16" flat
E8 #4-40 3/16" flat	E16 #4-40 3/16" flat	E24 #4-40 3/16" flat
		McMaster-Carr 91771A111

Attach front panel PCB to front panel with 12mm stand-offs; use lens caps for LEDs.
Attach power boards to sides of enclosure;
    use thermal pads both on top and underneath the DC-DC converter;
    attach heatsink to top of power board.
Cut D-sub cable in half and attach IDC headers;
    mount all three D-sub connectors and breaker to rear panel.
Attach fan to rear panel blowing outwards.
Connect 24V and GND using hookup wires;
    solder into main board and attach 5.08mm plug.
Mount main board into enclosure, attach panels, and connect headers.

Title	**Picomotor Controller**		
Size A	Number D1100323		Revision 2
Date: 10/4/2011		Sheet 2 of 2	
File: C:\Users\..\PicoMotorController2.SchDoc		Drawn By: Daniel Sigg	