**ROBOTS THAT RUN**

courtesy of marc raibert,
mit, cambridge, ma

**WALKERS**

courtesy of marc raibert and
the mit press, mit, cambridge, ma;
charles klein, ohio state university, columbus oh;
and odetics, inc., anaheim, ca
HAROLD COHEN TALKS TO RAY KURZWEIL ABOUT

AARON

VIDEO COURTESY OF
THE KURZWEIL FOUNDATION, WALTHAM, MA

COMPUTER UNDERSTANDING OF EXPRESSION IN

MUSICAL PERFORMANCE

VIDEO COURTESY OF
BARRY VERCOE, IRCAM, PARIS,
AND MEDIA LABORATORY, MIT, CAMBRIDGE, MA
SPEAK HERE
ROAM
PRESS TO MAKE THE ROBOT GUIDE ITSELF. IT WILL DETECT OBSTACLES AND DRAW A MAP.

JOYSTICK
PRESS TO CONTROL THE ROBOT YOURSELF WITH THE JOYSTICK. THE ROBOT WILL TRY TO AVOID OBSTACLES.

MOVE

SPIN
EXCERPTS FROM

BALLET ROBOTIQUE

PRODUCED BY BOB ROGERS AND COMPANY, INC.,
BURBANK, FOR GENERAL MOTORS.
DONATED BY GENERAL MOTORS RESEARCH
LABORATORY, WARREN, MICHIGAN
DEXTEROUS HANDS

EXCERPTS FROM "DISCOVER: THE WORLD OF SCIENCE"
COURTESY OF THE CHEDD ANGER PRODUCTION COMPANY,
WATERFORD, MA. STEVE JACOBSEN, UNIVERSITY OF UTAH,
AND KENNETH SALISBURY, MASSACHUSETTS INSTITUTE OF TECHNOLOGY.
3 CIRCLES

1. RADIUS 32\(\frac{5}{8}\)"

2. RADIUS 19\(\frac{1}{4}\)" - ARC 240° 6" HIGH TOP

3. RADIUS 12" - ARC 120° 3" HIGH TOP

BASE HEXAGON 32\(\frac{5}{8}\)

3" HIGH

Two Short Sides
17\(\frac{1}{10}\)

Addition to make side facing Plexiglass flush with front of panels

G" HIGH

3 sides normal

Left Side 16\(\frac{5}{16}\)
Right Side 16\(\frac{5}{16}\)

Plus it sticks out an extra 1\(\frac{1}{8}\)"
HAROLD COHEN TALKS TO RAY KURZWEIL ABOUT

AARON

VIDEO COURTESY OF: THE KURZWEIL FOUNDATION, WALTHAM, MA

COMPUTER UNDERSTANDING OF EXPRESSION IN

MUSICAL PERFORMANCE

VIDEO COURTESY OF: BARRY VERCOE, IRCAM, PARIS, AND MEDIA LABORATORY, MIT, CAMBRIDGE, MA

6.9.87

OLIVER,

I REALIZE THAT SOME OF THE TEXT HAS CHANGED, BUT THIS IS THE APPROACH WE ARE TAKING - DAVID
HAROLD COHEN TALKS TO RAY KURZWEIL ABOUT

AARON
VIDEO COURTESY OF: THE KURZWEIL FOUNDATION, WALTHAM, MA

COMPUTER UNDERSTANDING OF EXPRESSION IN

MUSICAL

PERFORMANCE
VIDEO COURTESY OF: BARRY VERCOE, IRCAM, PARIS, AND

MEDIA LABORATORY, MIT, CAMBRIDGE, MA

6.9.87

TOM -
THE FRONT PULS ARE
ALL 8" X 8". THE
PLACEMENT & DIA OF
HOLE WILL BE
DETERMINED TOMORROW

DAVID
Button panels for art, music, and gripper videos

Note: Gripper panel has only top button.

2 required
1 w/ one button
1 # w/ two buttons
WALKING ROBOTS

RUNNING ROBOTS

Video courtesy of: Marc Raibert, Massachusetts Institute of Technology, and MIT Press, Cambridge, MA.
Button panels for hopping robots & industrial robots

Note: hopping robots has two buttons

2 required
1 w/ one button
1 w/ two buttons
ROAM
PRESS TO MAKE THE ROBOT GUIDE ITSELF.
IT WILL DETECT OBSTACLES AND DRAW A MAP.

JOYSTICK
PRESS TO CONTROL THE ROBOT YOURSELF.

MOVE

TURN
FORGET

TEACH

GO

MAGNET

PRESS ANY BUTTON FOR INSTRUCTIONS

MOVE
Button panels for Fischer technique arms

- Bolt to keyboard tray from below to secure
- 3/4" plywood box paint exposed surfaces black
- Masonite - paint edges black
- Clear plexi photo stat
- Screw directly to angled box at 4 corners - paint screw heads black
- Add blocking to back of masonite as req'd to firmly mount joystick from behind
- Buttons to mount on masonite - holes in plexi to clear c.d. of button collars
- Z required
SPEAK
HERE
ADD BLOCKING TO BACK OF MASONITE AS REQ'D TO FIRMLY MOUNT MICROPHONE.

SCREW DIRECTLY TO ANGLED BOX AT 4 CORNERS - PAINT SCREW HEADS BLACK

MASONITE - PAINT EDGES BLACK
CLEAR FLEX! PHOTO SEAL

BOLT TO KEYBOARD TRAY FROM BELOW TO SECURE

MICROPHONE PANELS

3/4" PLYWOOD BOX PAINT EXPOSED SURFACES BLACK  3 REQUIRED
This Shipping Order must be legibly filled in, in ink, in moderate pencil, or in carbon, and retained by the Agent.

The property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned and destined as indicated below, which carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

From Boshco, Inc.

At 42 Manning Road, Billerica, Mass.

(Mail or street address of consignee—For purposes of notification only.)

Consignee and Destination

The Computer Museum

300 Congress St.

Boston, MA 02110

Attn: Tom Merrill

<table>
<thead>
<tr>
<th>NO.</th>
<th>DESCRIPTION OF ARTICLES, SPECIAL MARKS AND EXCEPTIONS</th>
<th>WEIGHT (SUBJECT TO CORR.)</th>
<th>CLASS OR RATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>New Delta Model #37223 6&quot; jointer, 3.5 HP, 1 phase.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>New Delta 14&quot; wood bandsaw, 7.5 HP, 1 phase.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>New Delta Unifence Model 34-897</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IX</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Additional information:

- This shipment is correctly described.
- The fibre boxes used for this shipment conform to the specifications set forth in the applicable regulations of the Department of Transportation.
- The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding $.
- If the shipper moves between two points by a carrier by water, the law requires that the bill of lading shall state whether it is "carrier's or shipper's weight."
- Shipper's permits in lieu of stamps not a part of bill of lading approved by the Massachusetts Commissioner of Commerce.
- The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding $.

Signature: __________ Title: __________

Date: 3/17 1987

Carriers No.

By Customer Pick Up

Route DELIVERING CARRIER

Car or Vehicle INITIALS & NO.

Boshco, Inc.

Shipper, Per

42 Manning Road, Billerica, Mass. 01821 - Tel (617) 669-1911

Permanent post office address of shipper

C.O.D. Shipment

C.O.D. Amt

Collection Fee

Total Charges

Charges Advanced: $__

Agent must detect and retain this Shipping Order and must sign the Original Bill of Lading.
## Boshco, Inc.

**NEW WOODWORKING MACHINERY**

42 MANNING ROAD — P. O. BOX 817
BILLERICA, MASS. 01821

---

### SOLD TO

The Computer Museum  
300 Congress Street  
Boston, MA 02110

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**DATE** March 17, 1987  
**INV. No.** 24358  
**Your Order No.** Verbal  
**Terms** Net Cash  
**Shipped Via** Your Truck 3/17/87

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<table>
<thead>
<tr>
<th>Item Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - New Delta #37-223 6&quot; jointer with 3/4 HP, 1 phase motor and all standard equipment.</td>
<td>$1,296.00</td>
</tr>
<tr>
<td>1 - New Delta 14&quot; wood band saw with 3/4 HP, 1 phase motor.</td>
<td>795.00</td>
</tr>
<tr>
<td>1 - New Delta Unifence #34-897</td>
<td>$425.70</td>
</tr>
</tbody>
</table>

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**Cash discount**  
$2,516.70 - 51.70 = $2,465.00

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**Tax Exempt Cert. #042-7\*017**

Title to property described above to remain in Seller's Name until fully paid for in cash.