



300 Clarence Gaines Street ♦ Paducah, KY 42003

PROJECT SPECIFICATIONS

REIDLAND FARLEY BASEBALL & SOFTBALL ASSOCIATION BALLPARK BATTING CAGES

1075 Said Road
Paducah, McCracken County, KY

Bid Date: Monday, April 29, 2024

Prepared By:



BFW Project No. 24025

TABLE OF CONTENTS

Section 00100 Advertisement for Bids
Section 00200 Instructions to Bidders
Section 00300 Bid Proposal
Section 00400 Owner/Contractor Agreement
Section 02000 Project Description
Section 02100 Batting Cages - Installation Instructions by Master Pitching Machine

SECTION 00100
ADVERTISEMENT FOR BIDS

RECEIPT OF PROPOSALS

The McCracken County Fiscal Court will receive sealed bids for the **Reidland Farley Baseball and Softball Association Ballpark Batting Cages** until **2:00 pm Central Time, on Monday, April 29, 2024**. Bids shall be submitted to the Judge Executive Office, c/o Steve Ervin, at 300 Clarence Gaines Street, Paducah, Kentucky, 42003. Bids will be publicly opened and read aloud thereafter at 2:05 pm in Meeting Room B in the McCracken County Courthouse.

PROJECT DESCRIPTION

The BASE BID for the project includes the installation of concrete slab batting cages at RFBSA Ballpark. The batting cages include two pitching machine lanes measuring 58' x 32' with a 5' sidewalk on two sides, total concrete slab dimension 63' x 37'. The batting cages shall have a 2-cage framing and netting system, including steel post framing, nylon netting, cage doors, rope and all miscellaneous accessories as manufactured by Master Pitching Machine, or approved equivalent. In addition, the cage shall include post framing foundations, concrete slabs, sumps, drains, lights, post extensions for mounting lights, additional chain link fence, electrical and controls. The floor of the cage shall have a sloped concrete floor for automatic ball return. Two (2) Master Pitching Machines (Iron Mike) Model MA-4 pitching machines, one (1) Master Pitching Machines Model E199 ball elevator, and two (2) coin box operators are provided by the owner and shall be installed by the contractor as part of this project. Complete set-up of the automatic ball feed system will require erection of pitching machine components, PVC ball feed tubing, and electrical work. A 5' concrete sidewalk will be located along the west and south side of the batting cages. Electric service must be run from an existing power pole and panel to the west of the site, approximately 270 feet to the east end of the cage, to an exterior panel and then to the pitching machines and coin operators.

The ALTERNATE BID 1 includes an additional concrete slab, measuring 60' x 32', with perimeter 6' tall chain link fence and two 3' wide gates for pitching lanes.

OBTAINING CONTRACT DOCUMENTS

Copies of Plans and Specifications may be obtained at the office of BFW Engineering & Testing, Inc., 500 South 17th Street, Paducah, KY 42003, (270) 443-1995. A digital copy of the plans and specifications will be provided upon request.

PREFERENCE TO KENTUCKY BIDDERS

In accordance with KRS 45A.365, prior to a contract being awarded, a resident bidder of the Commonwealth shall be given a preference against a non-resident bidder registered in any state that gives or requires a preference to bidders from that state. The preference shall be equal to the preference given or required by the state of the non-resident bidder.

DRUG FREE WORKPLACE

The McCracken County Fiscal Court has adopted a Substance Abuse Policy in accordance with the Drug-Free Workplace Act, in which drug and alcohol use and abuse in the workplace is prohibited. All contractors and subcontractors doing business with McCracken County shall adhere to a similar Drug-Free Workplace policy.

OWNER'S RIGHTS RESERVED

The McCracken County Fiscal Court reserves the right to reject any or all bids or waive any informality in the bidding process.

The McCracken County Fiscal Court is an Equal Opportunity Employer.

SECTION 00200
INSTRUCTIONS TO BIDDERS

1. BIDS

In order to receive consideration, make all bids in strict accordance with the following:

- A. All sealed bids and purchasing procedures shall be in accordance with the Kentucky Model Procurement Code (KRS Chapter 45A), and with the contract documents and specifications contained herein.
- B. Furnish One (1) detached copy of the required completed bid form for submittal as the contractor's proposal. Do not change the wording of the Bid Proposal. Unauthorized conditions, limitations, or provisions attached to the proposal shall be cause for rejection of the proposal.
- C. No telegraphic bid or telegraphic modifications of bid will be considered. No bids received after the time fixed for receiving bids will be considered. Late bids will be returned to the sender unopened.
- D. Each bid shall be addressed to the Owner and shall be delivered to the Owner at the address given in the Advertisement for Bids on or before the day and hour set for opening of bids. Each bid shall be enclosed in a sealed envelope bearing the title of the project, the name and address of the bidder, and the date and hour of the bid opening. It is the sole responsibility of the bidder to see that his bid is received on time.

2. BID SECURITY

No Bid security (bid bond or cashier's check) is required.

3. INTERPRETATIONS

If any person contemplating submitting a bid for construction of the work is in doubt as to the true meaning of any part of the plans or specifications or finds discrepancies in or omissions from any part of the plans or specifications, he may submit to the Owner, a written request for interpretation thereof not later than seven (7) days before the bid opening date. Interpretations or corrections of the plans or specifications will be made only by Addendum and will be mailed or delivered to each bidder of record.

4. EXAMINATION OF THE SITE AND PLANS AND SPECIFICATIONS

Bidder shall contact Steve Ervin at 270-444-4707 for a pre-bid site visit to examine the site and site conditions. Before submitting a bid, each bidder shall carefully examine the plans and specifications. Each bidder shall fully inform himself prior to bidding as to all existing conditions and limitation under which the work is to be performed, and he shall include in his bid a sum to cover all costs of all items necessary (including, but not limited to equipment, materials and labor) to complete the project as set forth in the plans and specifications. No allowance will be made to any bidder because of lack of such examination or knowledge. The submission of a bid will be construed as conclusive evidence that the bidder has made such examination.

SECTION 00200
INSTRUCTIONS TO BIDDERS

5. EVALUATION OF BIDS

The Owner will complete a full evaluation of all bids which conform to the requirements specified herein. Bids will be checked for conformance with all bid form requirements. In the case of unit price bid, if mathematical errors are discovered, the unit price indicated shall prevail and a new total will be computed. The new total will be used as a basis for evaluating the bid.

6. WITHDRAWAL OF BIDS

Any bidder may withdraw his bid, either personally or by written request, at any time prior to the scheduled time for opening bids. No bidder may withdraw his bid for a period of forty-five (45) days after the date set for opening thereof, and all bids shall be subject to acceptance by the Owner during this period.

7. AWARD OR REJECTION OF BIDS

The award of the contract will be based upon consideration of not only cost, but also experience with similar projects, staffing, equipment, present workload, and demonstrated ability to meet schedules. The Owner will give weight to each of the above selection criterion based upon the relative importance of each to this project. The Owner reserves the right to reject any or all bids or to disregard any minor irregularities in deciding to accept a bid.

8. PROOF OF COMPETENCY OF BIDDER

Any bidder may be required to furnish evidence satisfactory to the Owner that he has sufficient means and experience in the types of work called for to assure completion of the Contract in a satisfactory manner. The bidder must perform a minimum of fifty (50) percent of the work.

9. CONFLICTS, GRATUITIES AND KICKBACKS

The Owner adheres to the provision of KRS 45A.455 relative to conflicts of interest, gratuities, kickbacks, and use of confidential information in all bid offerings. During the bid process, Bidders shall not contact any employee of the Owner in reference to this Bid, with the exception of the Owner's designee(s). Failure to abide by this provision may serve as grounds for disqualification for award of this contract to Bidder.

10. PREFERENCE TO KENTUCKY BIDDERS

In accordance with KRS 45A.365, prior to a contract being awarded, a resident bidder of the Commonwealth shall be given a preference against a non-resident bidder registered in any state that gives or requires a preference to bidders from that state. The preference shall be equal to the preference given or required by the state of the non-resident bidder. **The Bidder shall indicate the state of residence on the Bid Proposal. The non-resident bidder shall indicate also if any preference is given by the Bidder's state.** The determination of state residency of the non-resident Bidder, according to Kentucky Administrative Regulations:

SECTION 00200
INSTRUCTIONS TO BIDDERS

- The state of residency shall be the principal office as identified in the Bidder's Certificate of Authority to transact business in Kentucky as filed with the Commonwealth of Kentucky, Secretary of State.
- If the Bidder is not required to obtain a Certificate of Authority (by the Secretary of State) to transact business in Kentucky, the state of Residency shall be the mailing address provided in the Bid Proposal.

11. EQUAL EMPLOYMENT OPPORTUNITY

The Contractor shall ensure that employees and applicants for employment are not discriminated against because of their race, religion, color, sex, national origin, age or disability.

12. DRUG FREE WORKPLACE

The McCracken County Fiscal Court has adopted a Substance Abuse Policy in with the Drug-Free Workplace Act, in which drug and alcohol use and abuse in the workplace is prohibited. All contractors and subcontractors doing business with McCracken County shall adhere to a similar Drug-Free Workplace policy.

13. HEALTH AND SAFETY STANDARDS IN CONSTRUCTION CONTRACTS

It is a condition of this Contract, and shall be made a condition of each subcontract entered into pursuant to Contract, that the Contractor and any Subcontractor shall not require any laborer or mechanic employed in performance of the contract work in surroundings or under working conditions which are unsatisfactory, hazardous, or dangerous to his health or safety, as determined under Construction Safety and Health Standards Title 29, CFR Part 1518, 36FR 7340, promulgated by the U.S. Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act, 82 Stat. 96. Additionally, the Contractor shall comply with all OSHA requirements in accordance with 23 CFR 634 and KRS 338.

14. REQUIRED SUBMITTALS

Prior to commencing Work, the successful BIDDER shall furnish to the OWNER a Certificate of Insurance of \$1,000,000 for general liability. BIDDER shall also provide a valid McCracken County business license.

SECTION 00300
BID PROPOSAL

RFBSA BALLPARK BATTING CAGES

Proposal of _____, (hereinafter called BIDDER), organized and existing under the laws of _____ (state), and doing business as _____*, as applicable to the McCracken County Fiscal Court, (hereinafter called OWNER.); *Insert "A Corporation", "A Partnership" or "An Individual"

In submitting this BID, it is understood that the right is reserved by the OWNER to reject any and all BIDS. If notice of the acceptance of this bid is given to the BIDDER within forty-five (45) days after the time of receipt of bids, the BIDDER agrees to execute and deliver a contract in the prescribed form.

Prior to commencing Work, the successful BIDDER shall furnish to the OWNER a Certificate of Insurance of \$1,000,000 for general liability. BIDDER shall also provide a valid McCracken County business license.

In accordance with KRS 45A.365, prior to a contract being awarded, a resident bidder of the Commonwealth shall be given a preference against a non-resident bidder registered in any state that gives or requires a preference to bidders from that state. The preference shall be equal to the preference given or required by the state of the non-resident bidder. BIDDER is a resident of the following state: _____.

Bid Documents shall be enclosed in an envelope clearly labeled with the words **"Bid Documents, Name of Project, Name of Bidder, and Date and Time of Bid Opening"**, in order to guard against premature opening of the BID. **BIDS received late will be disqualified and returned to the sender unopened.**

The undersigned has examined the location of the proposed work, the Drawings, Specifications and all other Contract Documents, and is familiar with the local conditions at the place(s) where the work is to be performed.

Bidder hereby proposes to furnish all equipment, materials and labor to perform all work for the project, in strict accordance with the CONTRACT DOCUMENTS, agrees to complete the project within 120 days of the execution of the Agreement, at the prices stated below. Extensions to the contract time will be considered if lead-time for the delivery of the cage system exceeds 10-weeks.

Base Bid Lump Sum (Batting Cages) \$ _____

Alternate Bid No. 1 Lump Sum (Pitching Lanes) \$ _____

BIDDER Company Name: _____

Address: _____

Authorized Name/Title (please print): _____

Signature: _____

Date: _____

Phone/email: _____

Federal Taxpayer Identification Number: _____

McCracken County Business License Number: _____

SECTION 00500
OWNER-CONTRACTOR AGREEMENT

RFBSA BALLPARK BATTING CAGES

THIS AGREEMENT, made this _____ day of _____, 2024, by and between the **McCracken County Fiscal Court**, hereinafter called the **CLIENT**, and _____, hereinafter called the **CONTRACTOR**;

WHEREAS, the **CONTRACTOR** has participated in good faith in the required bidding process and has been awarded the duties set forth in this Agreement, as follows:

ARTICLE 1. PROJECT DESCRIPTION

The **BASE BID** for the project includes the installation of concrete slab batting cages at RFBSA Ballpark. The batting cages include two pitching machine lanes measuring 58' x 32' with a 5' sidewalk on two sides, total concrete slab dimension 63' x 37'. The batting cages shall have a 2-cage framing and netting system, including steel post framing, nylon netting, cage doors, rope and all miscellaneous accessories as manufactured by Master Pitching Machine, or approved equivalent. In addition, the cage shall include post framing foundations, concrete slabs, sumps, drains, lights, post extensions for mounting lights, additional chain link fence, electrical and controls. The floor of the cage shall have a sloped concrete floor for automatic ball return. Two (2) Master Pitching Machines (Iron Mike) Model MA-4 pitching machines, one (1) Master Pitching Machines Model E199 ball elevator, and two (2) coin box operators are provided by the owner and shall be installed by the contractor as part of this project. Complete set-up of the automatic ball feed system will require erection of pitching machine components, PVC ball feed tubing, and electrical work. A 5' concrete sidewalk will be located along the west and south side of the batting cages. Electric service must be run from an existing power pole and panel to the west of the site, approximately 270 feet to the east end of the cage, to an exterior panel and then to the pitching machines and coin operators.

The **ALTERNATE BID 1** includes an additional concrete slab, measuring 60' x 32', with perimeter 6' tall chain link fence and two 3' wide gates for pitching lanes.

ARTICLE 2. DUTIES OF CONTRACTOR

The Contractor shall furnish all of the equipment, labor and materials to perform all of the work shown on the Drawings and described in the Specifications, and shall do everything required by this Agreement, Special Provisions of the Contract, Specifications and Drawings.

ARTICLE 3. TIME FOR COMPLETION

The work to be performed under this Contract shall be commenced within ten (10) calendar days after execution of this Agreement by both the **CLIENT** and **CONTRACTOR**, and shall be fully completed within **One hundred twenty (120) calendar days**. Extensions to the contract time will be considered if lead-time for the delivery of the cage system exceeds 10-weeks.

ARTICLE 4. THE CONTRACT SUM

The **CLIENT** shall pay the **CONTRACTOR** for the performance of the Contract, subject to additions and deductions provided therein: \$ _____ as quoted in the Bid Proposal by the **CONTRACTOR**, dated _____, which shall constitute full compensation for the work and services authorized herein.

ARTICLE 5. INDEPENDENT CONTRACTOR STATUS

The **CONTRACTOR** shall at all times act and perform as an independent contractor and not as an employee of the **CLIENT**. **CLIENT** shall neither have nor exercise any control or direction over the methods by which

SECTION 00500
OWNER-CONTRACTOR AGREEMENT

the CONTRACTOR performs its duties set forth herein. CONTRACTOR shall have sole authority to exercise independent judgment in all matters pertaining to such duties. CONTRACTOR shall not have any claim against CLIENT for vacation pay, sick leave, retirement benefits, health insurance, Social Security, worker's compensation, disability, unemployment benefits, or any other benefits provided to employees of the CLIENT. CONTRACTOR's only relationship with CLIENT is as set forth herein.

ARTICLE 6. REPRESENTATIONS AND WARRANTIES OF CONTRACTOR

CONTRACTOR represents and warrants that: (i) it maintains all requisite power and authority to execute and deliver the Agreement through its undersigned authorized agent and to perform and satisfy its duties and responsibilities hereunder in a professional and workmanlike manner; and (ii) this Agreement constitutes CONTRACTOR's valid and legally binding obligation enforceable against it in accordance with its terms.

ARTICLE 7. INSURANCE AND LICENSES

CONTRACTOR shall furnish to the CLIENT a Certificate of Insurance of \$1,000,000 for Commercial General Liability with McCracken County Fiscal Court and Reidland Farley Baseball and Softball Association listed as additional insured. BIDDER shall also provide a valid McCracken County business license.

ARTICLE 7. THE CONTRACT DOCUMENTS

The Specifications and the Drawings, together with this Agreement, form the Contract and they are as fully a part of the Contract as if thereto attached or herein repeated. The following is an enumeration of the Contract Documents:

1. ADVERTISEMENT FOR BIDS
2. INSTRUCTIONS TO BIDDERS
3. BID PROPOSAL, Dated _____
4. BIDDER CERTIFICATIONS
5. OWNER-CONTRACTOR AGREEMENT
6. Technical Specifications
6. Drawings

IN WITNESS WHEREOF: The parties hereto have executed this Agreement, the day and year first above written.

CONTRACTOR:

CLIENT:

Name: _____

Name: _____

By (Signature): _____

By (Signature): _____

By (Print): _____

By (Print): _____

Title: _____

Title: _____

Date: _____

Date: _____

SECTION 02000
PROJECT DESCRIPTION

1. BASIS OF DESIGN

- A. BASE BID is for the batting cages only. This is an approximate 58' x 32' batting cage with a 5' wide sidewalk on two sides, total dimension approximately 63' x 37'. BASE BID shall include all items as noted in these specifications and drawings for a complete and functional system.
- B. ALTERNATE BID 1 is for two pitching lanes and perimeter fence, approximate dimension 60' x 32'.
- C. The batting cages were designed from the standards and specifications given by Master Pitching Machine, 4200 NE Birmingham Road, Kansas City, MO 64117, for an Outdoor Rectangular Batting Cage, 2-stall.
- D. Chain link fence must be designed and installed by a fence contractor to industry standard.

2. BATTING CAGE EQUIPMENT AND INSTALLATION

- A. The Reidland Farley Baseball and Softball Association (RFBSA) will provide two (2) Master Pitching Machine (Iron Mike) Model MA-4 pitching machines and one (1) Master Pitching Machine Model E199 ball elevator. The CONTRACTOR is responsible for installation and setup of the machines.
- B. CONTRACTOR shall provide and install the 2-stall cage system (including all steel posts, netting, cage doors, rope and other miscellaneous accessories) by Master Pitching Machine or approved equivalent. Documentation for all proposed "equivalents" must be submitted to the engineer for approval prior to ordering.
- C. CONTRACTOR shall provide and install all fill material necessary to meet the grades shown on the grading plan. CONTRACTOR shall compact all fill material to minimum 95% Standard Proctor per ASTM D 698.
- D. CONTRACTOR shall provide and install all chain-link fence and gates as shown on the drawings.
- E. CONTRACTOR shall be responsible for providing and constructing all aggregate base material, concrete slabs, concrete pole foundations, concrete sidewalk, and all other concrete work associated with the batting cage system.
- F. CONTRACTOR shall provide and install LED Flood Lights and Spotlights suitable for equivalent illumination as indicated by location and type of lights on the Master Pitching Machine instructions in this section and on the plan drawings. CONTRACTOR must also provide and install post extensions for mounting lights on the cage structure.
- G. CONTRACTOR shall provide and install electric service, electrical panels, breakers, conduit, conductors, etc. for the complete and functional system.
- H. RFBSA will provide two (2) coin box operators for the pitching machine system. CONTRACTOR shall be responsible for the installation and setup of the coin box operators.
- I. CONTRACTOR shall provide and install the drainage system including drains and piping to outlet as shown on the drawings. Backfill and compact trench and restore surface to a condition equal to or better than existing.

3. BATTING CAGE INSTALLATION INSTRUCTIONS

- A. Section 02100 following this section gives instructions for the complete installation of a batting cage system by Master Pitching Machine. The majority of the instructions in this section depict a 3-stall cage system, and some pictures up to 5-stalls. A 2-Cage Contouring and Slope Plan is included on the last page of the attached instructions. ADJUSTMENTS ARE REQUIRED to provide and install a 2-stall cage system as intended in the attached instructions. Contractor is required to obtain the most up-to-date plans and installation instructions of a 2-cage system from Master Pitching Machine and adjust as necessary to comply with the instructions.
- B. Installation Instructions as published by Master Pitching Machine are attached as follows:

Master Pitching Machine

4200 NE Birmingham Road • Kansas City, MO 64117 • (800) 878-8228 • FAX (816) 452-7581

Outdoor Rectangular Batting Cage 3 Stall (EW/SPS)

The most experienced and most reliable manufacturer
of ball throwing equipment in the world.



We are the world's leader in the manufacturing of easy to erect
batting cages. Our batting cages come with factory built fittings,
pipes, netting, net rigging supplies and assembly instructions.

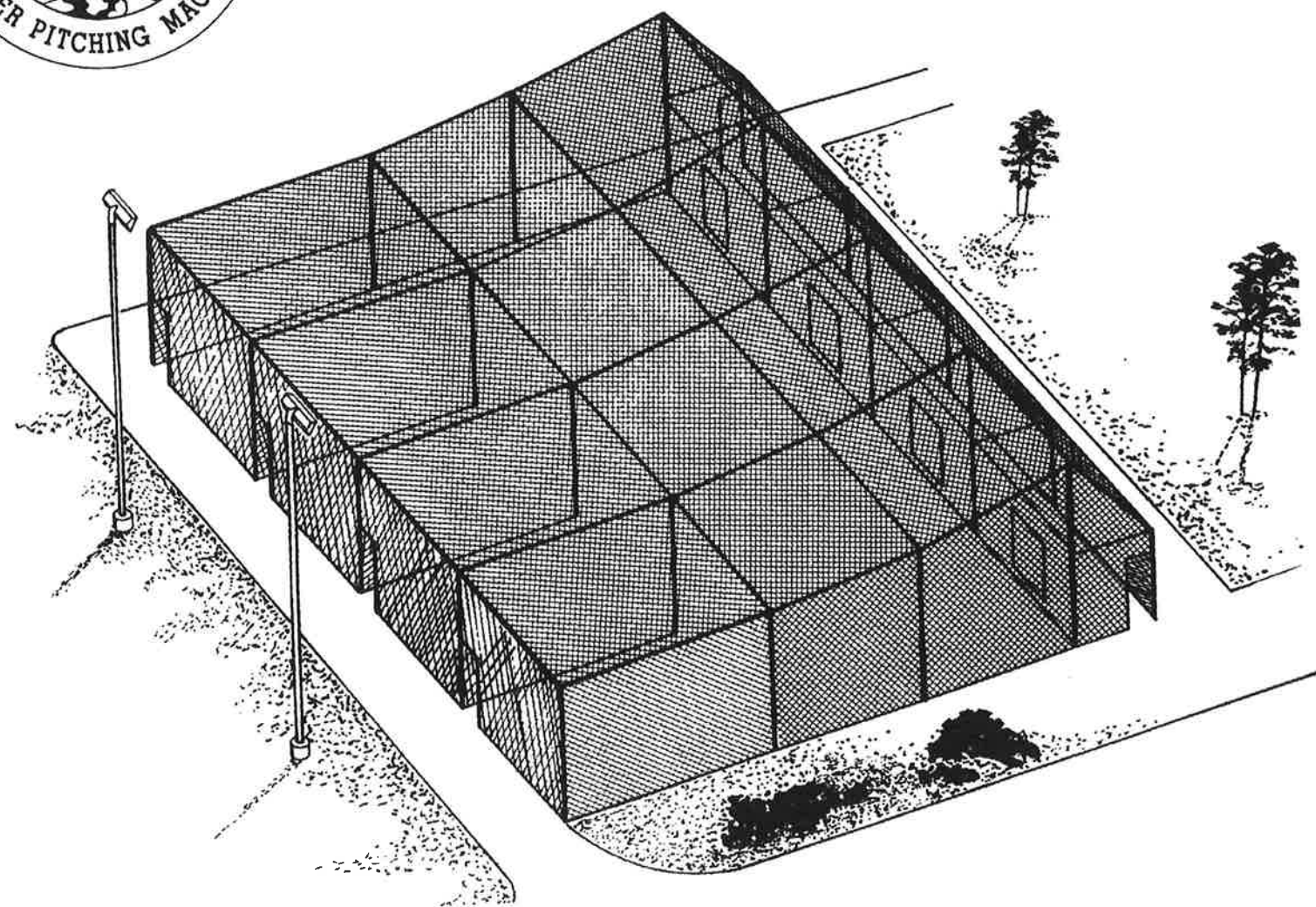
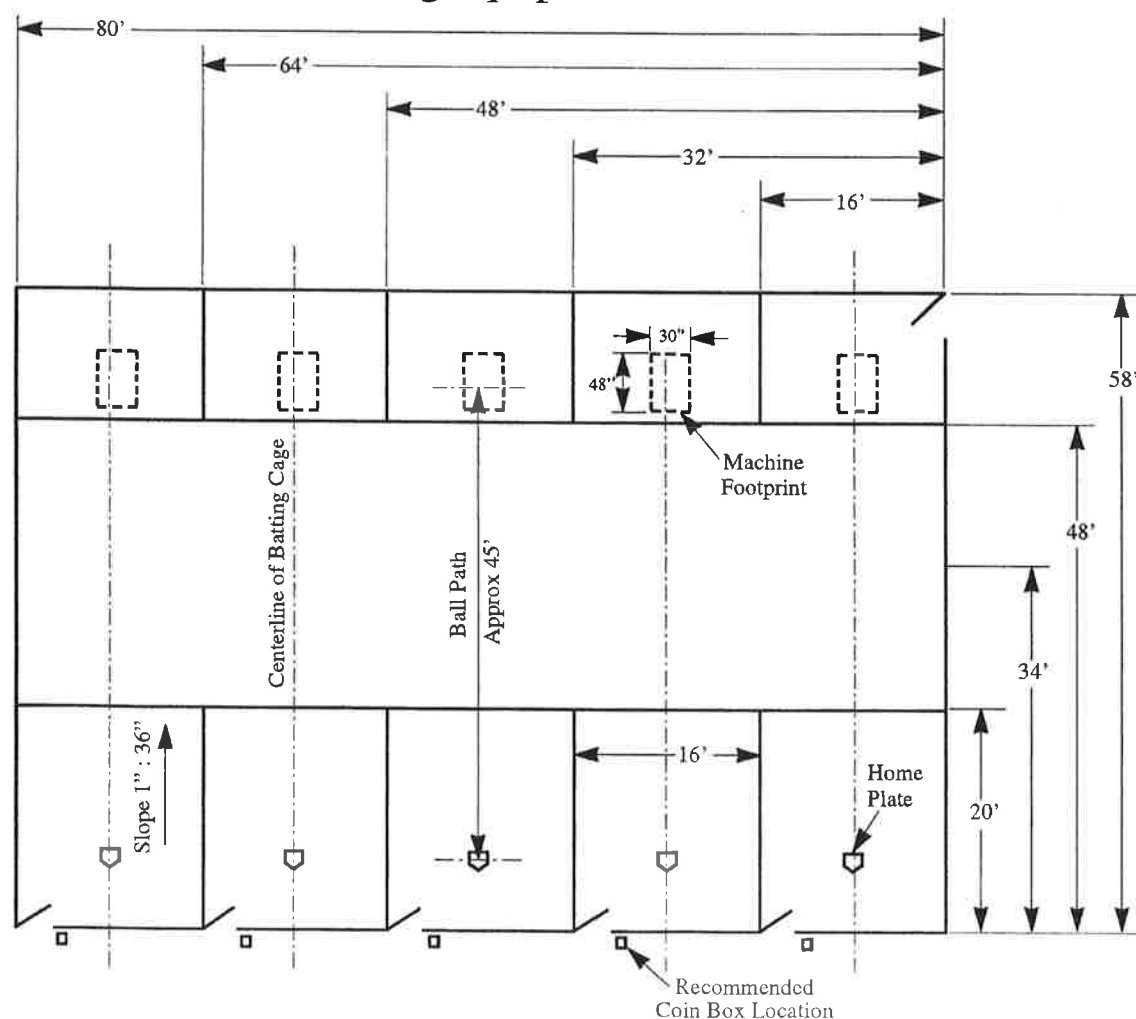


Table of Contents

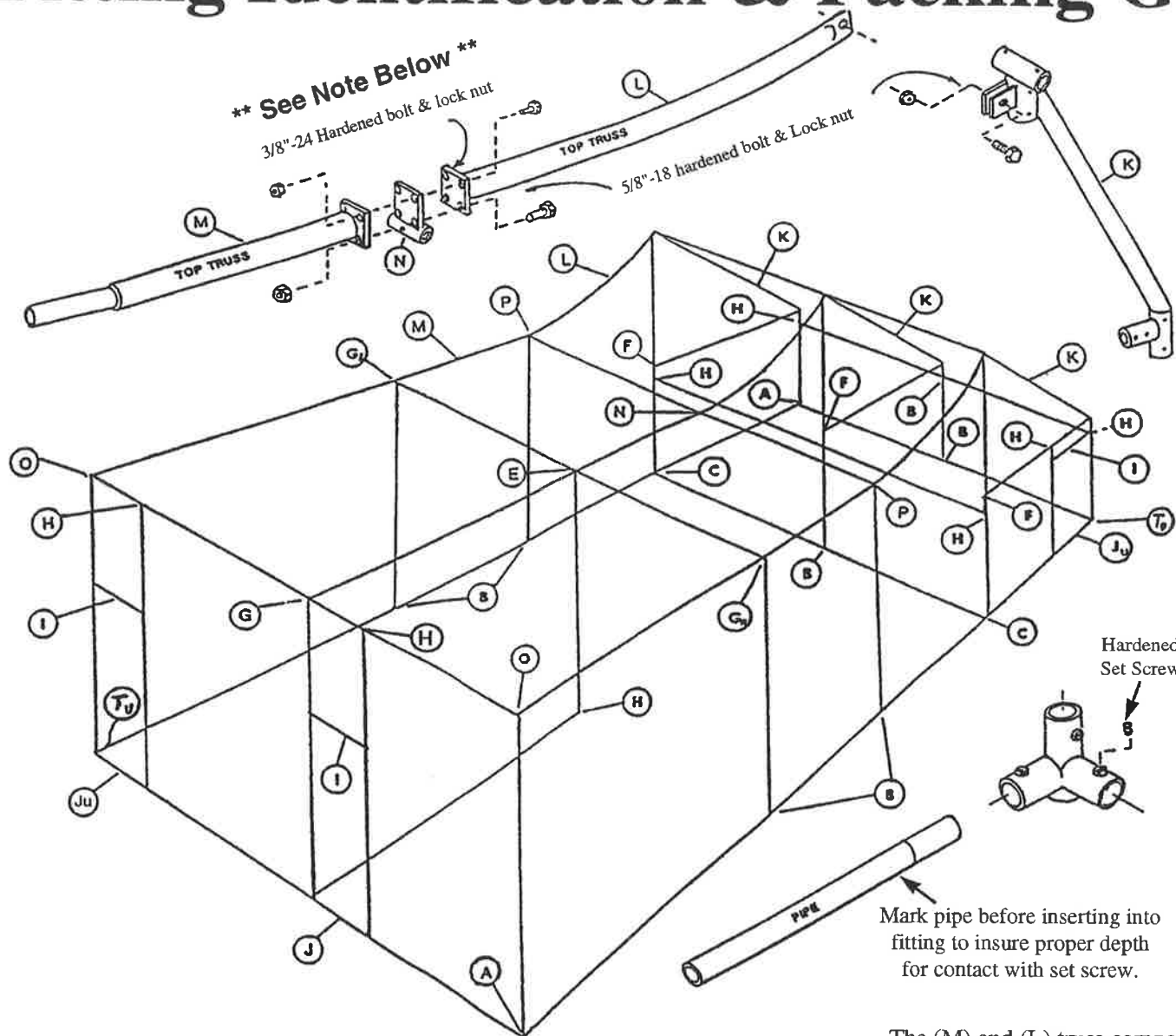
Cover Page: Outdoor Rectangular Batting Cage
 Table of Contents

i
 ii

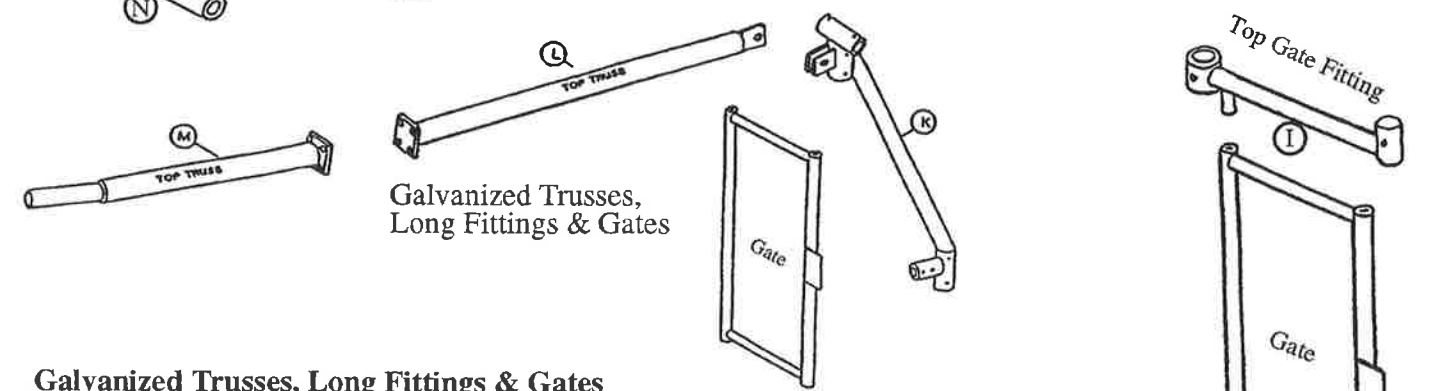
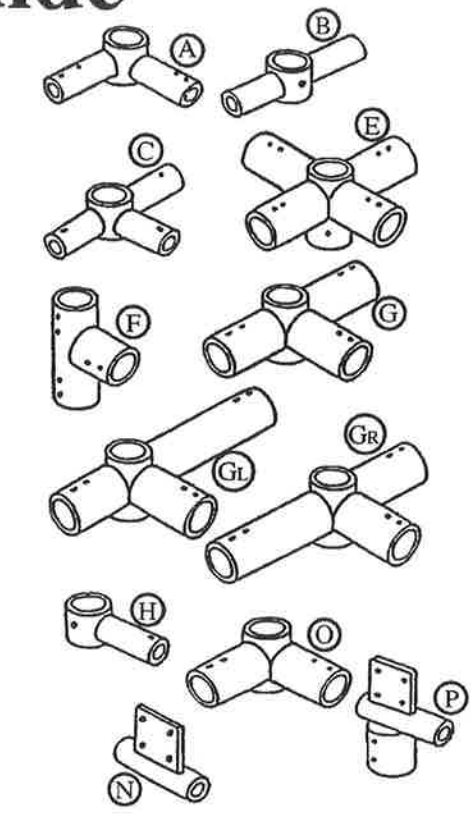
| Section | Pages |
|--|-------|
| Fitting and Accessories Guide | 1 |
| A. Fitting identification views | |
| B. Fitting quantities and locations | |
| C. Accessories quantities | |
| Pipe Cutting and Shipping Guide | 2 |
| A. Shipping list and lengths | |
| B. Cut lengths and locations | |
| Cage Contour and Slope Plan | 3 |
| A. Concrete Slab Elevations | |
| B. Concrete specifications and general notes | |
| Electrical Wiring and Conduit Runs | 4 |
| Footing Details & Methods of Setting Vertical Pipes | 5 |
| Elevator Ball Sump Installation | 6 |
| Steel sump form dimensions | |
| Elevator and Ball Return Trough Locations for 16' Wide Cage System | 7 |
| Elevator Sizes and Specifications | 8 |
| Netting Installation Instructions | 9 |
| Net Guide: sizes and quantities | |
| Netting Installation Instructions | 10 |
| Top, Divider and Front Nets | |
| Netting Installation Instructions | 11 |
| A. Vertical Seams | |
| B. Attachment to bottom rails | |
| C. Attachment to divider poles | |
| D. Doorway cut-out | |
| E. Net corners attachment | |
| F. Final positioning and attachment | |
| Netting Installation Instructions | 12 |
| A. Net support cables | |
| B. Catcher's mat/net attachment | |
| Netting Installation Instructions | 13 |
| Net edge rope weaving: looping method | |
| Hole Location for the Net at the Front of the Machine Area | 14 |
| Batting Cage Lights and Net Protectors | 15 |
| Recommended Lighting Amounts | |
| Coin Box Location, Safety Barrier, and Cage Door Spring Installation | 16 |
| Chain Link Fence Requirements | 17 |
| Mounting A-Series & MA-Series Machines | 18 |
| A. Conduit riser locations | |
| B. Anchor bolt locations | |
| C. Machine hold downs | |
| Electrical Wiring for Coin-Operated Pitching Machines | 19 |
| Control panel wiring of pitching machine | |

| Section | Pages |
|--|-------|
| Ball Elevator and Distribution System Controls | 20 |
| Parallel start-up wiring | |
| Model EW Elevator Belt Tension Adjustment and Maintenance | 21 |
| A. Alligator belt lacing installation instructions | |
| B. Wire size specifications | |
| Diverter & Ball Level Control System Wiring | 22 |
| A. Control panel wiring of elevator | |
| B. Series wiring of Ball Level Control Switches | |
| The Hopper Bottom Ball Level Control Installation | 23 |
| Separator Box, Diverter Gate, & Flex Tube Adapter Installation | 24 |
| Bolt hole locations for mounting Ball Separator Head | |
| 24 Volt Diverter Control System for In-Line Diverters | 25 |
| 24 Volt Diverter Control System for Right-Left Ball Separator Head | 26 |
| Typical Single Path Distribution System | 27 |
| A. Type of clamps and location used | |
| B. Elevator hardware list | |
| C. PVC Pipe packing list | |
| D. Flex tube and ball duct routing locations | |
| Typical Single Path Distribution System | 28 |
| A. Type of clamps and location used | |
| B. Elevator hardware list | |
| C. PVC Pipe packing list | |
| D. Flex tube and ball duct routing locations | |

Fitting Identification & Packing Guide



| # | Number of Cages | | | | | | | | | | | |
|------|-----------------|---|----|----|----|----|----|----|----|----|----|----|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| A | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| B | 4 | 8 | 12 | 16 | 20 | 24 | 28 | 32 | 36 | 40 | 44 | 48 |
| C | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| E | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| F | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| G | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| GL | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| GR | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| H | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 | 28 |
| I | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| J | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| Ju | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| K | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| L | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| M | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| N | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| O | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| P | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Tu | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Gate | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |



Galvanized Trusses, Long Fittings & Gates

The (M) and (L) truss components and the (K) fittings are each made up of approximately 14 feet of galvanized pipe with welded components at each end. The welds and the components at the junction of the (L) and (M) fittings and the welded components at the junction of the (K) fitting are not made of galvanized material, but are either coated with a cold galvanizing material or a high quality aluminum paint or both. The long length of the tubing forming the center of these fittings is the same galvanized and coated type of tubing supplied in our galvanized pipe program.

The gates supplied with this program are made of galvanized tubing with the welds and non-galvanized parts cold galvanized or aluminum painted to match the tubing. The rest of the fittings supplied are standard aluminum painted fittings. It is suggested that all fittings be retouched or painted after installation to repair paint damage caused by shipping and handling of the fittings. The galvanized pipe should be retouched with a matching aluminum paint or high zinc paint if any serious scrapes of the surface result in rusted spots. The galvanizing (zinc coating) generally protects even small uncoated areas from serious rusting.

Note: The purchaser of these galvanized trusses should notice that the familiar oval cross section of the tubing in (L) and (M) fittings has been replaced by a round cross section and the slight curve in the (L) fitting is replaced by a straight section. While this change (necessary for manufacturing reasons) is hardly noticeable to the casual observer, it is important that anyone ordering parts to add on or to replace parts in existing installations with the original truss design specify the original design.

| | Number of Cages | | | | | | | | | | | |
|--------------------|-----------------|---|---|----|----|----|----|----|----|----|----|----|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| Instructions | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Set Screws 25/Pkg | 5 | 7 | 9 | 11 | 14 | 16 | 18 | 20 | 22 | 25 | 27 | 29 |
| Door Hinge Washers | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| Bolt Packages | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |

3 Cage Contouring and Slope Plan

This is the recommended contour of the batting cage floor with one elevator system.

****The minimum slope of the cage floor should be one inch for each three feet****

Solid line (A) represents the perimeter of the batting cage floor. Maintain level elevation around the entire perimeter. All other elevations on the sketch are relative to this elevation.

Dotted line (B) represents a uniform elevation 6.7' below the perimeter. The batter's area slopes towards the ball sump.

The Central Slope Area slopes from line (B) towards the ball sump. Ideally, all slopes should join in a gently formed trough in front of the machines at Point (C). The balls should enter the sump at Point (D). Point (D) should be approximately 8.0' below Point (C). Point (C) should be 20.0' below Perimeter Line (A).

Note: Separate concrete pitching machine mounting pads are not used in this design. Machines are bolted directly to the concrete slab in the machine area. Special pads are used to correct for sloped concrete slabs and to allow balls to roll out from under or around the machines.

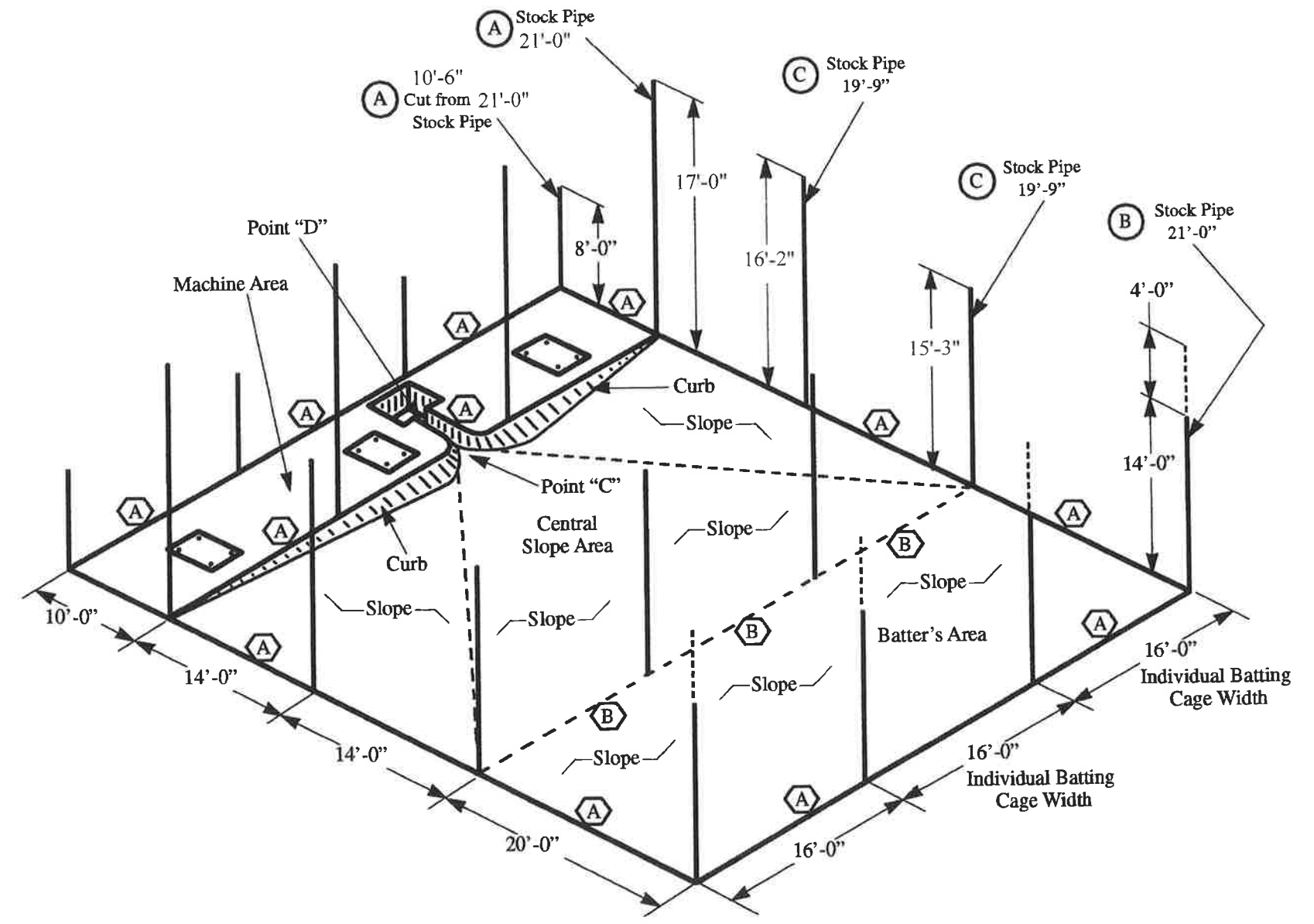
Note: The pipe dimensions shown are measurements above "Ground Plane" or perimeter elevation. Be sure to allow for the slope of floor and the length of pipe below the surface. Allow additional slope for rough or uneven cage floor finish.

General Guidelines

1. All work shall be in strict compliance with local, county and state codes.
2. All concrete for footings and slab shall be standard 3,000 psi, 28 day strength (minimum). Cement shall be portland cement conforming to ASTM C-150, Type 1 or 2 with a minimum of 5 sacks per cubic yard.
3. Ensure that all conduit runs, drain lines, and footings with ties are put in place before the slab is poured.
4. Use good concrete practice with generous use of expansion or control joints and reinforcements where needed in the concrete floor being careful not to interfere with the flow of the balls.

Note: For estimating purposes, plan on 4.04 cubic yards of concrete for batting cage posts and 38.18 cubic yards of concrete for 4" thick batting cage floor.

Important: Post layout measurements shown are from center-to-center of vertical posts. Close adherence to these dimensions is essential for proper fit of fitting system and standard nets.



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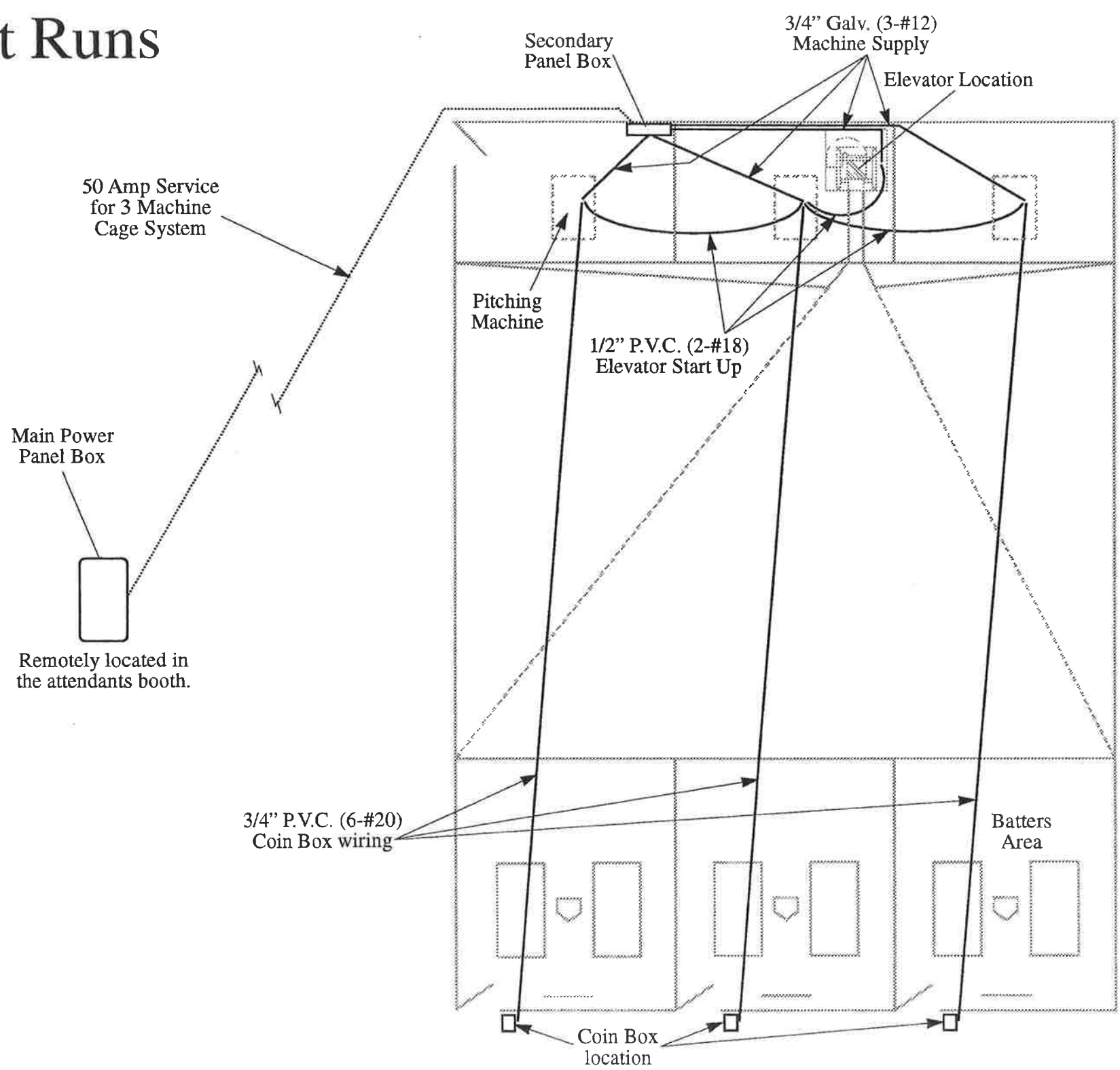
Electrical Wiring and Conduit Runs

General Guidelines;

1. All work shall be in strict compliance with local county, and state codes.
2. Each machine requires a 120 Volt AC, 15 amp supply.
3. Each Coin Box is to be wired from the pitching machine with a separate 15 Volt DC being supplied by the circuit board. **Do Not** run any other wiring in these conduits (with the exception of Lefty Selector Switch).
4. The Elevator requires a 120 Volt AC, 20 amp supply.
5. For the automatic starting of the elevator, each pitching machine must be wired in parallel to the elevator. This is a 24 Volt system being supplied from the elevator and using the unused secondary set of contacts of the main control relay in the pitching machine control box as a switch to start the elevator when ever a pitching machine starts up. Run a conduit loop between each machine and then a loop from the closest machine to the elevator.
6. A weather proof, 120 Volt AC, 15 amp plug-in receptacle box mounted near the secondary panel box is suggested for use of electrical tools.

Note: For those machines with "J" boards and using the Master Control Panel, a separate 10 conductor wire for each machine is to be run from the master control panel (located in the operations building) to each machine. Normally one, 1" conduit, is run from the operations building to the machine area carrying all 3 wire sets (10 conductor each) to the machine area and is then split off from a junction box to each machine. Since this is an option and not a standard wiring requirement, the conduit sizes and runs are not shown in this drawing.

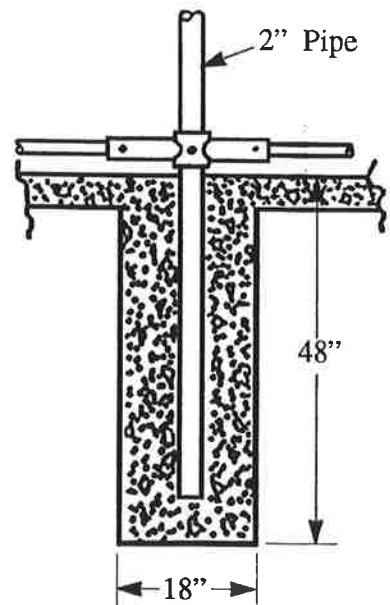
For those cages using the lefty or dual machine option, the only additional wiring to add is a 2 conductor wire running from the selector switch, located in the coin box, to the pitching machine. This 2 wire conductor can be run in the same conduit as the coin box wiring.



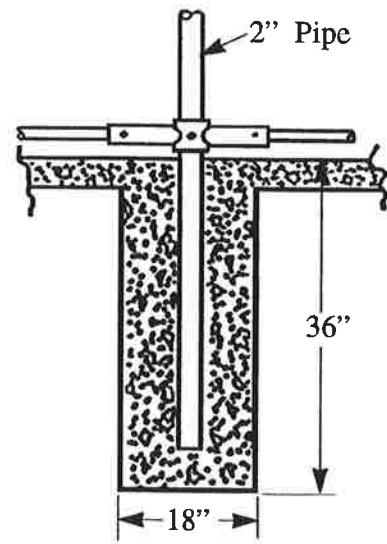
3 Station Rectangular Batting Cage System

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Footing Details & Methods of Setting Vertical Pipes

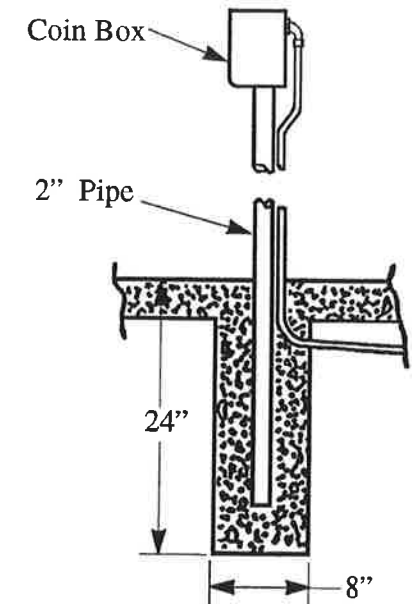


Machine Area Poles



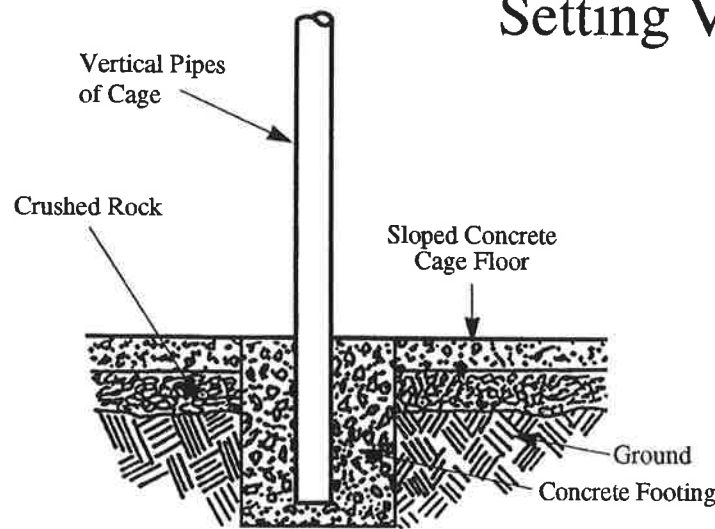
Batting Cage Poles

NOTE: All work shall be in strict compliance with local, county and state codes. All concrete for footings shall be standard 3,000 psi, 28 day strength (minimum). Cement shall be portland cement conforming to ASTM C-150, Type 1 or 2 with a minimum of 5 sacks per cubic yard. All footings shall be tied into the slab using 6 x 6 -10/10 welded wire fabric. Use good concrete practice with generous use of expansion or control joints and reinforcements where needed.

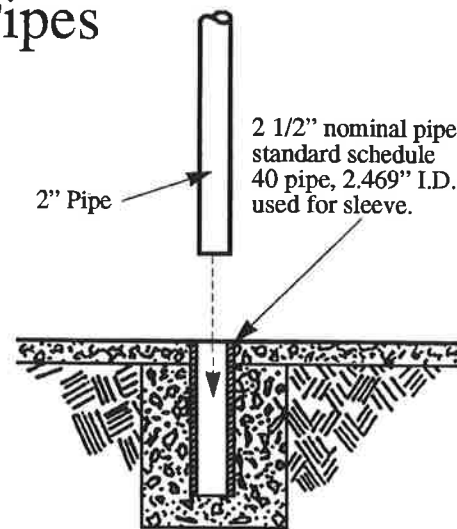


Coin Box Mounting Post

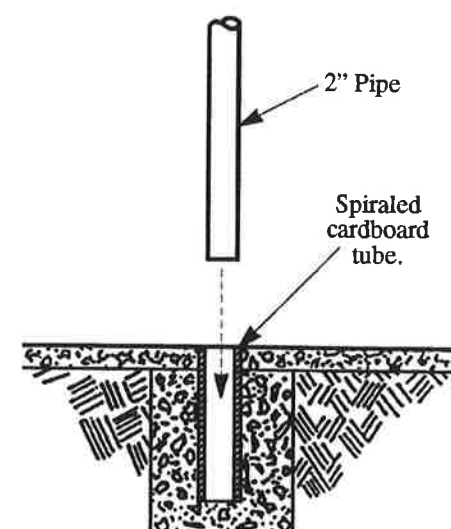
Setting Vertical Pipes



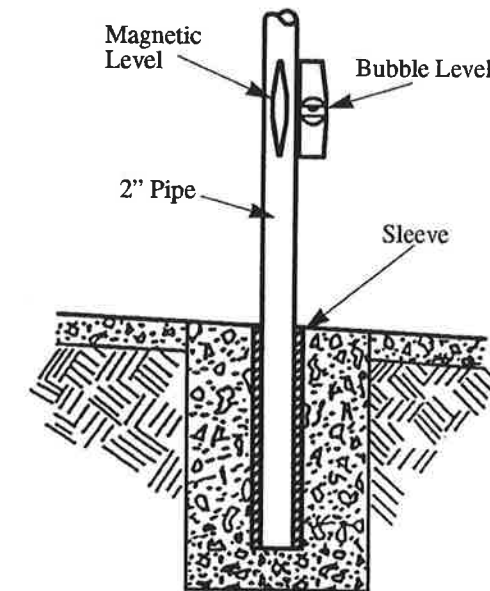
Nominal pipe, standard schedule 40 or an equivalent, placed into the concrete footing to a depth specified by local building codes.



Place the pipe sleeve in the concrete footing flush with the surface of the finished cage floor, which should be poured to meet local building codes. **Note:** Before placing the pipe sleeves in the concrete footings check to make sure there are no weld seams or extrusions inside the sleeve that would restrict the vertical pipe from entering the sleeve. Once the vertical poles are in place, grout or concrete the poles into the sleeves.



Place the 2 1/2" spiraled cardboard tube in the concrete footing to the depth specified by local building codes. The spiraled cardboard tube can be removed after the footing has set and the vertical pipe can be inserted into the footing. Once the vertical pipes are in place, grout or concrete the poles in place.



Note: When using the sleeve technique a 6' long piece of 2" nominal pipe should be used to square the sleeve in the concrete footing before it sets. This will keep the vertical pipes of the cage square to one another. Do this by using a magnetic level to plumb the pipe with the ground. Plumb twice, 90° to each other. This will result in a pipe vertical to the earth's surface. See illustration. Also, use the leveling technique when placing 2" nominal pipe into the concrete footing without a sleeve.

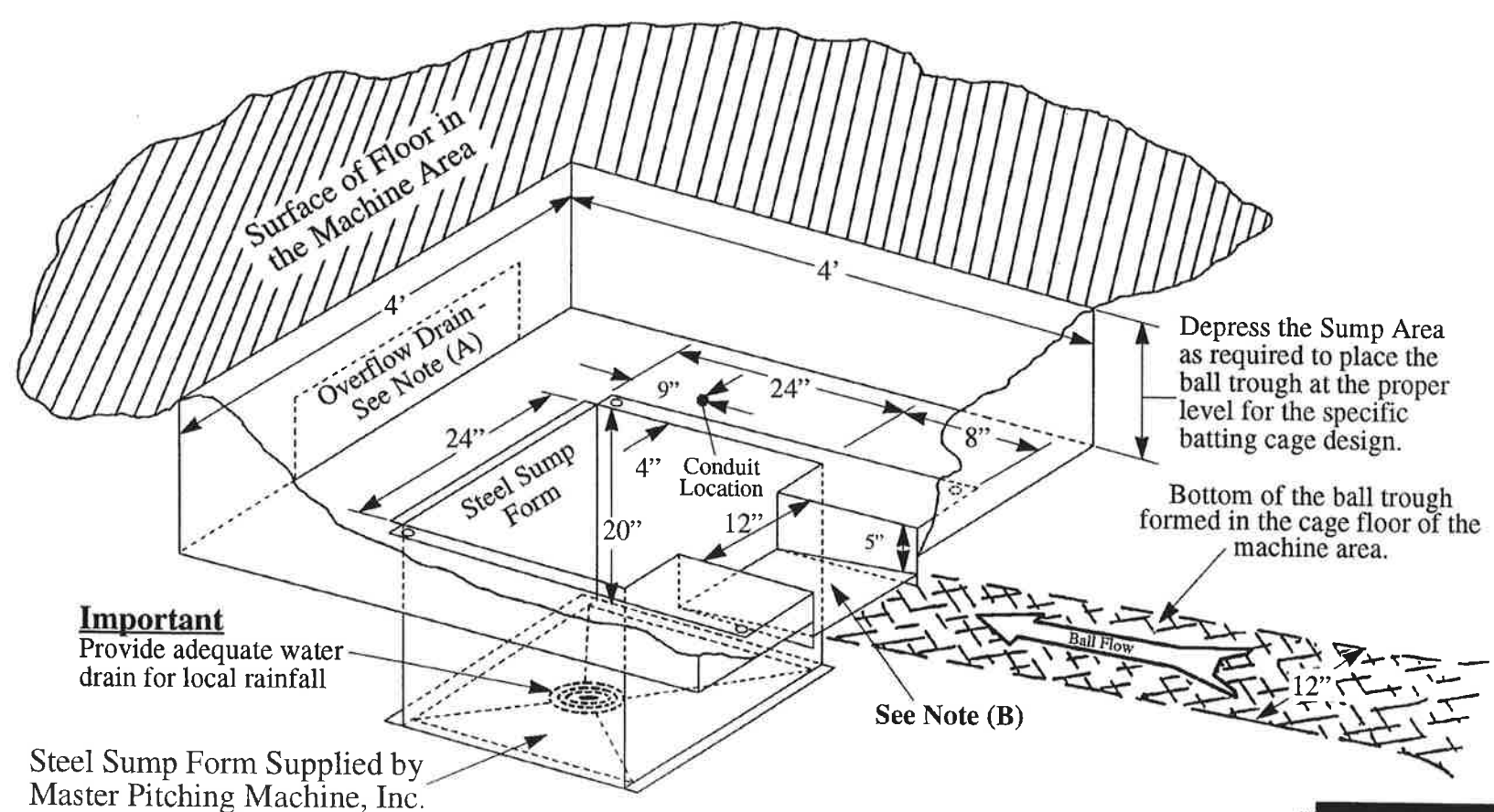
Elevator Ball Sump Installation

When forming up the sump form, it is best to block out the sump form from the inside of the form itself and suspend the form for the first pour around the form and the floor of the working area. It is important that the top of the form be kept at a level elevation, especially the entrance tray and ensure that all conduit runs and drain lines are put in place before the form is poured. Also, when installing the steel sump form, be sure to allow for drainage, ball flow and access around the elevator. Holes in the sump form are provided for the elevator anchor bolts and to insure proper installation, place the elevator, with the "H" frame bolted to it, into the sump form after the pour has set and drill through the mounting holes located on the "H" frame noting that the elevator should be centered and resting against the ball return entrance tray in its proper position before drilling. 1/2" diameter expandable anchor bolts should be used to anchor the elevator in place.

To install the elevator into the sump form, the "H" frame must be bolted in place. To install the "H" frame, first remove the back bolts of the elevator roller guard and rotate the guard down and out of the way. Then remove the roller guard extension plate. Now slide the "H" frame on and up into position and bolt in place. Note that the bottom of the flexible safety cover bolts onto the outside of the "H" frame. Reinstall the roller guard extension plate and roller guard. At this point, position the elevator on the shipping skid so that the front side of the elevator is facing up. Then slide the elevator and skid to the back of the sump pit and use the skid to help lift or flip the elevator up into the pit. Be careful not to damage the safety limit switch on the side the the elevator. When the elevator is installed in a depression below the surrounding floor it is necessary, for convenience and safety, to install a set of removable grates or covers around the elevator. These will allow access to the system for service, cover the openings to prevent injury from stumbling into the depression, and prevent balls from gathering in the sump pit around the elevator drive components.

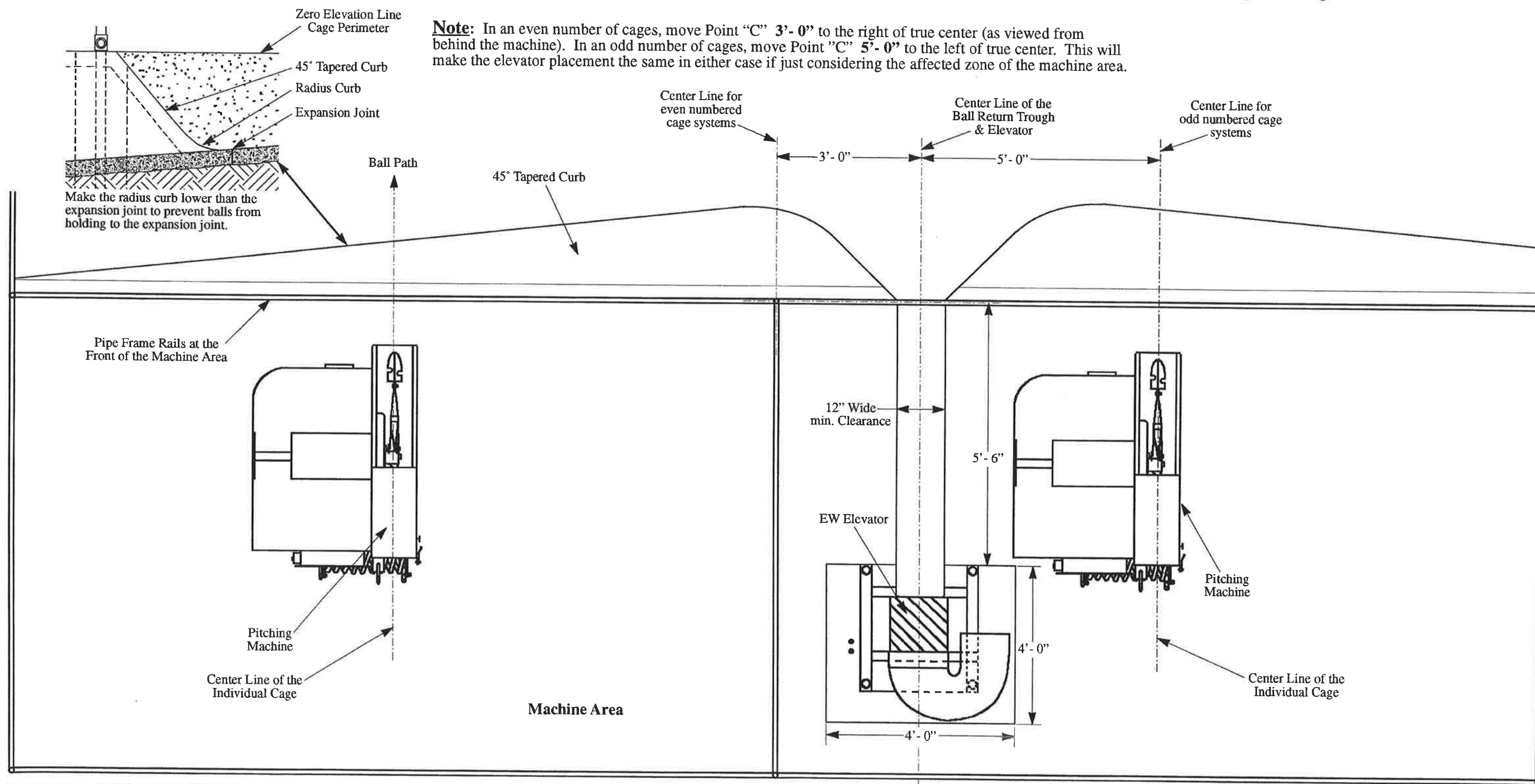
Note (A): If there is any question about the ability of the drain at the bottom of the sump to handle the water flow under the worst conditions anticipated, it may be desirable to open up the rear of the depressed area around the sump as an overflow drain. Another option is to install a sump pump located in the back portion of the sump form behind the elevator or if required, an access box with a sump pump.

Note (B): When pouring the concrete ball trough, pour the slope over the ball trough entrance tray at least 1" thick and tapering down to zero at the inside edge. This will help feed the balls onto the belt and will prevent the balls from settling in the tray and not loading. An alternate way to pour the trough would be to remove the bottom of the entrance tray itself and block across the entrance tray to maintain the 12" width, then pour the trough continuing right down through the area where the entrance tray would have been.

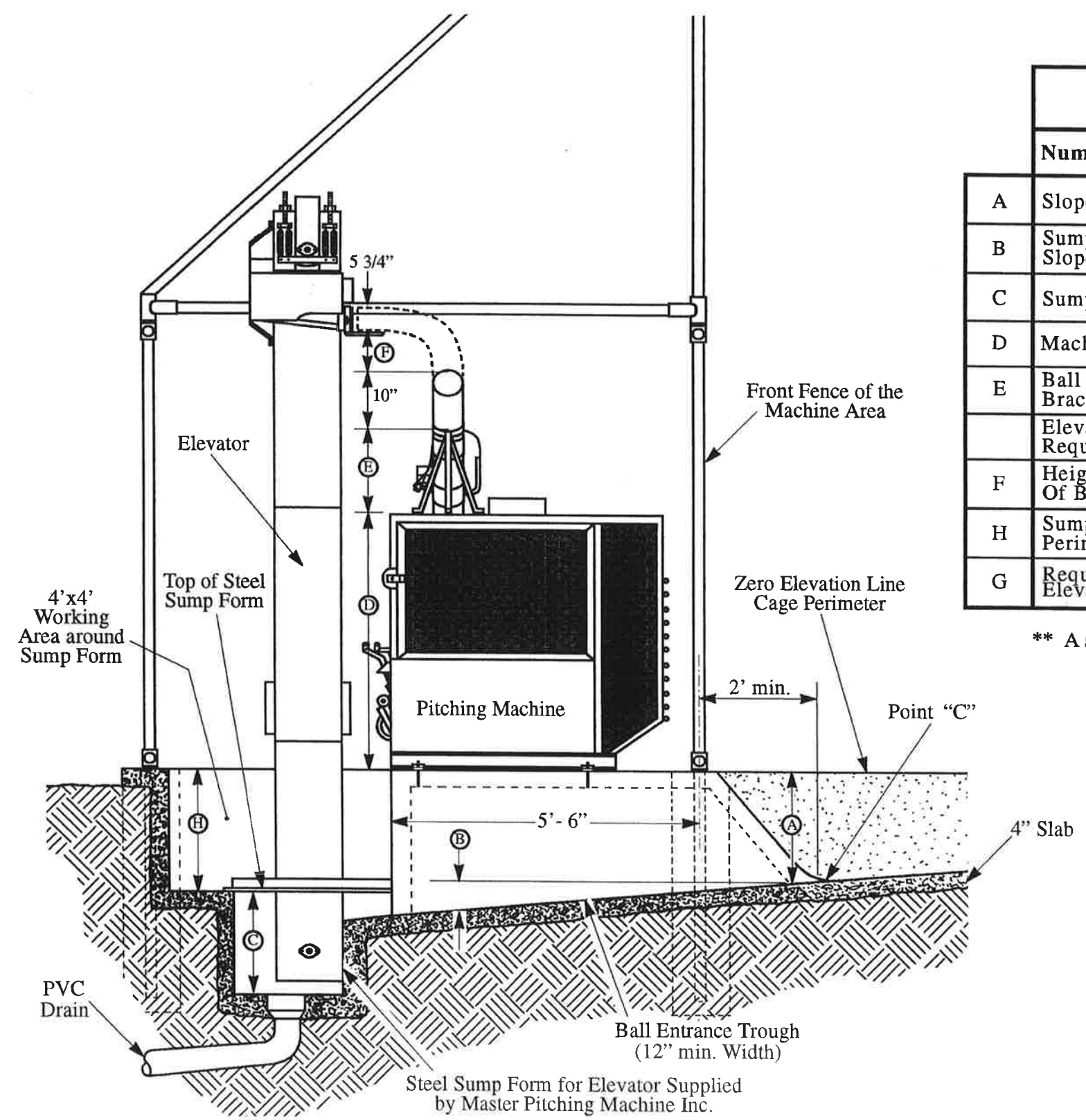


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Elevator and Ball Return Trough Location for 16' Wide Cage Systems



EW Elevator Specifications and Sizes



| Specifications for EW Elevator | | | | | | | | | | | | | |
|--------------------------------|-------------------------------------|----------------------------------|------|------------------------------|------|--|------|------|------|---------------------------------------|------|------|------|
| Number of Cages | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | |
| A | Slope | 18" | 20" | 20" | 20" | 25" | 25" | 29" | 29" | 34" | 34" | 39" | 39" |
| B | Sump Entrance Slope | 8" | 8" | 8" | 8" | 8" | 8" | 8" | 8" | 8" | 8" | 8" | 8" |
| C | Sump Depth | 20" | 20" | 20" | 20" | 20" | 20" | 20" | 20" | 20" | 20" | 20" | 20" |
| D | Machine Height | 55" | 55" | 55" | 55" | 55" | 55" | 55" | 55" | 55" | 55" | 55" | 55" |
| E | Ball Duct Bracket Height | 0" | 0" | 0" | 10" | 10" | 20" | 20" | 30" | 30" | 40" | 40" | 50" |
| | Elevator's Required Height | 108" | 110" | 120" | 130" | 135" | 145" | 149" | 159" | 164" | 174" | 179" | 189" |
| F | Height Difference Of Ball Separator | 12 | 10" | 0" | 14" | 9" | 23" | 19" | 9" | 4" | 18" | 13" | 3" |
| H | Sump Depth From Perimeter "A" | 20" | 22" | 22" | 22" | 27" | 27" | 31" | 31" | 36" | 36" | 41" | 41" |
| G | Required Elevator Size ** | Standard Elevator + 2' Extension | | Std. Elevator + 4' Extension | | Standard Elevator + 4' & 2' Extensions | | | | Standard Elevator + Two 4' Extensions | | | |

** A standard elevator consists of two 4' sections and the 18" head.

Netting Installation Instructions

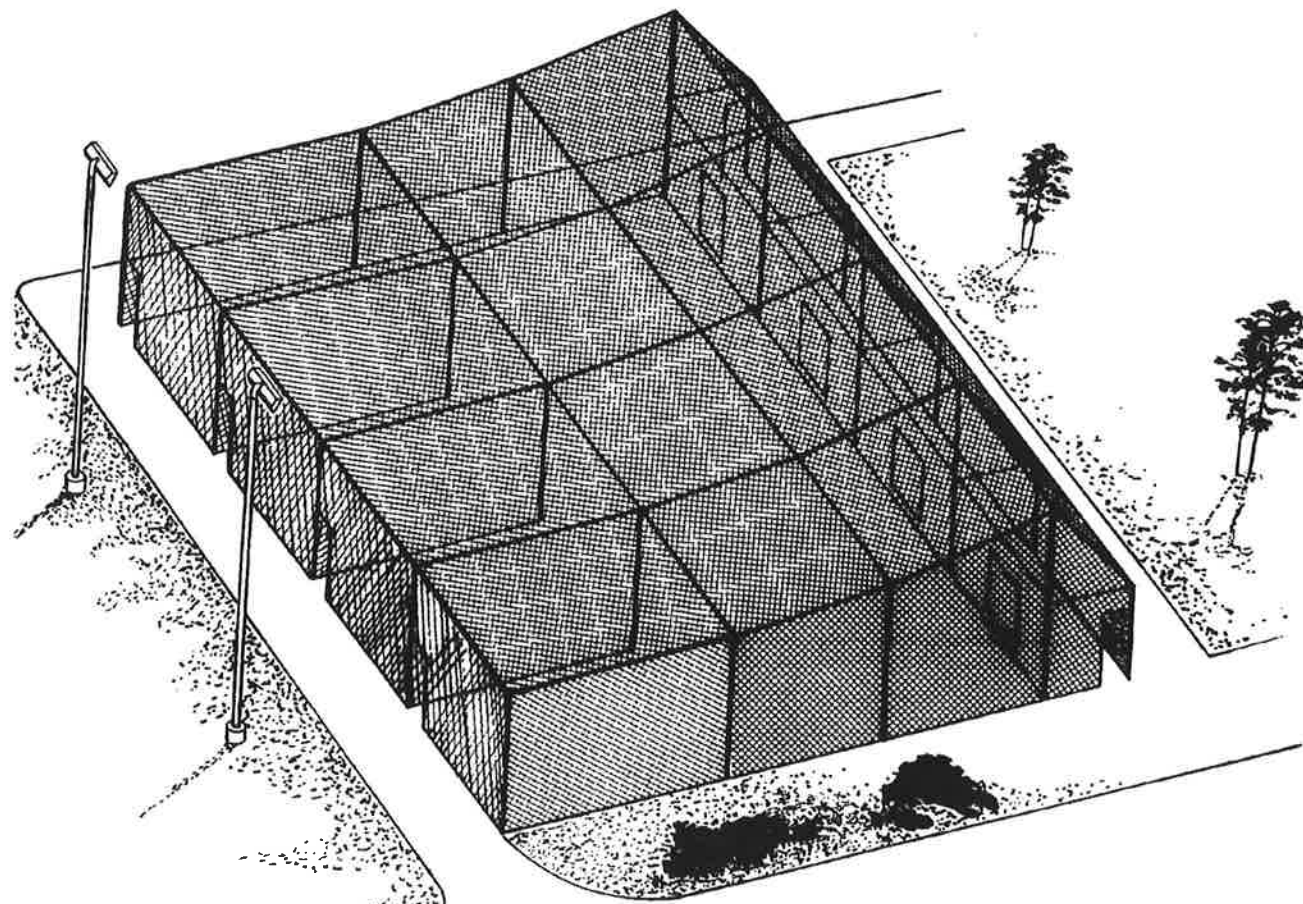
OVERVIEW:

The rectangular batting cage design incorporates nets hung from the inside of the pipe framework. This is done to lengthen the life of the net. Whenever possible, the net should be suspended away from its pipe support to avoid stress concentrations when balls strike the net (the more "give" the better) thereby increasing the life of the net. A tightly hung net will incur greater stress when struck and will wear out more quickly.

The cage front, machine area front, top, side, and divider nets are "square" mesh nets and are rigidly shaped nets. Nets sometimes appear too small or under sized after initially unpacking (due to compressing when packed) but will generally stretch out during installation if pulled firmly and evenly to the cage frame or if left alone to hang in place for several hours.

Netting installation involves laying the nets out in the proper configuration (as to size, shape, and positioning), temporarily hanging the nets at a convenient working height, and then joining the nets at adjoining interfaces (seams) with hog rings.

Net installation is considered a slow, tedious, and repetitive process but patience will be rewarded.



Typical Rectangular Design

Special Instructions for Enabling Off-Season Net Removal

If it is planned to take nets down during off-season, follow the same general instructions but make some of the splices less permanent. That is, fasten the divider net to only one top net permanently and lace the other with rope or tie wire around the bindings. This will allow the entire assembled net to be removed intact. Removal and subsequent reassembly of net involves considerable work and some cost.

Alternatively, leaving the netting in place will decrease the nets overall life due to stresses caused by snow and ice loads. Severe loading can cause damage to the nets and frame work.

Net life is dependent on several factors such as geographical location, weather conditions, and usage (in relation to set-up and seasonal). Maintenance of the net system integrity is a must and requires up keep of the net when ever damage occurs. Netting is considered as a consumable product. One should weigh the costs of removal and reassembly to that of new nets when making this consideration.

| PACKING LIST | | | | | | | | | | |
|---|----------|---|---|---|---|---|---|---|---|----|
| Netting Requirements for Rectangular Designs | | | | | | | | | | |
| Number of Cages | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Net Description | Quantity | | | | | | | | | |
| Top Net (16'x 48' Standard) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Front Net (16'x 13' Heavy) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Divider Net (13'x 20' Standard) | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Side Net (13'-16'x 48' Standard) | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Machine Area Net (16'x 16' Heavy) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Catcher's Net or Mat (4'x 6' Heavy / 3'x 5' rubber) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

| Number of Cages | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|----------|----|----|----|----|----|----|----|----|----|
| Net Rigging Accessories | Quantity | | | | | | | | | |
| Net Support Cable (50' Rolls of Tie Wire) | 12 | 18 | 24 | 31 | 38 | 44 | 51 | 57 | 64 | 71 |
| Hog Ring Package (400 per pack) | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 10 | 11 | 12 |
| Hog Ring Pliers | 2 | 2 | 2 | 3 | 3 | 3 | 4 | 4 | 4 | 4 |
| Springs | 7 | 13 | 19 | 25 | 31 | 37 | 43 | 49 | 55 | 61 |
| Spring Clips | 7 | 13 | 19 | 25 | 31 | 37 | 43 | 49 | 55 | 61 |

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Netting Installation Instructions

TOP, DIVIDER AND FRONT NETS:

The batter's area is generally the best place to start the net installation. Begin by spreading the top nets out on the batting cage floor in the position where they actually will be used.

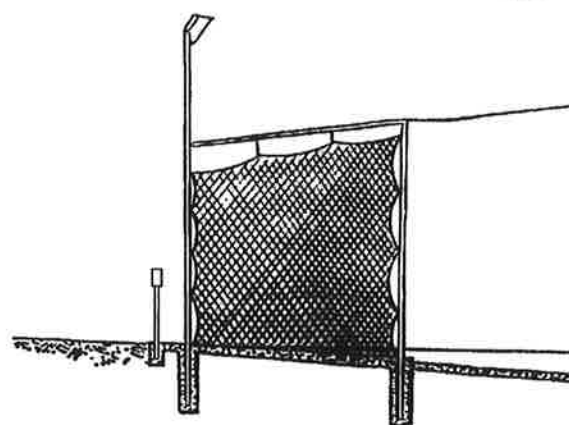
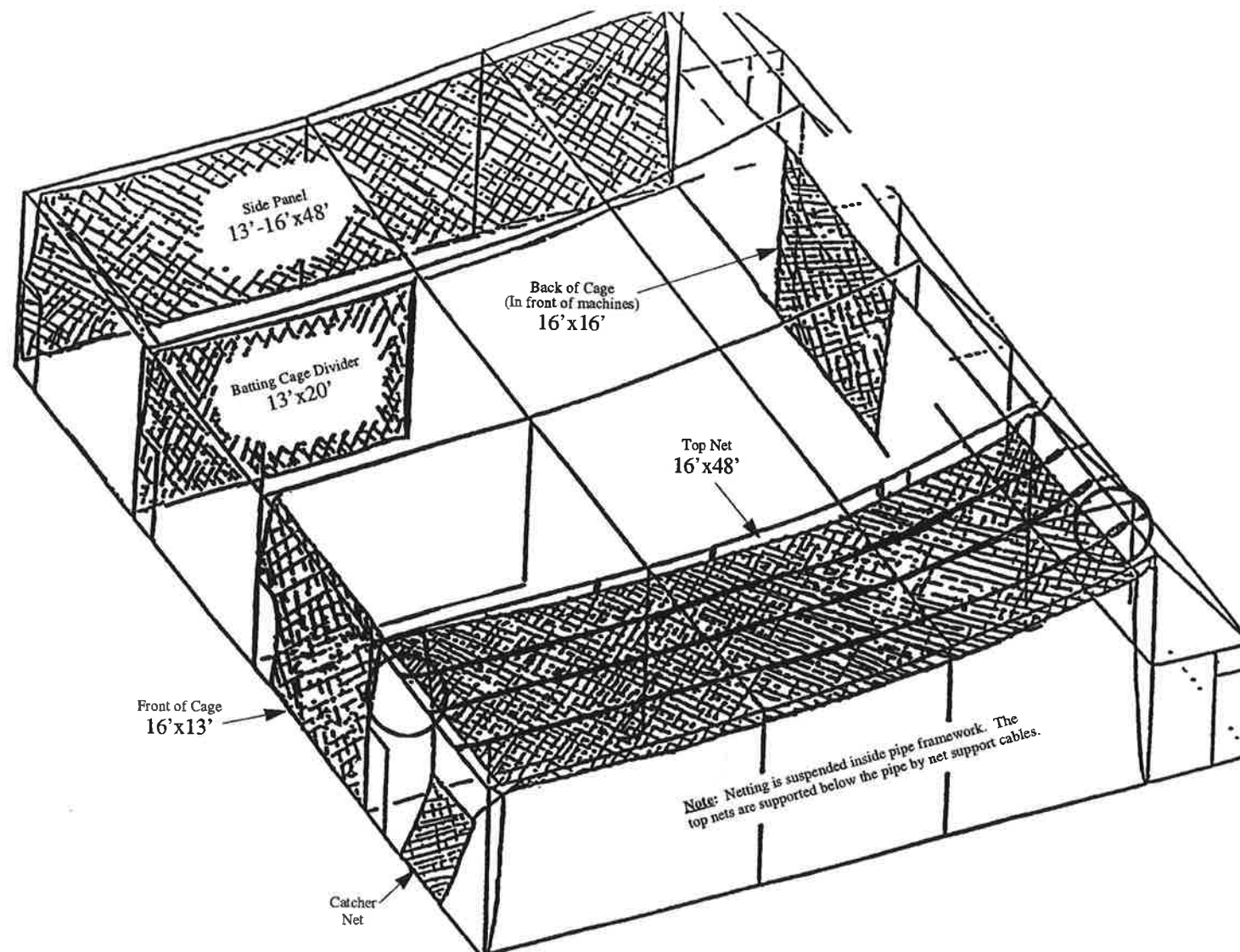
Temporarily suspend each top net at a convenient working height (usually a little below shoulder level or 4 1/2' to 6') by tying the corner of each net to its nearby post with twine, tie wire, rope or the net corner ropes, "pigtails", themselves. This will put the nets at a convenient height for splicing without the need for a tall ladder. Allow the nets to stretch for awhile, if necessary. Temporarily tie the corners of adjacent top nets together and make several temporary ties along the seam between the nets being careful to assure that net material is evenly distributed prior to permanent fastening. Keep in mind that sagging in the top nets will eventually be taken up after joining the top nets and raising the nets to final height.

Seams must be carefully tied together, temporarily at first, in order to insure an attractive permanent splicing that is evenly distributed. During temporary splicing, uniform distribution is generally more easily obtained by tying each successive splice at the midpoint of two previous splices. It will be helpful to tie up the nets temporarily at the divider posts.

The divider nets and front nets can now be placed in their proper positions. The side nets, as well as the divider and front nets, should be oriented in their proper positions as to size and shape. **Note:** The side nets are tapered from front to back (13' to 16'), take care in laying out these two nets in their proper position to insure that the tapered edge is located to the top and that the ends are matched for the correct lengths. Temporarily tie the corners of the adjacent nets together and make several temporary ties along the length of the seam being careful to assure that net material is evenly distributed along the seam prior to permanent fastening. (Past experience indicates that the divider net is the trickiest net of all in obtaining even distribution of netting material during installation).

The batter's area nets are now almost ready for permanent fastening to one another along the top seams with hog rings at 4" maximum spacings between hog rings, provided that the nets are evenly distributed along their seams. Generally it is best to start at an upper front corner and tie the pigtails of two adjacent top nets in a knot with the divider net pigtail and place hog rings about two feet along the seam of the three nets. Then tie the pigtails of the two adjacent front nets into the knot made up of the divider net and top net pigtails and hog ring at 4" maximum spacings between hog rings, the vertical seam of the two front nets and the divider net together for about two feet. Use the heavier front net pigtails to suspend the net assembly from the support frame. Now work your way out to the end of the top divider seams, and then work across the top front seams. Hog ring all top seams permanently before going on to the vertical seams.

When hog rings are used, be careful not to cut into the cords of the nets. After installation with the hog ring tool, squeeze each ring with pliers to tighten ring firmly to rope and to eliminate protruding sharp points. A light rope, such as 5/16" or 1/4" black braided polypropylene, can also be used to join nets.



Side view of Batter's Area

Notice that netting is suspended within pipe framework rather than connected directly to it.

Important Note: Do not attempt to bind the top nets directly to the pipes. This net system is hung from 1 foot to 3 feet below the pipe framework. At the low end, framework is 14 feet high and the net is 13 feet high. At the high end, the framework is 19 feet high and the net is 16 feet high. This is not a mistake. It is by design.

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Netting Installation Instructions

VERTICAL SEAMS:

After all the top seams are fastened, raise the entire net assembly while working down the vertical seams until the assembly is in the approximate final installation height. This can be done by sliding the temporary ties up the posts a little at a time using a 2x4 to push the knots at each post or by rigging ropes over the top of the cross rails to lift the net assembly a little at a time. The net assembly should be raised for fastening of vertical seams. Vertical seams between the side nets and cage front nets, and between divider nets and cage front nets, should now be fastened together with hog rings using a 4" maximum spacings between hog rings, being careful again, that netting material is evenly distributed. Note that at door locations, only the divider net and one of the cage front nets should be fastened together along the length of the doorway openings.

NET ATTACHMENT TO BOTTOM RAILS:

Raise the netting assembly until the bottom of the netting is slightly above the bottom rails (ideally 2" to 6") and tie it up at the top corners and top cross rails of the cage to support it. This position is only temporary so that the bottoms of the nets can be properly located. Now pull the bottom net down and fasten the net bottoms to the bottom rail using plastic coated tie wires wrapped twice around bottom rail and net edge ropes at 6" to 8" intervals (see illustration). Follow this same procedure along all bottom rail locations and around the gate openings, except doorway bottoms. After the bottom is fastened, readjust the top nets to their final height.

NET ATTACHMENT TO DIVIDER POLES

The divider nets should be attached to the poles in front of the batter with plastic coated tie wires spaced roughly every 36". An alternative method would be to purchase (locally), some form of padding material, such as that used for goal post in soccer or football, and lace the divider net in with the padding material. **Note:** These padding materials can be both costly and hard to find but will cut down or control the amount of balls ricocheting off the poles.

DOORWAY CUT-OUTS:

Cut out the openings for the doorway and weave a rope through the cut-out net edge (as explained later), and then attach the net edge to pipes surrounding doorways with plastic coated tie wires spaced at 4" intervals or with rope lacing. Place chain link fence within the swing door.

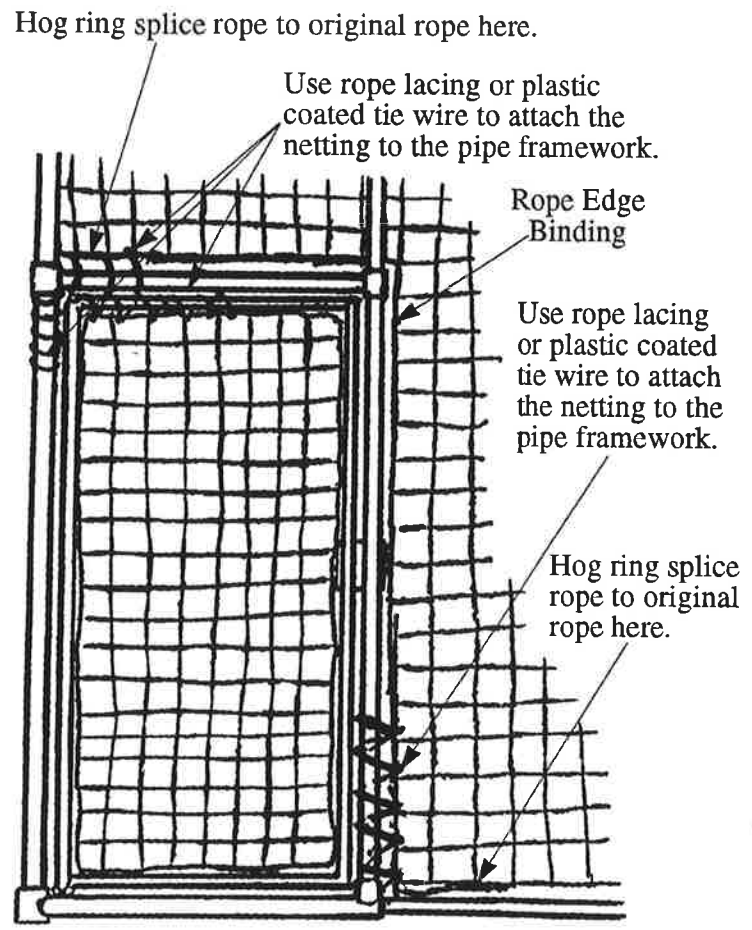
NET CORNERS ATTACHMENT:

All net corners should be attached to adjacent poles using plastic coated tie wires or ropes. Do not tie nets directly to the poles so that stress concentrations will be avoided. **Note:** The top nets are suspended one to three feet below the frame work and are not tied directly to the top rails.

FINAL NET POSITIONING AND ATTACHMENT:

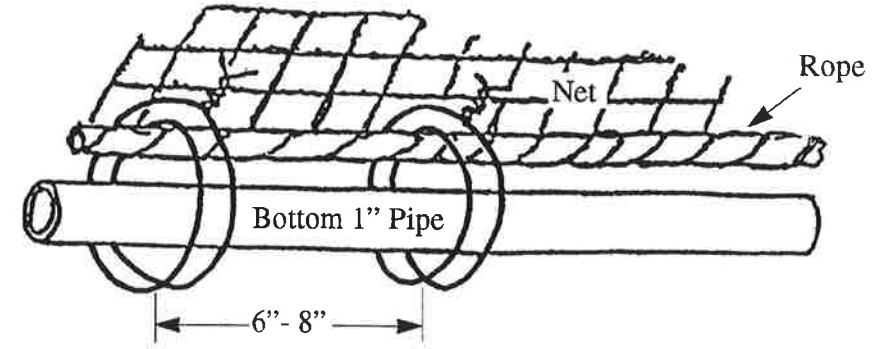
Observe the sags and distortions in the top nets and correct by repositioning the net or adding appropriate net support cables. Once the desired result is achieved, securely fasten the top net edge ropes to the upper rails of the pipe frame with rope or tie wire aerials keeping in mind that the top nets are not directly attached to the upper rails but are suspended 1' to 3' below them. All top net support cables should be attached at this time.

IMPORTANT!!! Tie wire aerials should not be multi-looped between top rails and net rope bindings. They should, by design, break away from the rails if severe loading occurs to prevent damage to the nets and framing.



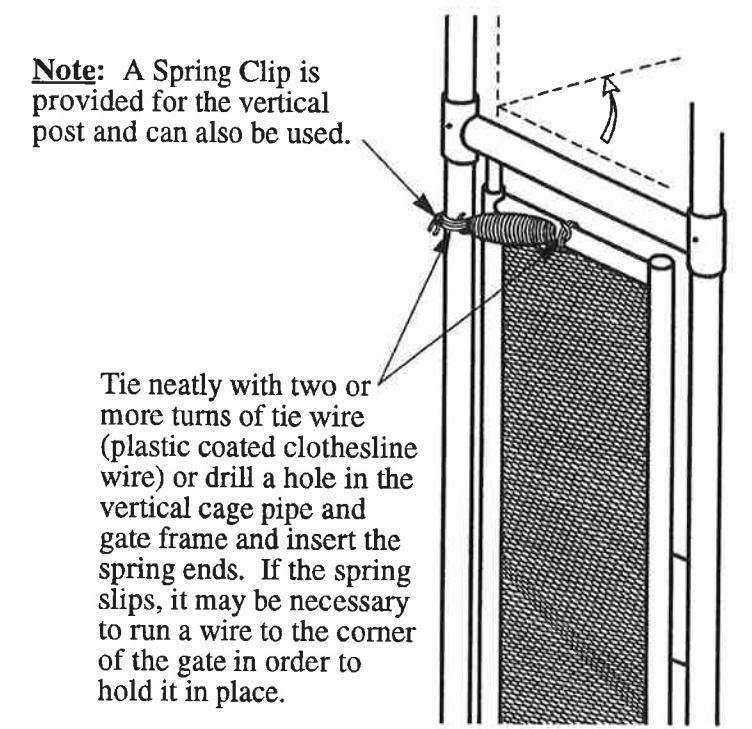
Doorway Cut-Out

Cut the door out of the front net panel and use lacing techniques to rebind the net edges around the door entrance. Then, place chain link fence within the swing door.

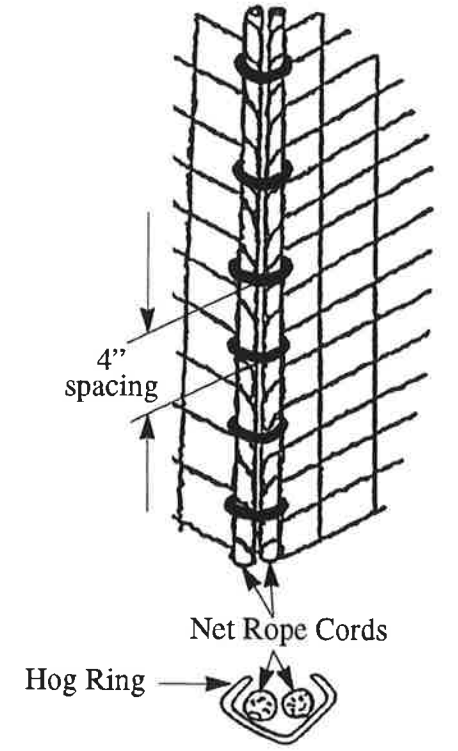


Net Attachment to Bottom Rails

Loop twice around pipe and twist tight. Do this only on the bottom 1" pipe and around the the gate openings.



Tie neatly with two or more turns of tie wire (plastic coated clothesline wire) or drill a hole in the vertical cage pipe and gate frame and insert the spring ends. If the spring slips, it may be necessary to run a wire to the corner of the gate in order to hold it in place.



Joining Seams

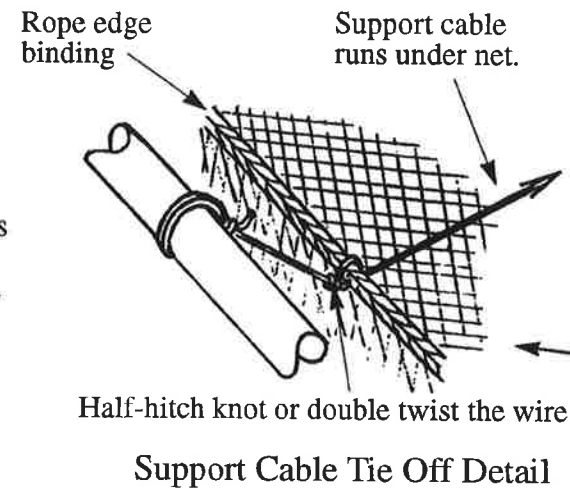
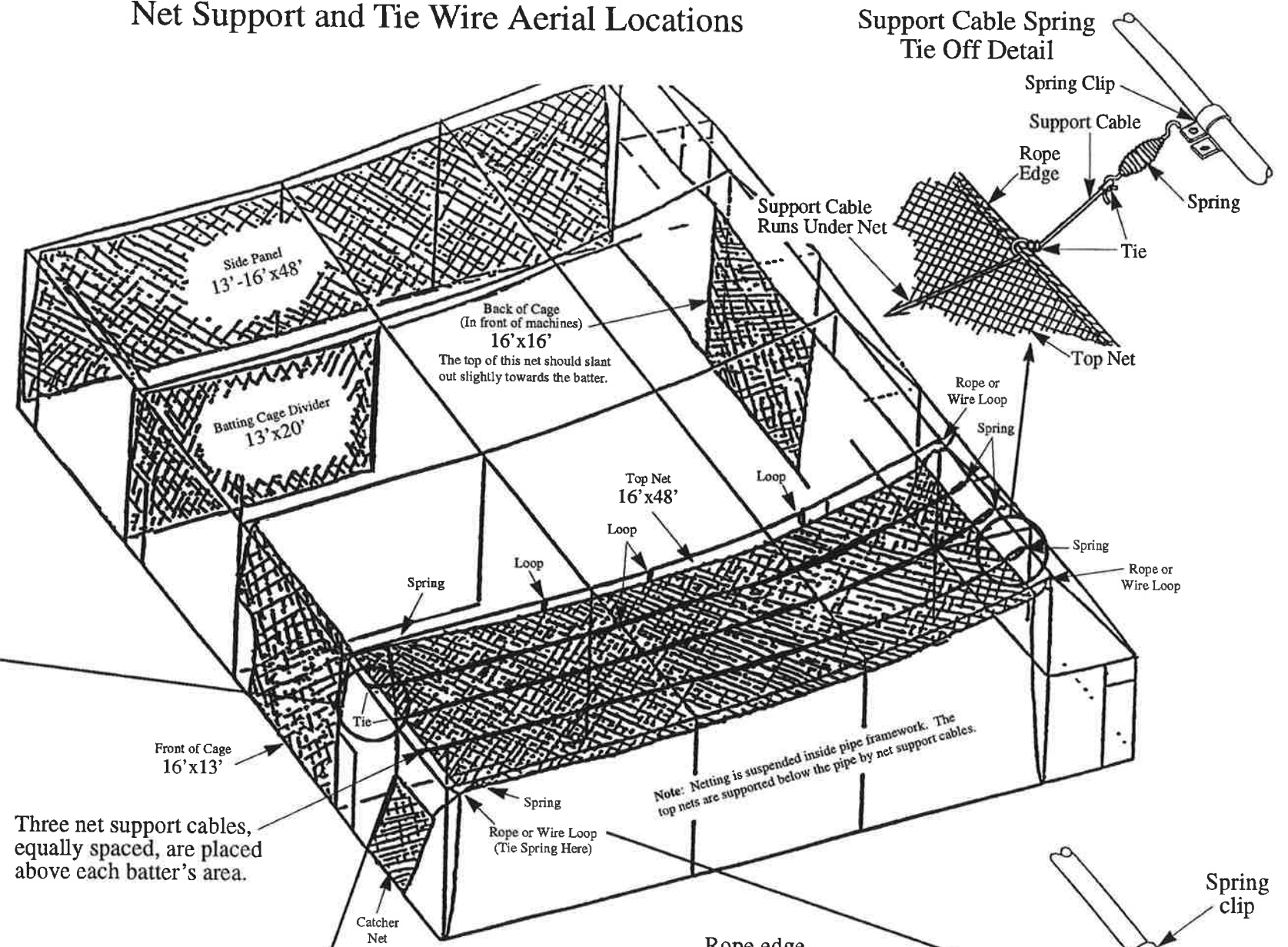
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Netting Installation Instructions

NET SUPPORT CABLES:

Support cables attached to the cage front and machine front top cross rails and are especially necessary at locations where occasional snow loads or ice loads might occur and load the net assembly. They are used to take up excessive net sagging between the batter's station. Normally, three net support cables are placed above each batter's area, equally spaced to give a "pillowing" effect or less sagging look and are spring loaded at the machine front, top cross rail (see illustration). The number and location of attachment are optional and depends on your geographical location. **Note:** The same plastic-coated, stranded steel clothesline wire is used for net support cable as well as for aerials and tie offs. **Important:** Pass support cable underneath top net and around rope binding at each end of net; use only enough tension to take sagging out of top net.

Net Support and Tie Wire Aerial Locations

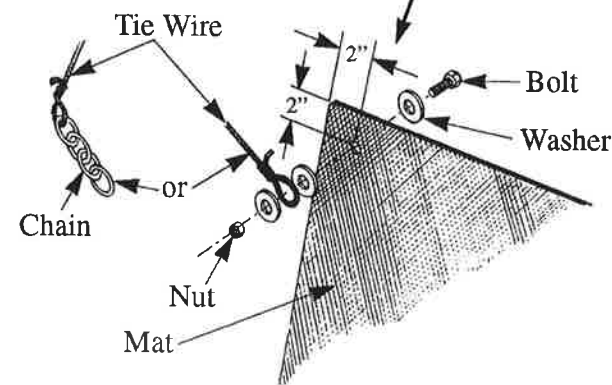


IMPORTANT: Support cables or aerials should not be multi-looped between top rails and net rope bindings. They should, by design, break away from the rails if severe loading occurs to prevent damage to the nets and framing.

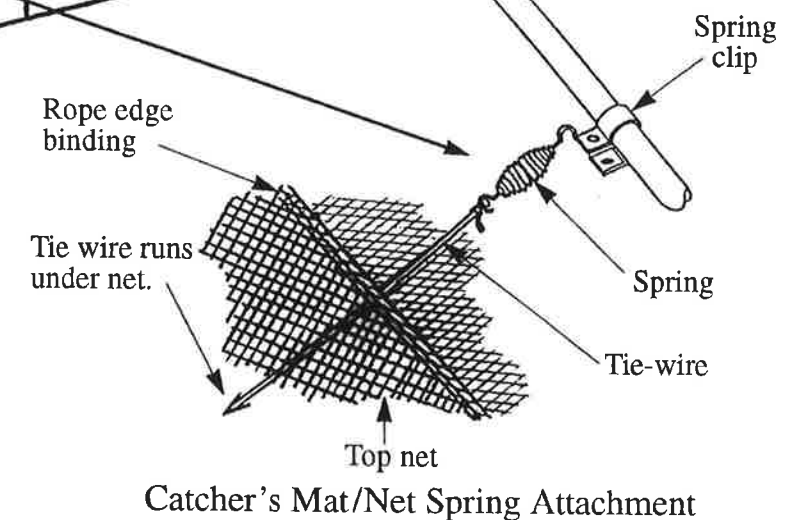
CATCHER'S MAT/NET ATTACHMENT

The catcher's mat/net placement is centered in the cage and hung about one foot inside of the cage front net with an angle sloping toward the machine from bottom to top. It is to be suspended from its top corners by tie wire aerials that are springs loaded. This will create a recoiling effect of the catcher's mat/net and help to deaden or stop the pitched balls. The springs are to be located three to four feet in on the divider upper rails from the fittings at the top cross rail of the cage front. A clip is wrapped around the rail and the spring is attached to the clip. A tie wire aerial attaches the spring to the corner of the mat/net. The tie wire aerial should be run down under the net rope bindings at the divider seam and through the nets. For catcher's nets, simply tie pigtailed to tie wires. For catcher's mats, it is best to tie an eyelet into the tie wire end or attach a small length of chain to the end of the tie wire and then clamp it between a washer set with a bolt through a hole in the corner of the mat drilled at least 2" in from the top and side of the mat. The bottom corners can be done the same way as for attaching the tie wire to the top of the mat. However, the bottom ties will not be spring loaded. They simply tie off to the bottom cage rail or it can be tied off to eyelets anchored into the concrete floor located about one foot in from the bottom rail. Rope or chain with a little slack left in it works best for this because tie wire, under the forces created, tends to pull loose from the rails or eyelets after awhile. **Note:** Leave a min. of 4" clearance between the bottom of the mat/net and concrete floor so that balls that have been caught behind the mat/net can easily roll out and back into the system.

Three net support cables, equally spaced, are placed above each batter's area.



Catcher's Mat Corner Attachment



Catcher's Mat/Net Spring Attachment

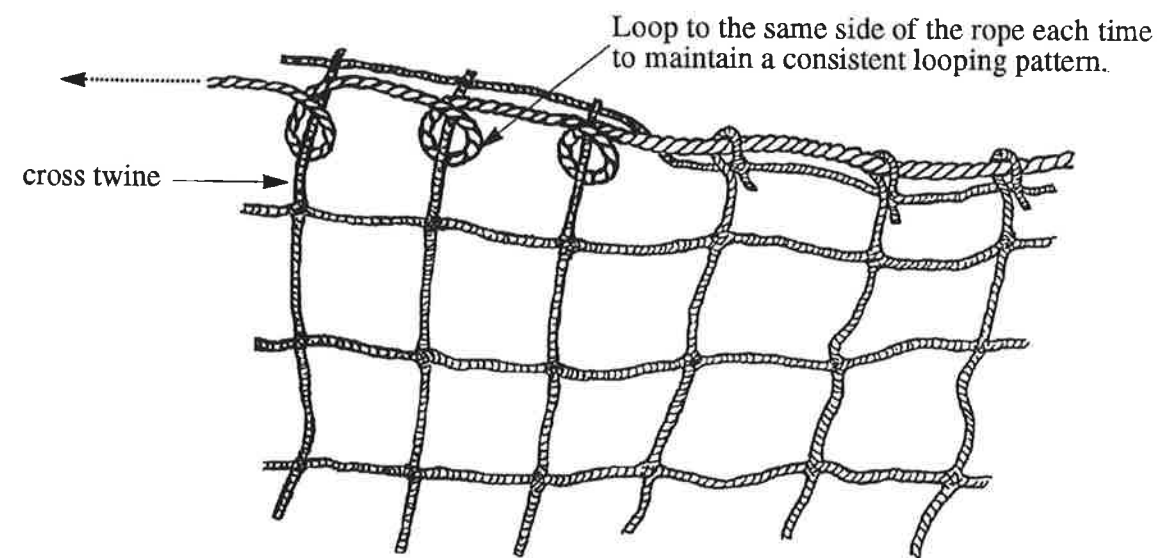
Netting Installation Instructions

NET EDGE ROPE WEAVING (LOOPING METHOD):

Net edge rope weaving is a simple yet important procedure that is performed in order to strengthen and stiffen cut net edges for attachment to pipes or other nets. Use 5/16" or 1/4" braided polypropylene rope. Select a row of net mesh along the cut net edge and loop the rope around the first cross-twine and travel from one cross-twine to another without ever crossing the rope or reversing the looping pattern. **Do not** change the looping pattern or else a non-uniform or bound seam will result. When finished, pull the rope tight which will cause the net to twist and invert resulting in a sturdy edge seam. In most cases when weaving netting, it is easier to weave a short distance of a few feet and then pull the rope tight. **Note:** Pulling out the slack in the rope when weaving long seams will cause the net to twist and start inverting. Be careful not to lose the proper position of the uniform pattern.

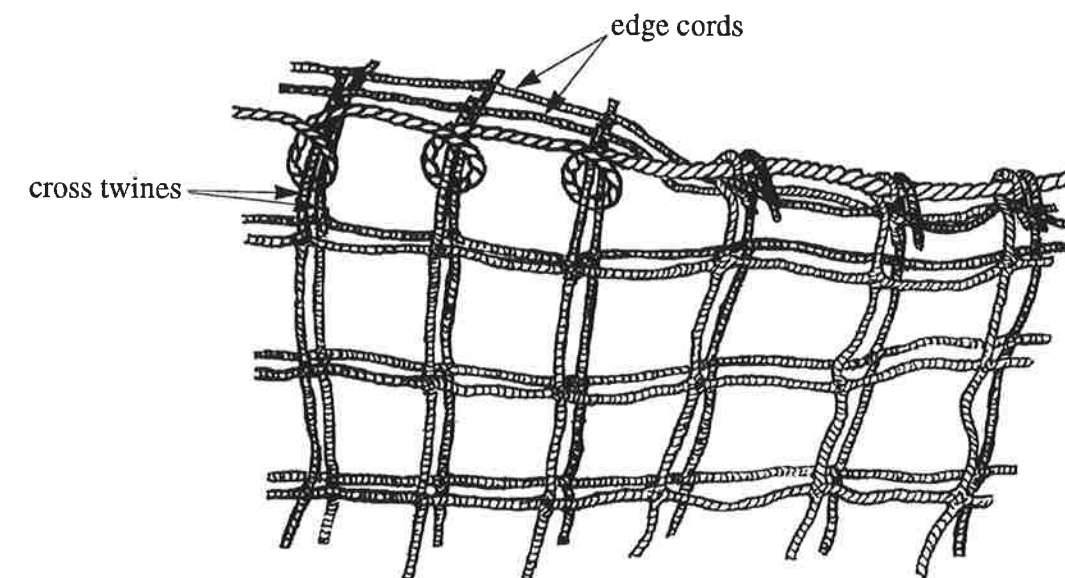
WEAVING TWO OR MORE NETS TOGETHER:

The easiest procedure for weaving two or more nets together is to place the net edges together, face-to-face, so that the edge cord of each net is adjacent to one another, and then follow the same looping procedure as outlined above for "net edge rope weaving".



Net Edge Rope Weaving

LOOPING METHOD Maintain a consistent uniform looping pattern and pull rope through as needed. Net edge will twist and invert creating a sturdy edge seam.



Weaving Nets Together

Weave two or more nets together by placing net edges together, face-to-face, so that the edge cords of each net are adjacent and then use consistent uniform looping pattern.

Hole Location for the Net at the Front of the Machine Area.

BALL OPENING CUT-OUTS:

An opening must be cut out of the machine area netting to allow balls to be pitched. Pitching machines must be placed in their proper position in order to accurately locate the ball opening. **Note:** If the machines can be adjusted to the correct pitch before the attachment of the netting, the ball opening cut outs can be found by simply pitching a ball into the netting and cutting a hole around the indentation left by the ball striking the netting.

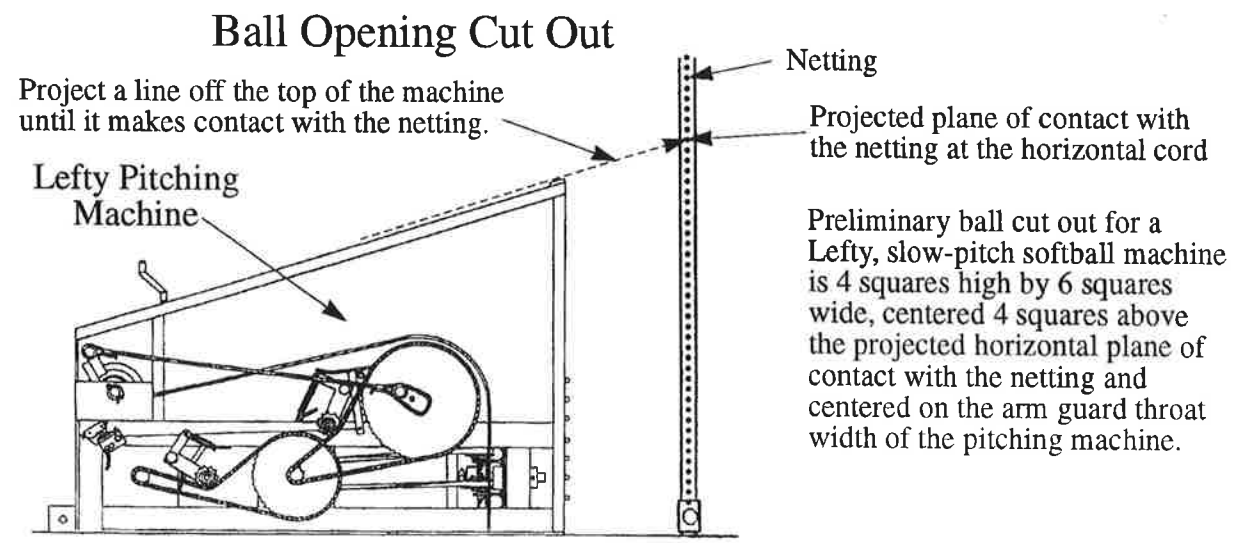
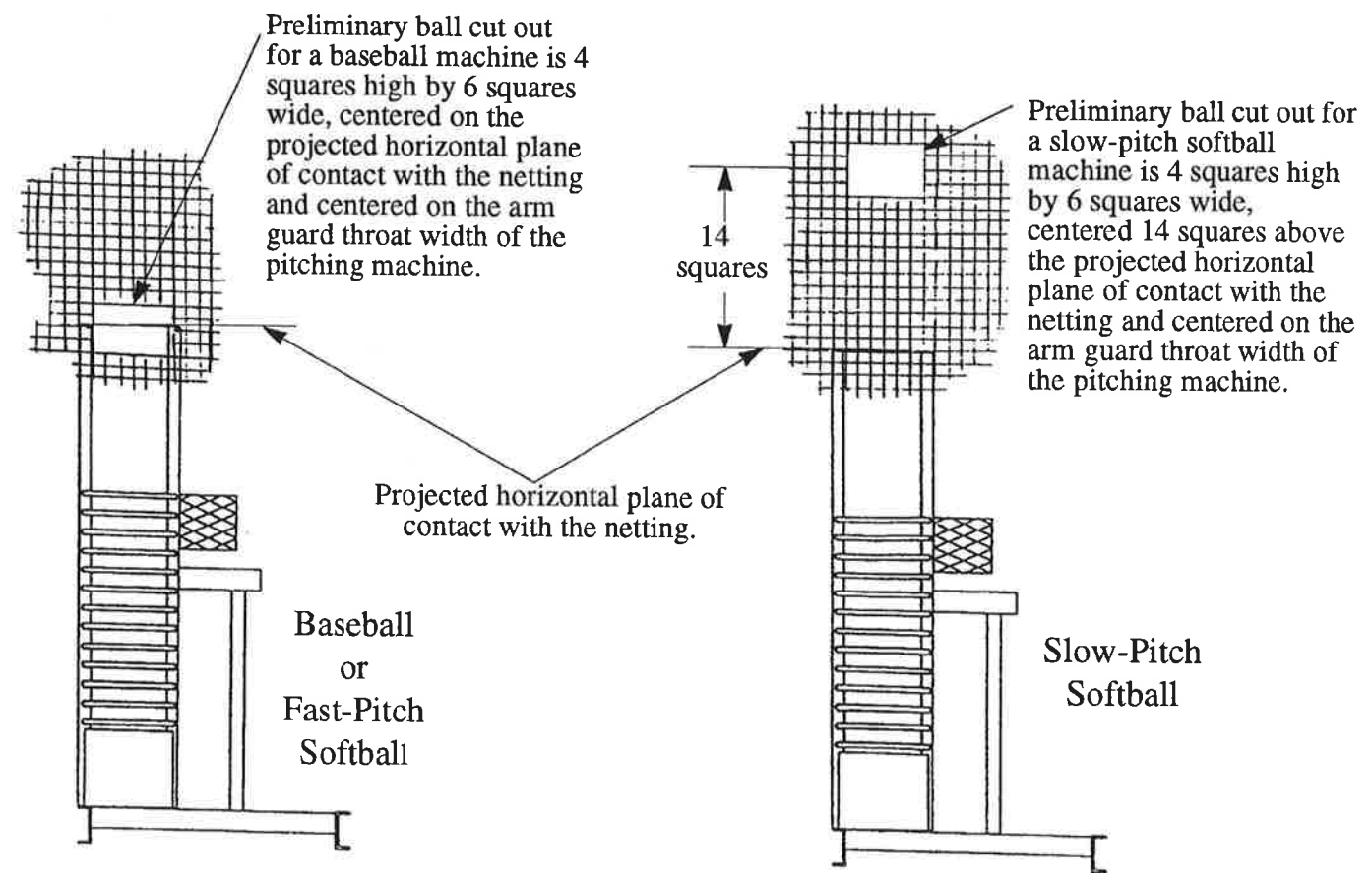
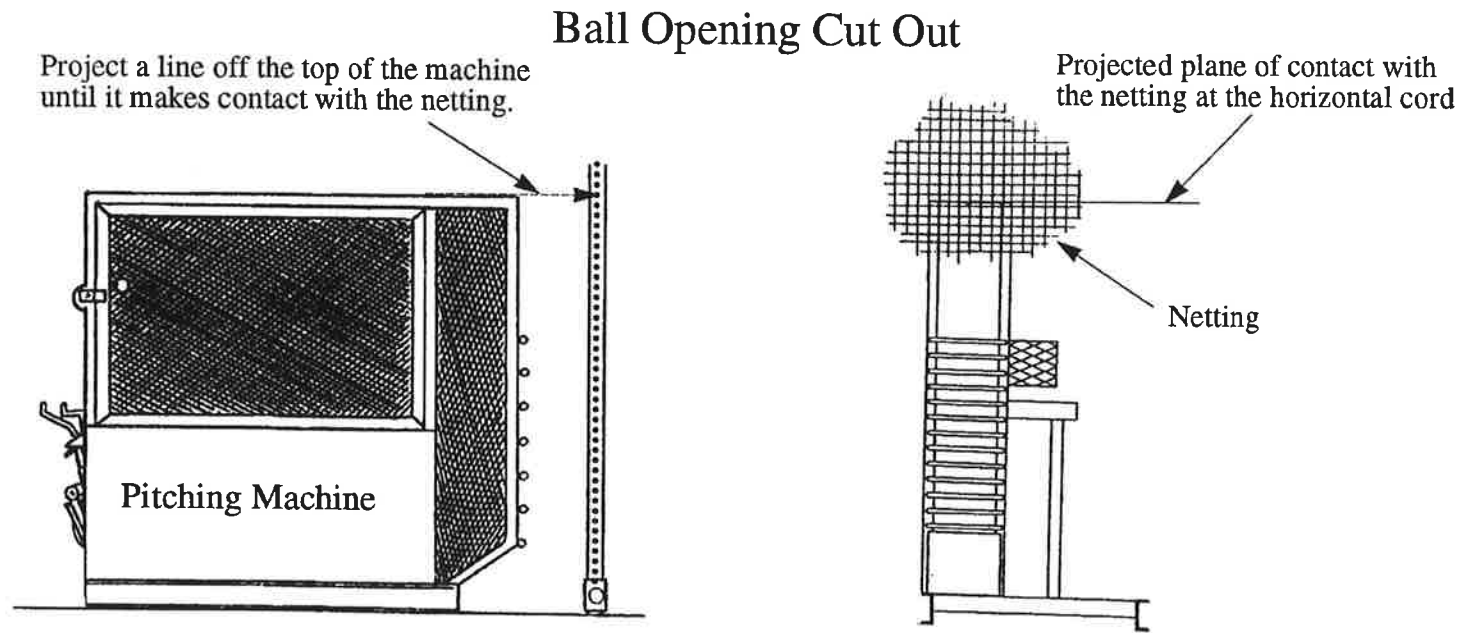
BASEBALL CUT-OUTS: To locate and cut holes in netting for baseball machines, project a line evenly off the top of the machine until you hit the netting. At this point, locate the nearest horizontal cord of the netting and then cut out two squares of netting above and below this intersection that are six squares wide and located directly in front of the throat or arm guard of the machine (see illustration). Adjust the pitching machine to throw through this 4-square high by 6-square wide hole and then cut the hole height (up or down) as required to obtain the desired pitch path. Generally, a 6-square high by 6-square wide hole is suitable.

FAST-PITCH SOFTBALL CUT-OUTS: Fast-pitch softball cut-outs are located in the same manner as baseball cut-outs.

SLOW-PITCH SOFTBALL CUT-OUTS: To locate and cut holes in the netting for slow-pitch softball machines, project a line evenly off the top of the machine until you hit the netting the same way as that for baseball. At this point, skip up 14 squares to the nearest horizontal cord of the netting and then cut out two squares of netting above and below this intersection that are six squares wide and located directly in front of the throat or arm guard of the machine (see illustration). Adjust the pitching machine to throw through this 4-square high by 6-square wide hole and then cut the hole height (up or down) as required to obtain the desired pitch height and path. Generally, a 6 to 8-square high by 6-square wide hole is suitable.

Note: Holes should be laced with 5/16" or 1/4" black braided polypropylene rope to strengthen the edges and corners of the netting to prevent ripping of the net by batted balls. Once laced, the hole should be drawn in using the rope to make the hole as small as possible but still allowing the pitched ball to clear.

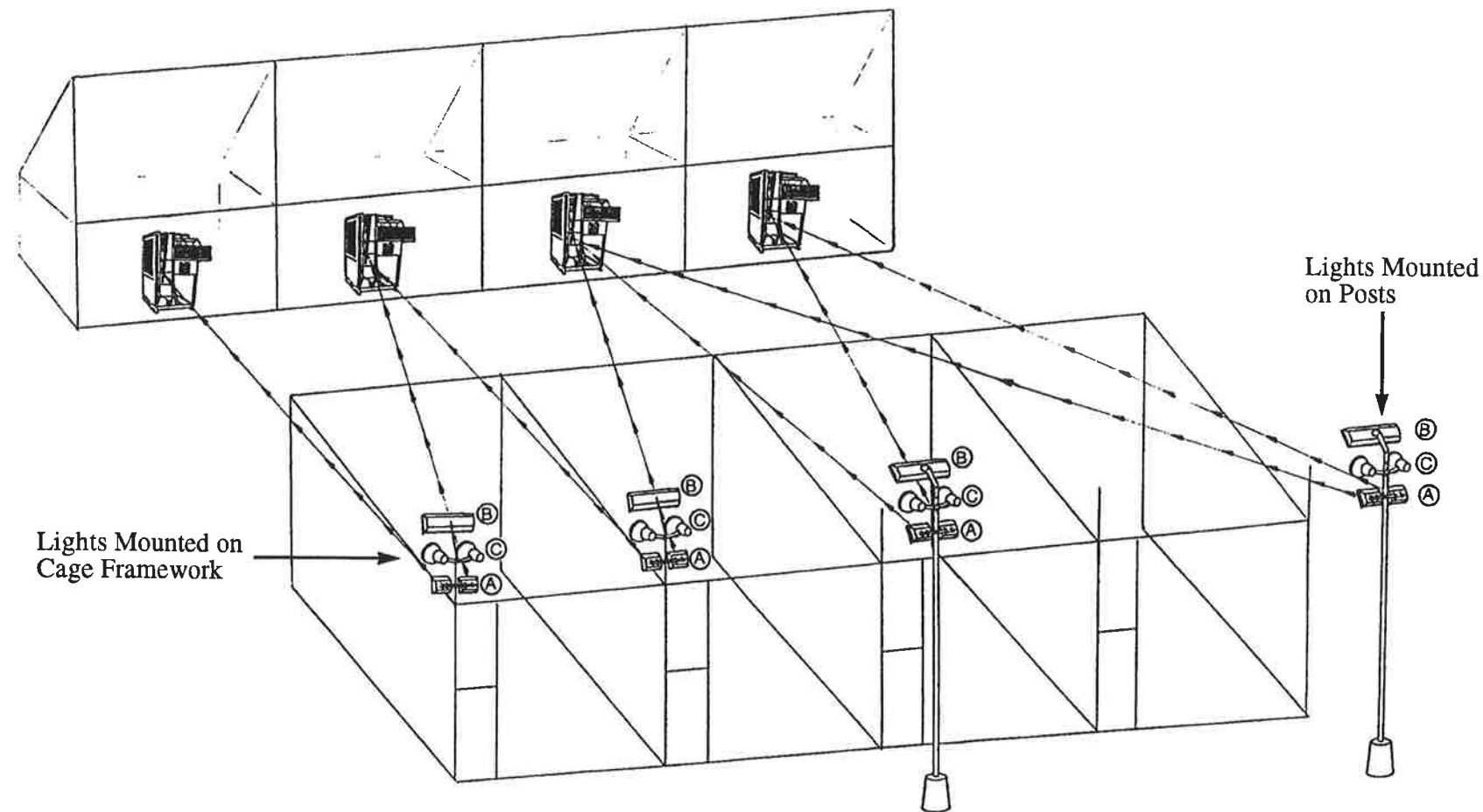
Note: To locate and cut holes in the netting for the Lefty machines, project a line evenly off the top of the Lefty machine until you hit the netting in a similar manner to that done on the commercial machines (see illustration). At this point, skip up 4 squares to the nearest horizontal cord of the netting and then cut out two squares of netting above and below this intersection that are six squares wide and located directly in front of the throat or arm guard of the machine. Adjust the pitching machine to throw through this 4-square high by 6-square wide hole and then cut the hole height (up or down) as required to obtain the desired pitch height and path. Generally, a 6 to 8-square high by 6-square wide hole is suitable.



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Batting Cage Lights & Net Protectors



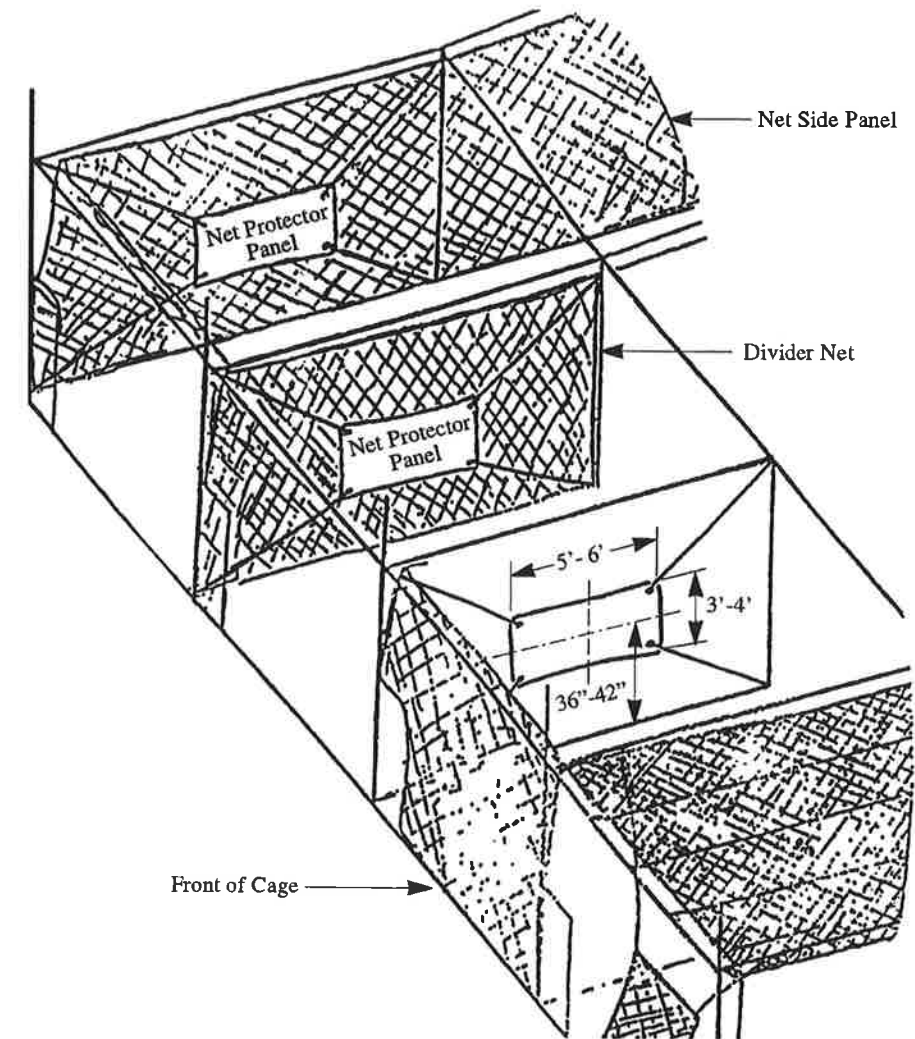
General Notes on Lighting

The total wattage of lighting needed for the batting cage area will be largely determined by the general lighting level of the area. For example, a brightly lit amusement park or arcade area may only need supplementary lighting in the batting cage area if they are within the brightly lit area. On the other hand, if the batting cage was in a dimly lit area of the same park, the floodlighting of the batting cage area would need to be brought up to the level of the rest of the park. The important thing to remember is that the batting cage area lighting should be at least as bright as the surrounding area lighting. In addition, it is important that the arm motion of the machines be easily visible to the batters. This motion is a major advantage of Master Pitching Machines and needs to be seen by the batters.

Lights are easily mounted to the vertical extensions of the rear batting cage posts as shown in the above drawing. Separate mounting posts may be needed for additional lighting.

Recommended Lighting Amounts

- (A) **Machine Lighting** - 300 to 500 watts of medium beam spotlight (not narrow beam spots) should be focused on each pitching machine from above and behind the batter. These lights should be positioned at a height of 15 to 20 feet from the ground.
- (B) **Batting Cage Area** - The general area should be floodlighted from lights placed as high as practical (20 to 25 feet or more) with a minimum of 500 watts of power per machine and a minimum of 2000 watts for a two machine range.
- (C) **Open Field Lighting** - For an open field batting range the lighting should include from 4 KW to 10 KW of medium beam spotlights (preferred) aimed at the field from approximately 20 feet above the ground on poles behind the batter's area. This is in addition to the lights needed in the batting cage area.



Net Protector Use and Installation

Net protectors are recommended for use in batting cages which are narrower than the desired 16' width specified by Master Pitching Machine, Inc. At widths less than 16' the batter is much more likely to have interference with the side nets and divider nets. The purpose of these protectors is to deflect occasional contact from a bat which could both damage the net and harm a customer.

The net protectors should be from 3' to 4' wide, from 5' to 6' long and made of canvas, plastic-coated fabric or similar material. They should be positioned with the center of each protector lined up with the center of home plate in each cage and centered vertically from 36" to 42". They are best held in place by ropes or light tie cables as shown in the above diagram.

Net protectors are available directly from Master Pitching Machine, Inc. as item #762211.

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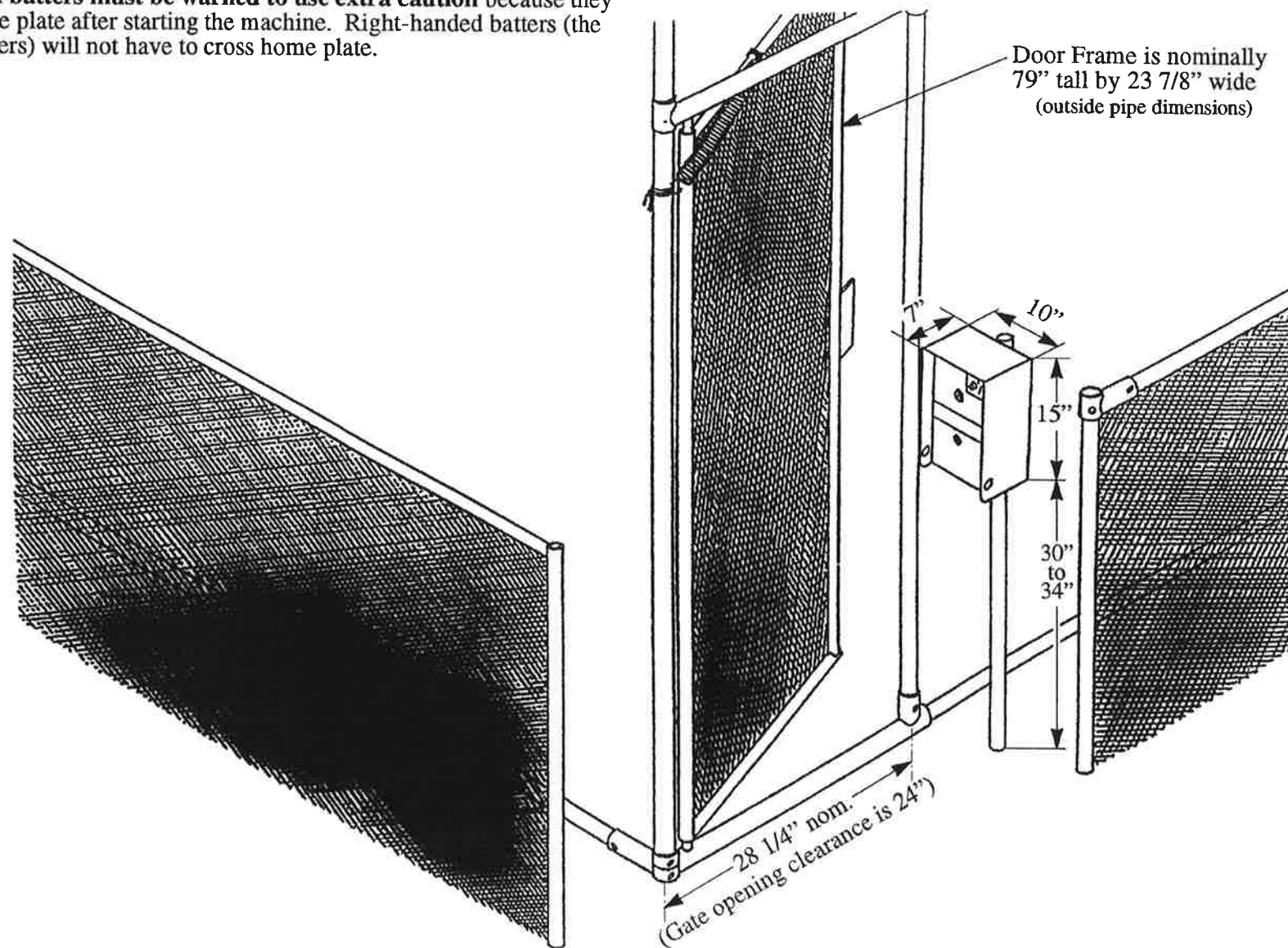
Coin Box Location and Cage Door Spring Installation

Coin Box Location

The coin boxes should be located uniformly, just a few inches outside the entrance to the batting cages. All entrance doors to the cages should be located to the batter's left side (facing the pitching machines) and should open inward.

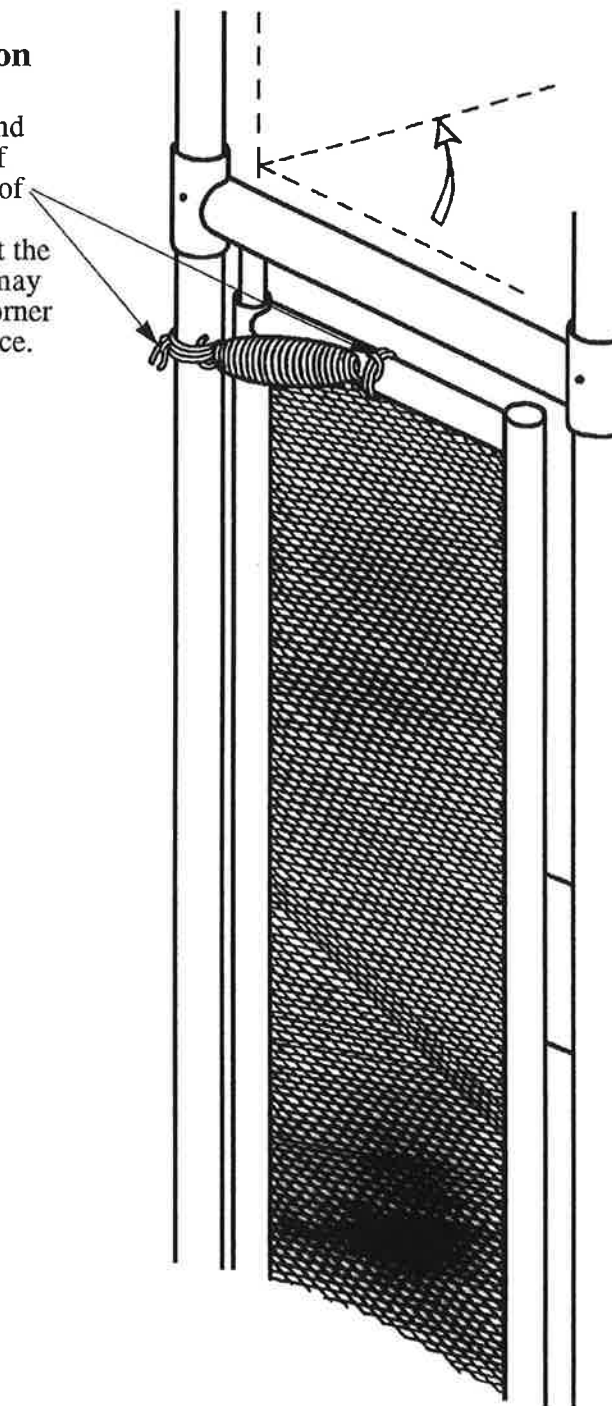
With the coin box properly located, outside the cage, the batter can operate the coin box easily with his right hand from inside the cage. Being outside the cage, the coin box is less likely to be damaged by a foul tip or by batters deliberately beating on the coin box with their bats. The coin box being located outside the cage also enables a parent or coach to "feed" the coin box from a safe position outside the cage while the batter is inside, prepared to bat.

All left-handed batters must be warned to use extra caution because they must cross home plate after starting the machine. Right-handed batters (the majority of batters) will not have to cross home plate.



Cage Door Spring Installation

Position spring as shown at right and tie neatly with two or more turns of plastic-coated tie-wire at each end of spring or drill a hole in the vertical cage pipe and gate frame and insert the spring ends. If the spring slips, it may be necessary to run a wire to the corner of the gate in order to hold it in place.



Chain Link Fence Requirements

Machine Area Suggested Chain Link Requirement

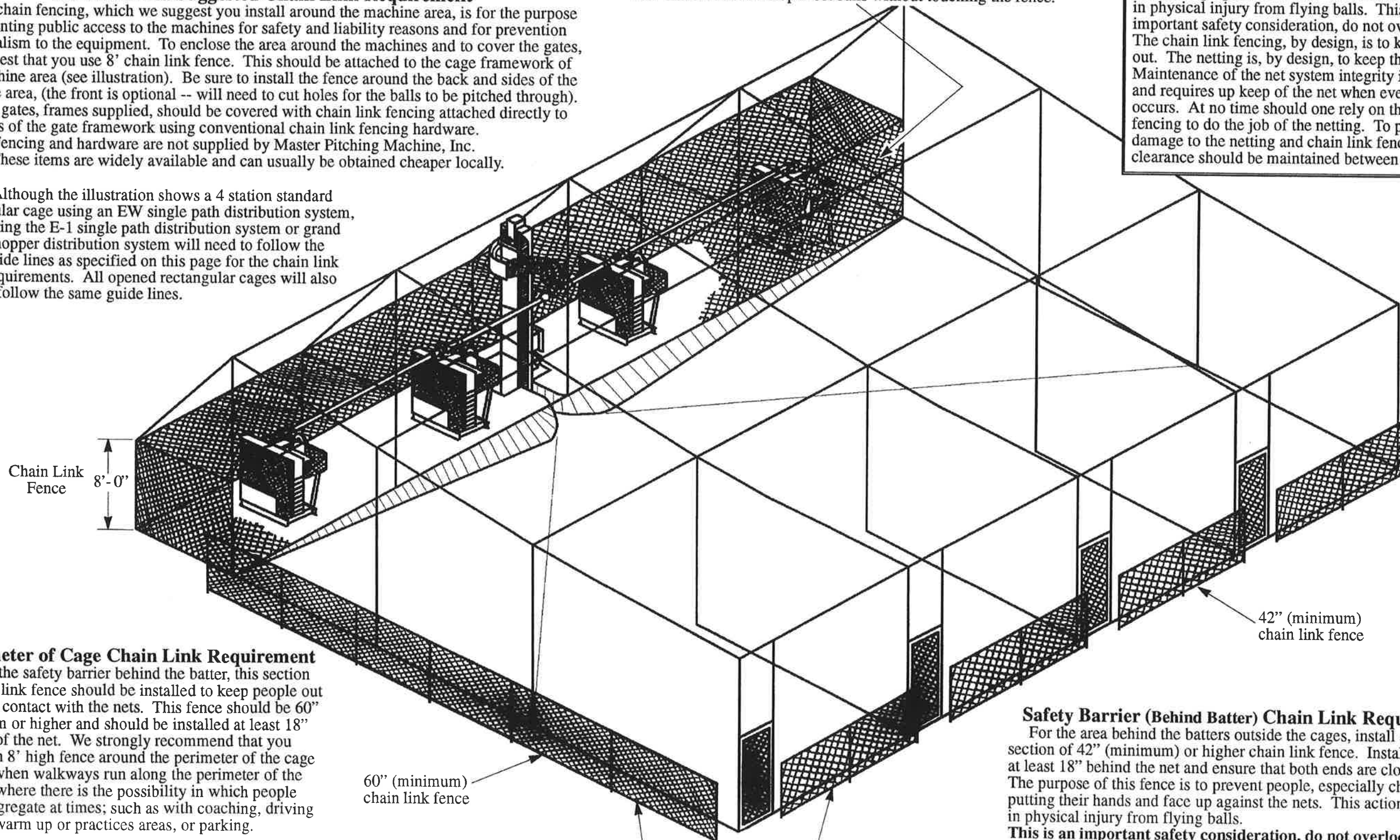
The chain fencing, which we suggest you install around the machine area, is for the purpose of preventing public access to the machines for safety and liability reasons and for prevention of vandalism to the equipment. To enclose the area around the machines and to cover the gates, we suggest that you use 8' chain link fence. This should be attached to the cage framework of the machine area (see illustration). Be sure to install the fence around the back and sides of the machine area, (the front is optional -- will need to cut holes for the balls to be pitched through). Batter's gates, frames supplied, should be covered with chain link fencing attached directly to the pipes of the gate framework using conventional chain link fencing hardware.

Note: Fencing and hardware are not supplied by Master Pitching Machine, Inc. These items are widely available and can usually be obtained cheaper locally.

Note: Although the illustration shows a 4 station standard rectangular cage using an EW single path distribution system, cages using the E-1 single path distribution system or grand central hopper distribution system will need to follow the same guide lines as specified on this page for the chain link fence requirements. All opened rectangular cages will also need to follow the same guide lines.

Note: When using chain link on the front of the machine area, the nets in front of the machines should be installed with a slight slope toward the batter. This will result in a separation between the fence and the net. The net should stop most balls without touching the fence.

The purpose of chain link fencing is to prevent people, especially children, from putting their hands and face up against the nets. This action may result in physical injury from flying balls. This is an important safety consideration, do not overlook it! The chain link fencing, by design, is to keep people out. The netting is, by design, to keep the balls in. Maintenance of the net system integrity is a must and requires up keep of the net when ever damage occurs. At no time should one rely on the chain link fencing to do the job of the netting. To prevent damage to the netting and chain link fencing an 18" clearance should be maintained between them.



Perimeter of Cage Chain Link Requirement

Like the safety barrier behind the batter, this section of chain link fence should be installed to keep people out of direct contact with the nets. This fence should be 60" minimum or higher and should be installed at least 18" outside of the net. We strongly recommend that you install an 8' high fence around the perimeter of the cage system when walkways run along the perimeter of the cage or where there is the possibility in which people will congregate at times; such as with coaching, driving ranges, warm up or practices areas, or parking.

Note: The posts, fence, and the hardware for this barrier are not supplied by Master Pitching Machine, Inc.

60" (minimum) chain link fence

Note: The chain link fence should run clear to the ground.

42" (minimum) chain link fence

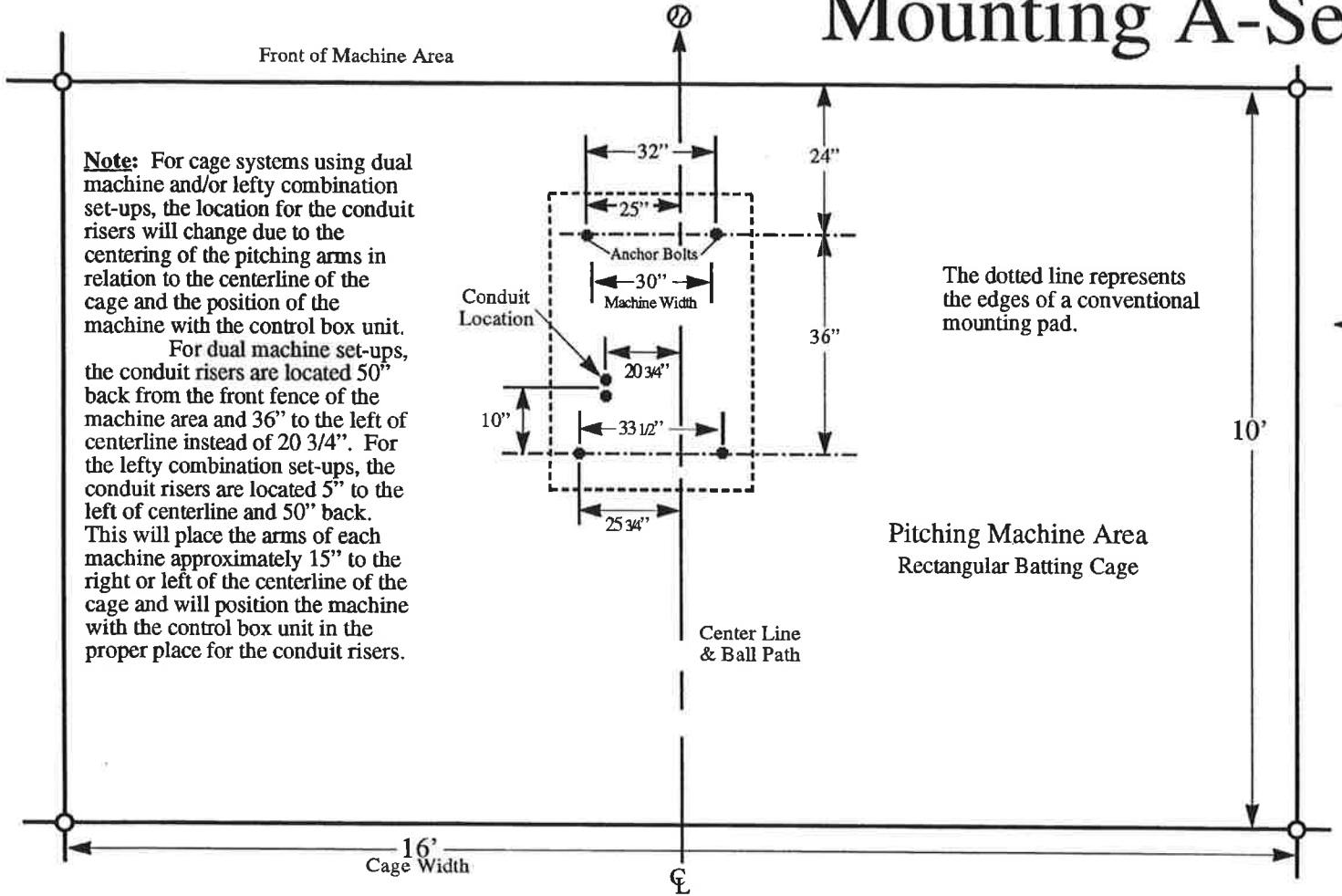
Safety Barrier (Behind Batter) Chain Link Requirement

For the area behind the batters outside the cages, install a 12' long section of 42" (minimum) or higher chain link fence. Install this fence at least 18" behind the net and ensure that both ends are closed off. The purpose of this fence is to prevent people, especially children, from putting their hands and face up against the nets. This action may result in physical injury from flying balls.

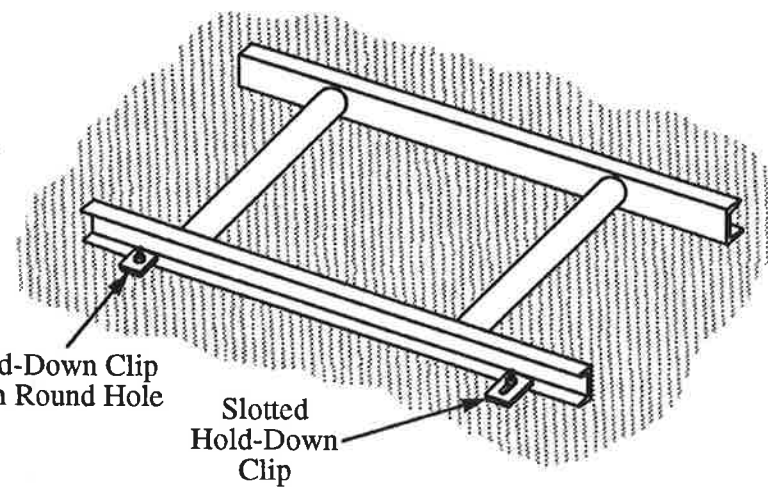
This is an important safety consideration, do not overlook it!!!

Note: The posts, fencing, and hardware for these barriers are not supplied by Master Pitching Machine, Inc.

Mounting A-Series & MA-Series Machines



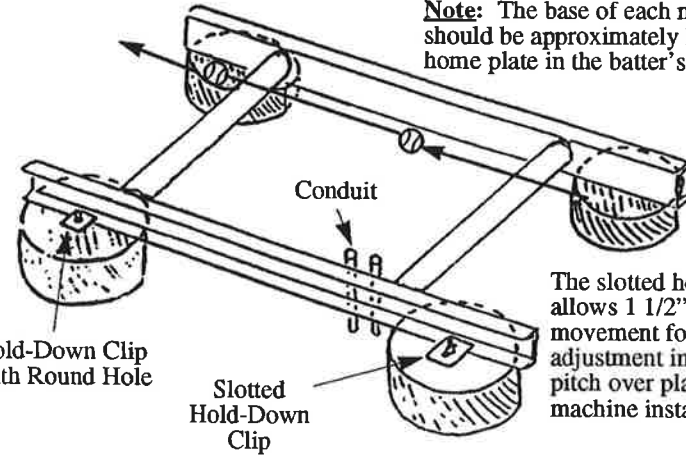
Note: The base of each machine should be anchored in place using the hold-down plates provided once the machine has been adjusted and set for the correct pitch.



The slotted hold-down allows 1 1/2" of lateral movement. This allows for minor adjustments in the aiming of the pitch over the plate during the machine installation.

Mini Pier Mounting

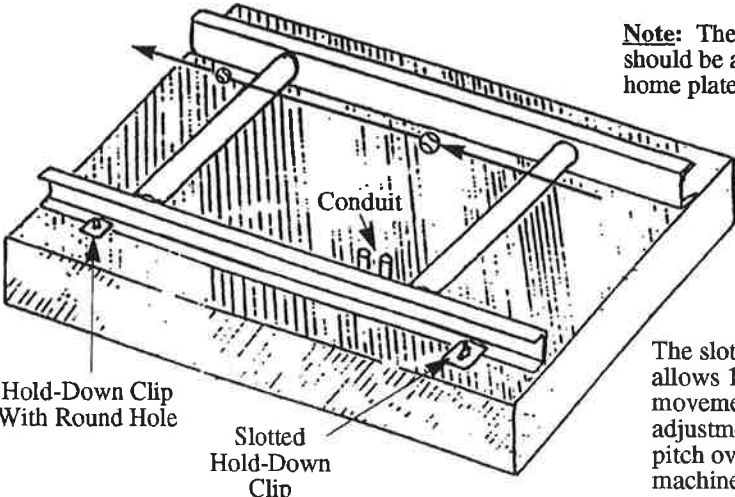
Note: Conventional Mounting Pad, Split-Pad Mounting, and Mini Pier Mounting Methods are used for cage designs not using a flat concrete machine area or for use with trainer machines.



Note: The base of each machine should be approximately level with home plate in the batter's box.

The slotted hold-down allows 1 1/2" of lateral movement for minor adjustment in aiming pitch over plate during machine installation.

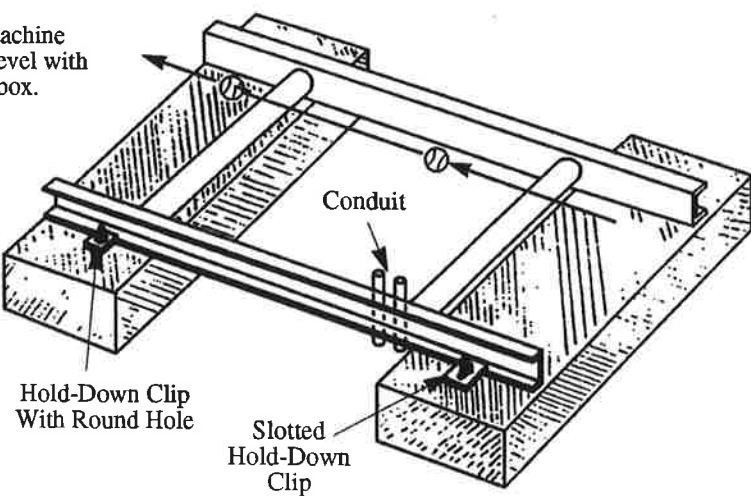
Conventional Mounting Pad



Note: The base of each machine should be approximately level with home plate in the batter's box.

The slotted hold-down allows 1 1/2" of lateral movement for minor adjustment in aiming pitch over plate during machine installation.

Split-Pad Mounting



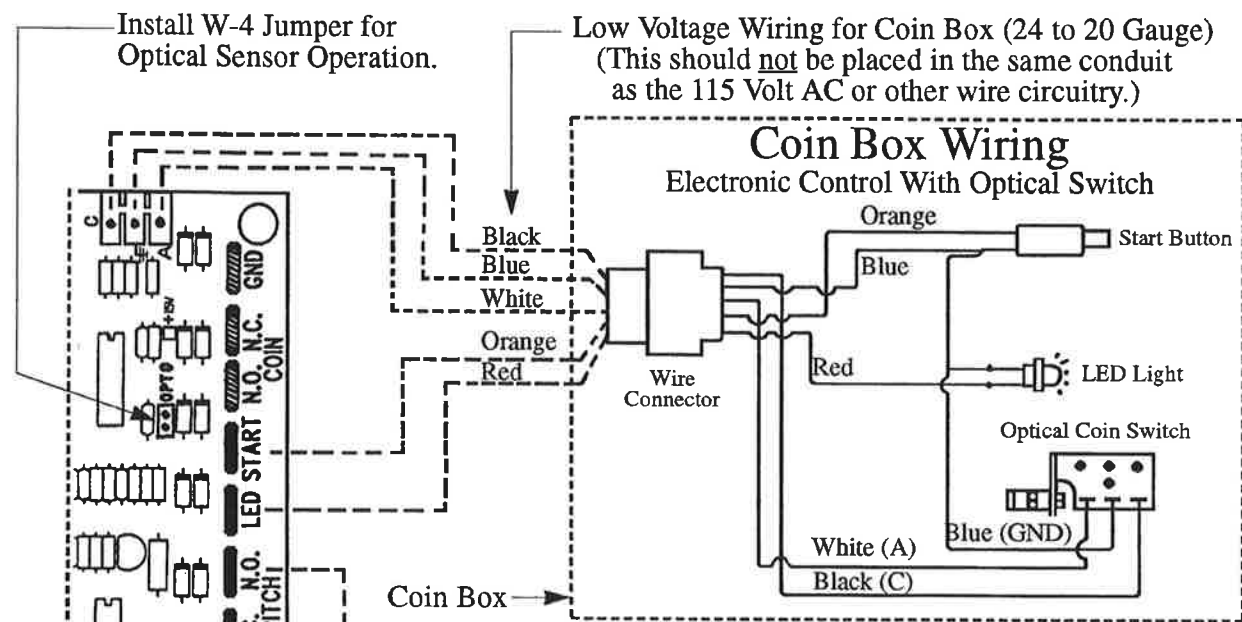
Instead of a conventional pitching machine mounting pad, it may be more practical to pour two small rectangular piers as shown above. This has the added advantage of allowing loose balls to get out from under the machine.

Prepare a conventional machine mounting pad or pier according to the above plans and dimensions. The pad may be a thin one just a few inches above the pitching machine area floor or a taller pier, if necessary, to raise the top of the pier to the proper elevation.

- To mount machine on a flat or sloping slab floor of pitching machine area:
- Step 1:** Pour slab according to plan. Install wiring conduit in place, according to the above plot plan, during slab installation. Layout the location accurately from centerline of the batting cage.
 - Step 2:** After the slab is poured, lay out the location of the anchor bolts for each machine. Drill the holes and anchor long anchor bolts made from 1/2" threaded rod in slab. Use grout, cement or bolt anchors to lock anchor bolts in slab.
 - Step 3:** Using stiff cement, form a 12" diameter pier around each anchor bolt. Carefully level the top of each pier so that the machine will sit level. Make the piers high enough so that a 4" diameter softball can roll under the machine base.
 - Step 4:** After the concrete has set, place the machine upon the piers. Install the hold-down clips and cut off the excess bolt length.

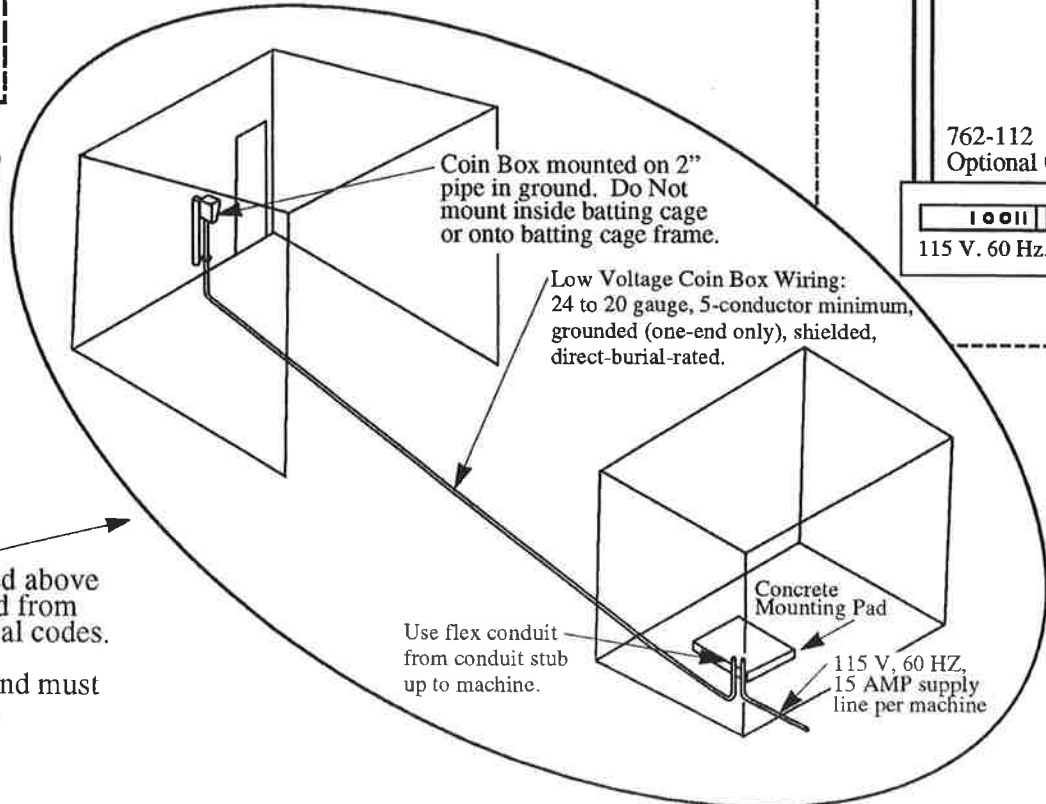
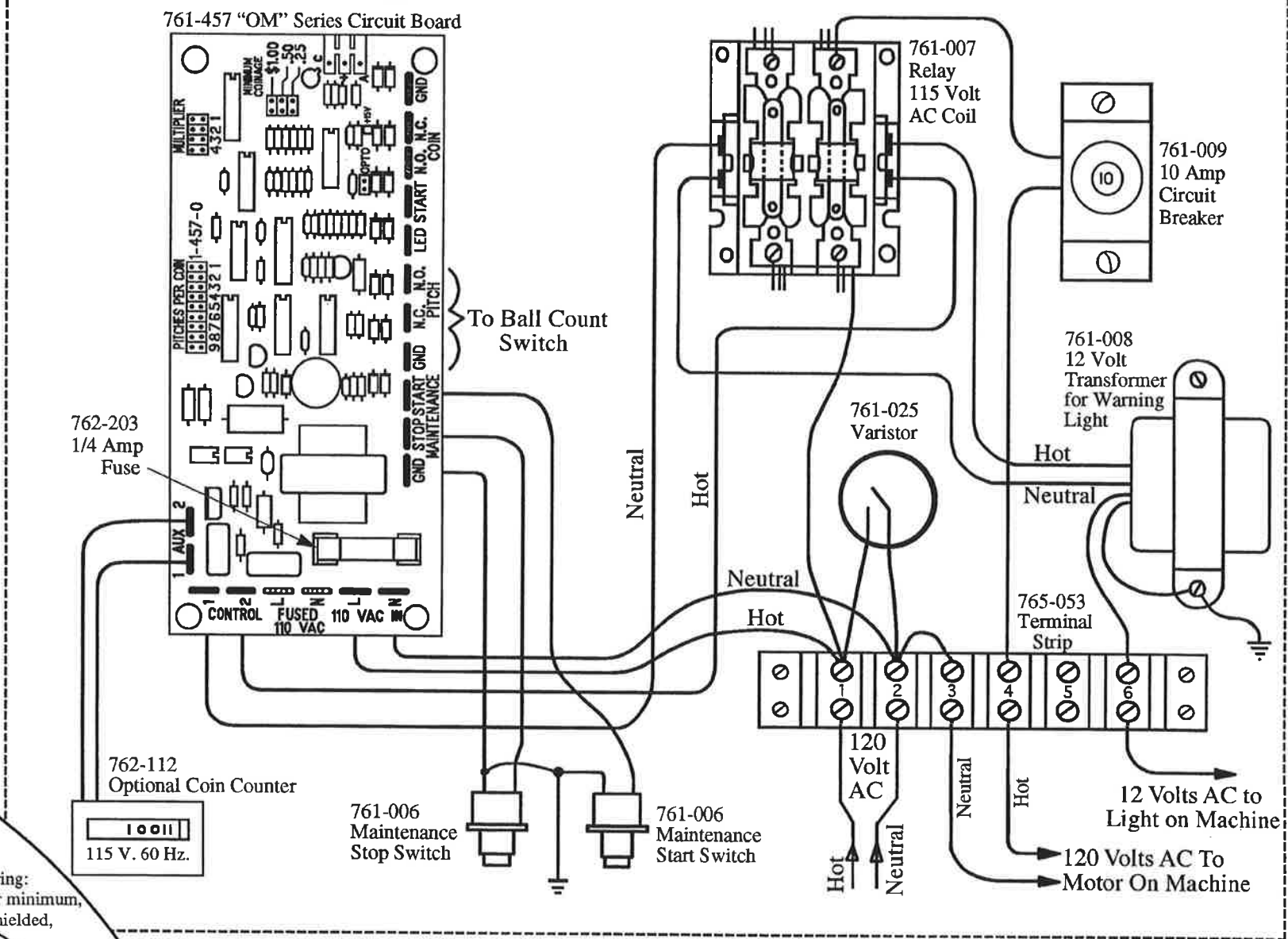
Master Pitching Machine

Electrical Wiring for Coin-Operated Pitching Machines



Important Note:
The wiring schematic at left applies to coin boxes with the optical sensor. (earlier model coin boxes with a coin switch are wired differently.)

Control Box Wiring Electronic Control for Models A-53, A-55, MA-4, MA-5 and MDL-2



Conduit Runs:
Note: All wiring may be routed above ground as long as it is protected from physical damage and meets local codes.
Conduit and wiring under ground must also meet local building codes.

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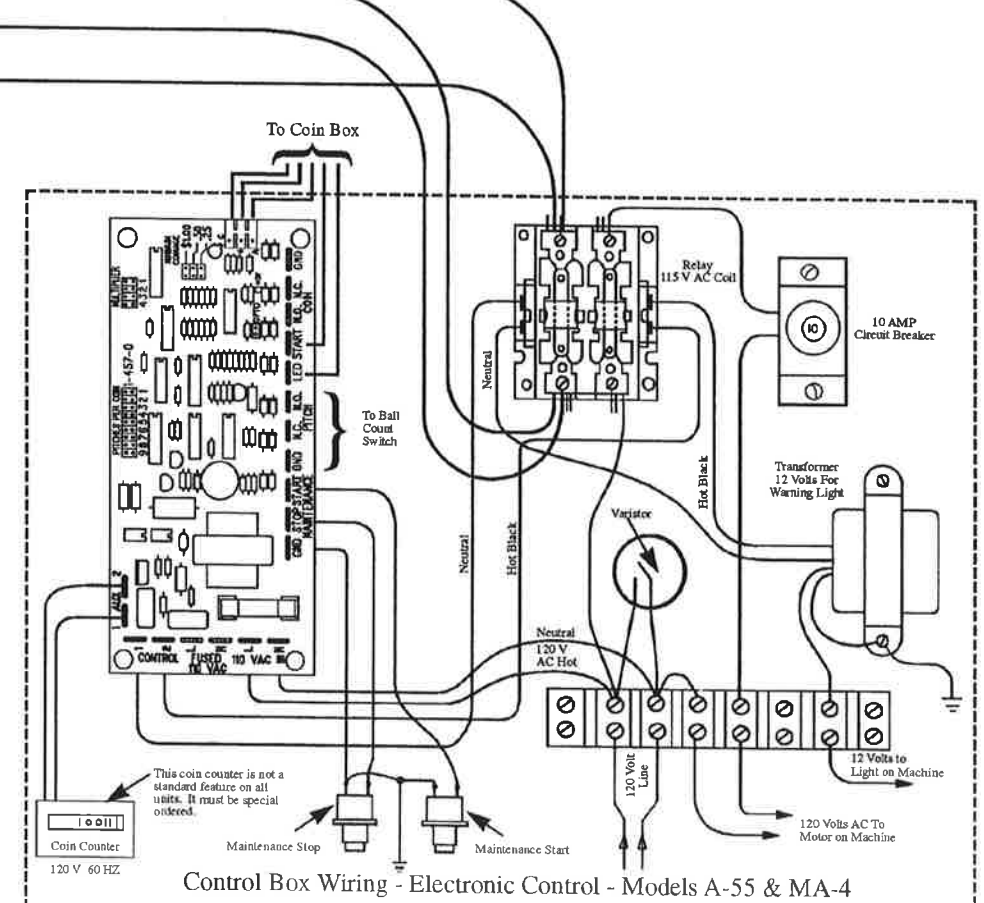
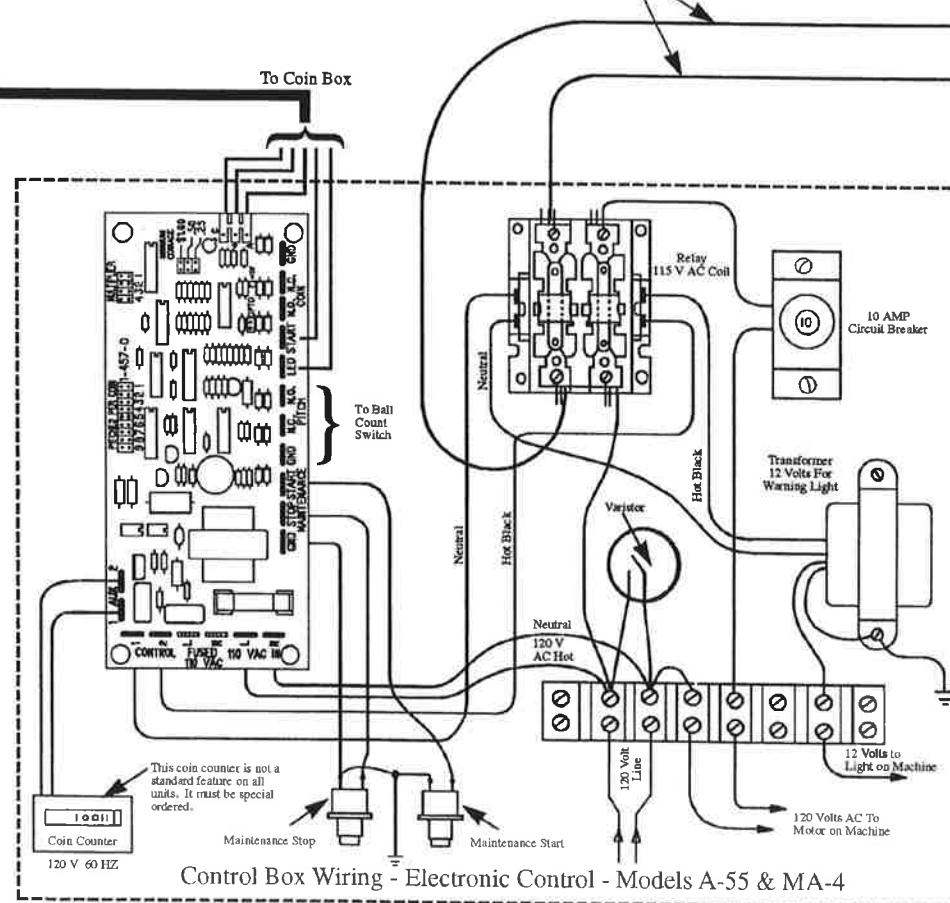
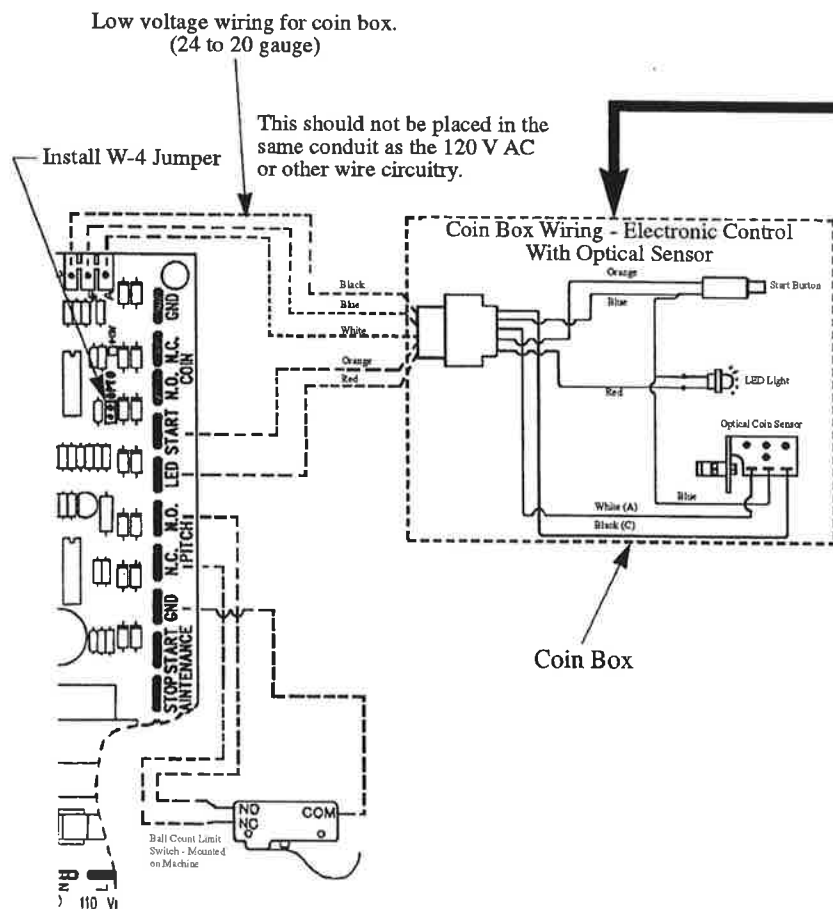
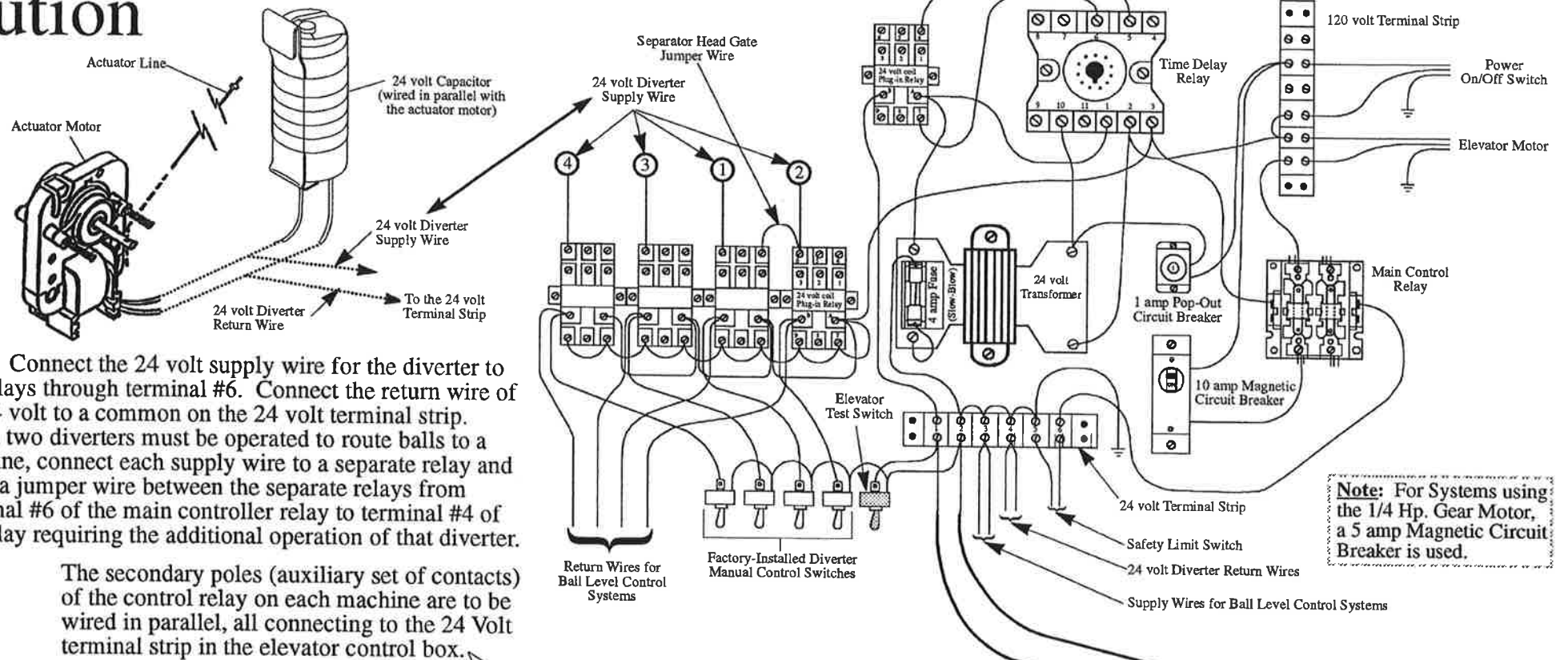
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Ball Elevator and Distribution System Controls

How the System Works

The relays in the pitching machines are connected in parallel to the time-delay relay control switch circuit in the elevator. This will cause the elevator to operate whenever any one of the pitching machines is in operation. This parallel wiring will also cause a time-delayed shut down of the elevator after the last pitching machine has stopped. The time delay will allow a sufficient amount of time for the elevator to clear the cage floor of balls. The delay must be determined by the operator and set by adjusting the central knob on the time-delay relay in the elevator.

The actual distribution of the balls to the various pitching machines is controlled by the diverter gate actuators which are switched by the 24-Volt plug-in relays in the elevator control box. These relays may be operated in any of three ways: automatically by the hopper bottom ball level control switch mounted in the machine hopper, manually by the switches which are shipped connected to the relay and mounted along the bottom of the control box or remotely by switches (not included) which may be mounted at a convenient location for the cashier or attendant.



Model EW Elevator Belt Tension Adjustment and Maintenance

Belt Tension Adjustment

The proper operation of the elevator requires the correct amount of belt tension. The belt tension may be checked in the following manner. As close to the center of the elevator as possible, grab a set of cleats between your thumb and index finger of a closed fist on each hand. With a firm grip pull the cleats and belt perpendicular to the elevator. When the belt tension is correct the back of the belt will be in a range from one inch past the outer side of the elevator to a few inches past the outer side of the elevator. If the belt cannot be pulled out to the edge of the elevator it is too tight and needs to be loosened. If it can be pulled more than a few inches beyond the edge of the elevator it maybe too loose and needs to be tightened.

To tighten or loosen the tension on the belt, the head has four tension adjustment rods which are double nutted (two on each side). Two 3/4" wrenches will be needed to make the adjustment. Turning the nuts clockwise will tighten the belt and turning them counterclockwise will loosen the belt. Adjust these rods until the tension on the belt is at the needed level.

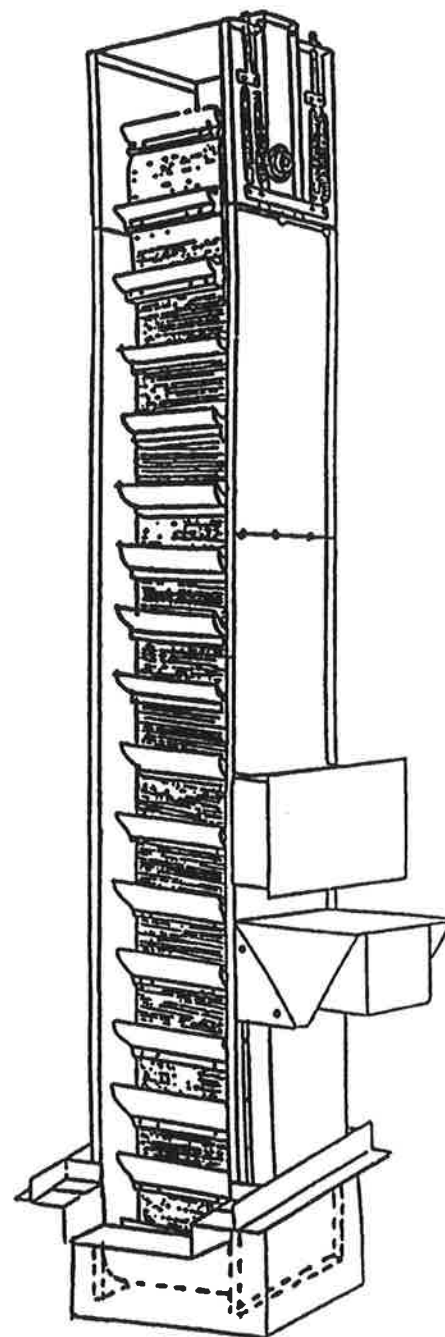
Tightening the rods draws the belt and pulley upwards towards the top of the elevator. It is important that there is enough space between the belt and the head for the balls to freely pass without hitting and jamming. If the correct tension cannot be reached without drawing the belt and pulley too close to the top, the belt must be shortened.

To shorten the belt, first completely loosen the tension adjusting rods. After that is done remove the pin from the alligator clamp on the belt. Then once the alligator clamp is removed, the amount of belt to remove can be determined by overlapping the two ends of the belt. Pull them so that if they were attached at some point, the tension on the belt would be correct. Once this point is found remove the excess belt making sure to leave 1" of overlapping belt. Reattach a new alligator clamp per the instructions on this page. Finally, retighten the nuts on the tension adjusting rods to the point that gives the correct belt tension.

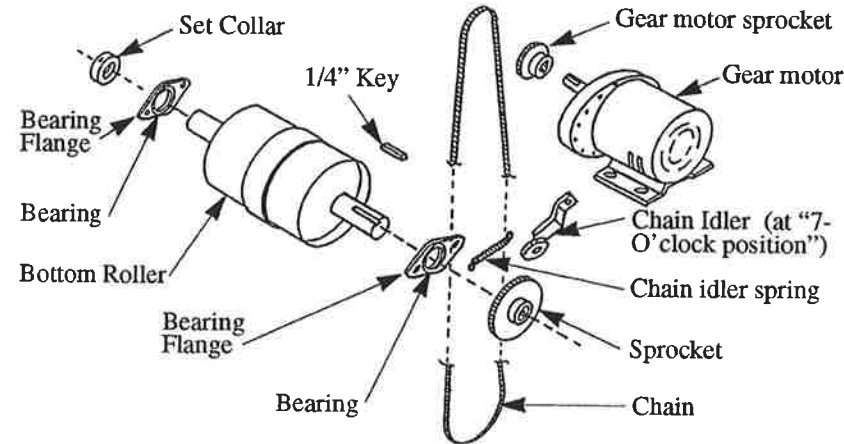
When shortening the belt in this fashion it is important to leave a space of 4 1/2" to 5 1/2" between each set of cleats. If, after reattaching the clamp the cleats on either side are not within the proper range, the cleats must be repositioned. In order to achieve the proper spacing more than one set of cleats may have to be moved so that they all remain within the 4 1/2" to 5 1/2" range. If there is less than 4 1/2" between cleats the balls will not be able to be picked up. If spacing is greater than 5 1/2" the balls will stack and can cause jamming at the top.

Once the correct tension is reached, check and see if the belt is riding in the middle of the elevator. This may be done by turning the elevator on and watching the belt circulate around the elevator. If the belt is riding to one side it may be corrected in one of two ways. You can either loosen the nuts on the tension adjusting rods on the opposite side the belt is pulling to or you may tighten the nuts on the tension adjusting rods on the same side the belt is pulling too. When the belt is properly positioned, the rollers, which are located approximately every seventh cleat, should be rolling smoothly and guiding evenly on center without binding against either side of the elevator.

Model EW Elevator



Elevator Chain Drive Assembly



Lubrication of the elevator chassis

The unit is equipped with pre-lubricated ball bearings and will not require re-lubrication. If the bearings of the roller (particularly the bottom roller) do show signs of excessive wear, as evidenced by the chain falling off often or by the elevator belt stalling often, then replace the bearings of the roller.

The chain should be lubricated once weekly, and after exposure to moisture, with a commercially available chain lube.

Maintenance of Motor

Dayton Electric Manufacturing Company, recommends the following cleaning, lubrication, and wire selection guide for their motors.

WARNING: DISCONNECT POWER BEFORE SERVICING

NOTE: Lock and tag power disconnect switch to prevent the accidental turn-on of power during servicing.

CLEANING

Properly selected and installed electric motors are capable of operating for long periods with minimal maintenance. Periodically clean out dirt accumulations from open-type motors, especially in and around vent openings, preferably by vacuuming (avoids imbedding dirt in windings). At the same time, check that electrical connections are tight.

LUBRICATION

The motor is equipped with pre-lubricated ball bearings and will not require re-lubrication. Should the gears require lubrication, use type "L-Industrial 30" (American Oil Co.) grease or its equivalent such as Mobile UX-EP2, Philube #EP2, Gulf Crown #EP2, Alvania #EP2, Multifax #EP2, or DuBois TPG.. It is important to completely clean the old lubricant from the gear box before adding fresh lubricant. Under no circumstances should different types of lubricant be mixed.

Wire Selection

Whenever possible, the motor should be powered from a separate branch circuit of adequate capacity to keep voltage drop to a minimum during starting and running. For longer runs increase wire size in accordance with the wire selection guide shown below.

| Motor Horsepower | Wire Selection Guide | | | | |
|------------------|---------------------------|-----|-----|-----|-----|
| | Length of wire run (feet) | | | | |
| | 25 | 50 | 100 | 150 | 200 |
| 1/4 | #14 | #10 | #8 | #6 | #4 |
| 1/2 | #12 | #8 | #6 | #4 | #3 |

Belt Splicing Instructions



1 Square belt ends.



2 Break lacing by placing thumbnail on bar and bending off excess. Two pieces required, each one tooth shorter than belt width.



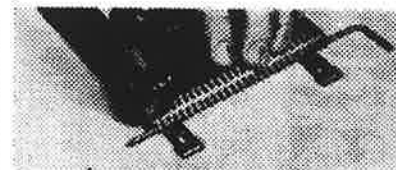
3 Snap clips into position, one near each end. (On very narrow belts use only one clip.)



4 Hold lacing loop-side up and insert smooth gauge rod through clips. Center bar-side of lacing on top of belt equally spaced from edges.



5 Turn belt over and drive lacing with bar side down. Avoid hitting loops.

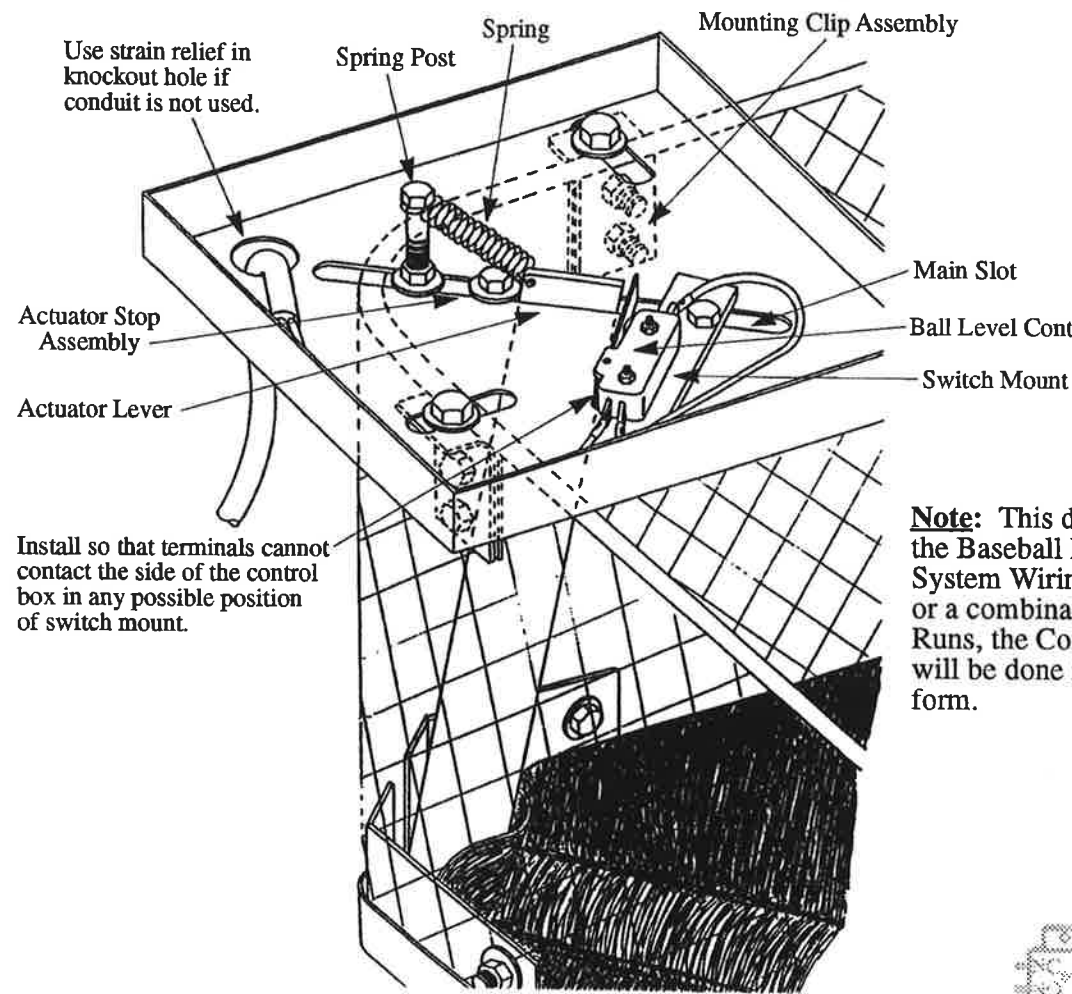


6 Turn belt over and with bar side up drive lacing flush with belt. Clinch teeth on metal plate.

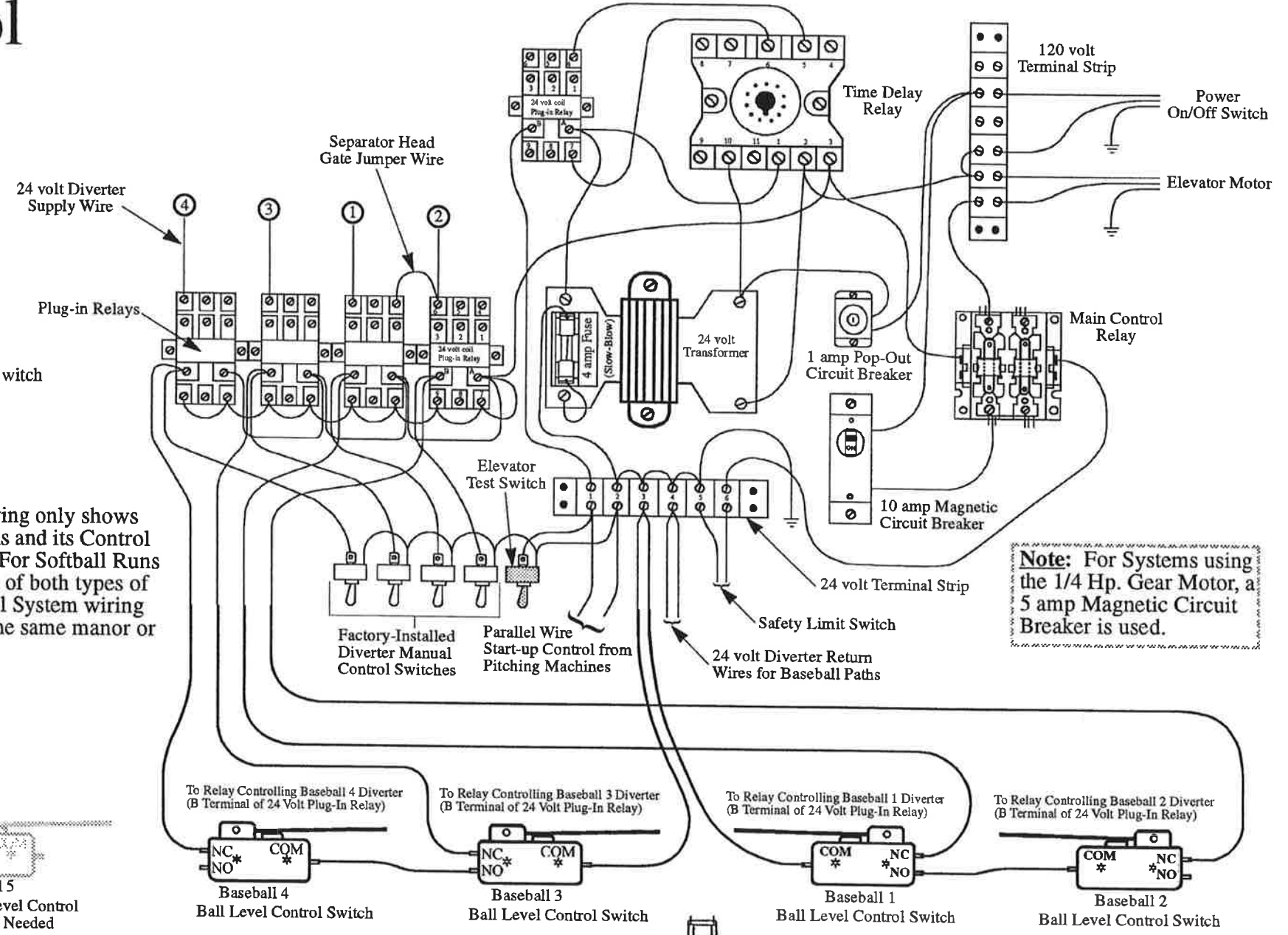


7 Cut corrugated hinge pin to length. Insert pin into splice with both bar-sides together on top of belt.

Diverter & Ball Level Control System Wiring



Note: This drawing only shows the Baseball Runs and its Control System Wiring. For Softball Runs or a combination of both types of Runs, the Control System wiring will be done in the same manor or form.



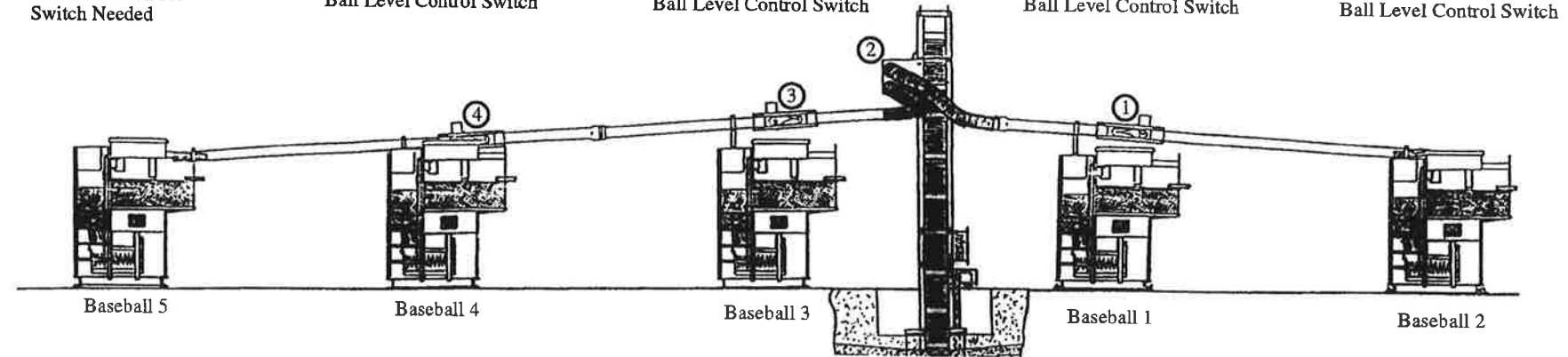
Note: For Systems using the 1/4 Hp. Gear Motor, a 5 amp Magnetic Circuit Breaker is used.

How the System Operates:

The ball level control switch keeps the Baseball #1 & #2 diverters closed until the Baseball #1 hopper has the desired level of balls. Then, the Baseball #2 control operates the corresponding separator head gate until the Baseball #2 hopper reaches the proper ball level. When the Baseball #2 control opens the separator head gate, all baseballs will flow into the secondary baseball path to Baseball #3. Once Baseball #3 is satisfied, then on to Baseball #4 and the remainder, when all four other machines are satisfied, will fill Baseball #5.

Note: This is a priority system, so at any point in time, the system can override and start the priority over from any machine calling for balls again. The same process will occur for the Softball paths from the elevator.

Note: A single manual control switch may be installed for the entire system or separate manual control switches may be used for baseball and softball systems. All manual switches connected to relays must be in the off position during automatic operation.



The Hopper Bottom Ball Level Control Installation

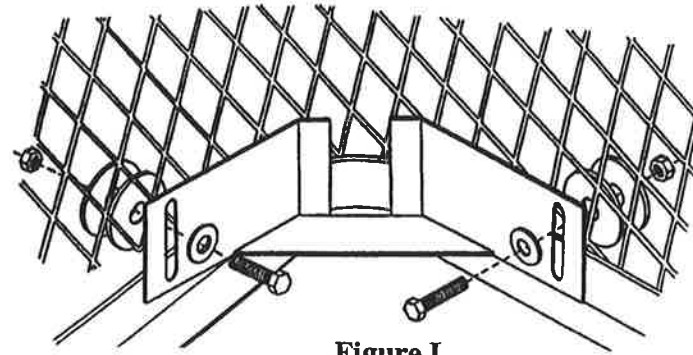


Figure I
Mounting the Corner Bracket

Step 1
Bolt the corner bracket in place as shown in figure I. The bracket should sit in the left front corner of the ball hopper (as viewed from the back of the machine).

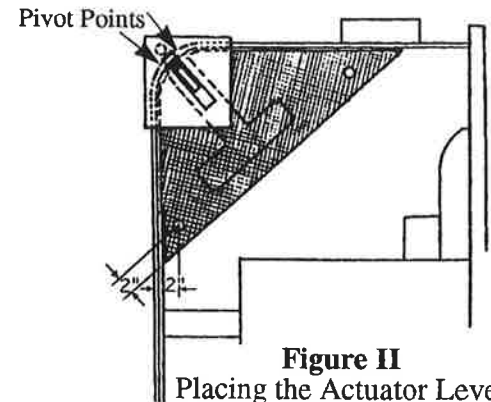


Figure II
Placing the Actuator Lever

Step 2
Place the actuator lever in the corner of the hopper as shown in figure II. Both pivot points of the actuator lever should sit firmly in and against the corners of the corner bracket. The flap-lift of the actuator lever should lay flat on the hopper bottom and rise up evenly when the actuator lever is pressed toward the corner. It may be necessary to slightly bend the base of the actuator lever so that the flap-lift lays flat on the hopper bottom.

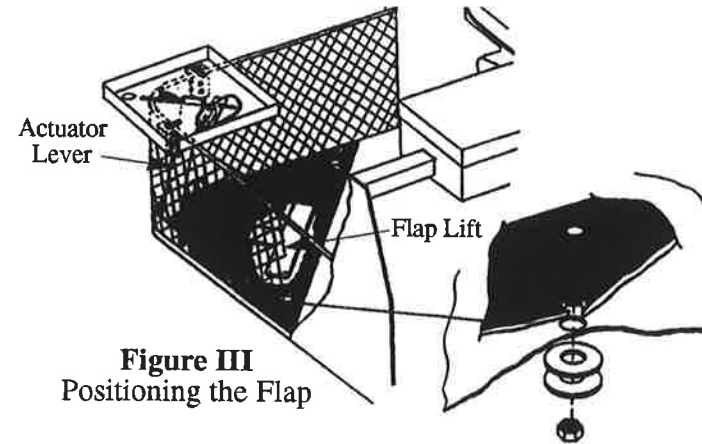


Figure III
Positioning the Flap

Step 3
Carefully position the triangular flap, with the smooth side up, over the actuator lever. See figure III. The sides of the flap should be within 1/8" of the sides of the hopper. The flap in the corner of the hopper should be allowed to curl up over the actuator level. Do not trim this flap off. Drill 5/16" diameter bolt holes through the hopper bottom through the holes punched in the flap at the points illustrated in figure II. Bolt the flap in place with the two flat-head elevator bolts supplied. When the bolting is complete, the whole flap, especially the edge facing the center of the hopper, should lie wrinkle-free against the hopper bottom.

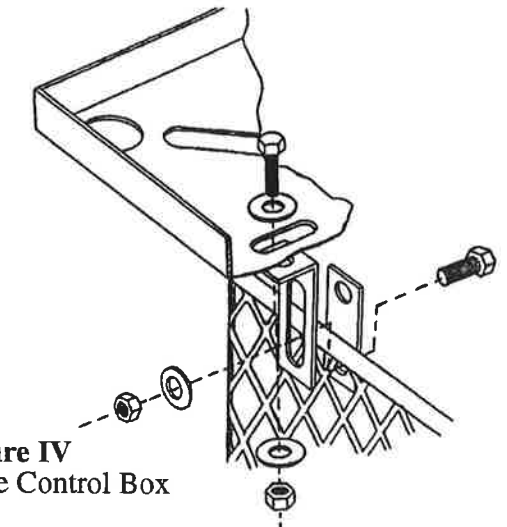


Figure IV
Mounting the Control Box

Step 4
With the actuator lever and flap in place, position the control box as shown in figure III. The mounting bracket assemblies attach to the expanded steel hopper as shown in figure IV. The slots in the control box and the bracket allow the box to be positioned precisely over the actuator lever for the best operating condition. The box and the actuator lever must be positioned so that the vertical bar of the actuator lever moves within the main slot of the box without touching the sides of the main slot.

Step 5
The spring on the spring post should be attached to the actuator lever by means of the link or hole in the top of the lever. The spring tension may be adjusted by moving the spring post in the main slot. Initially adjust the spring to move the tip of the lever about 1/4" with only the weight of the flap on the actuator. To accomplish this, the actuator stop assembly must be set so that the actuator lever can only move enough to activate and deactivate the switch. The switch mount is purposely shipped in a retracted position to prevent damage in shipping or installation. Adjust the switch by moving the mount to a position where the actuator lever is depressed enough to operate the switch when the flap is held against the hopper bottom and the lever pulls away from the switch when the flap is released.

How It Works
The actuator lever consists of a vertical bar and a flap-lift. The flap-lift fits under the flexible corner flap and holds the corner flap slightly off the hopper bottom by way of spring tension on the vertical bar. The actuator lever pivots on two pivot points in the corner of the hopper. As the balls in the hopper move up the sloped hopper bottom the weight on the corner flap presses the flap-lift down. As the flap-lift is pressed down, the vertical bar of the actuator lever is drawn towards the limit switch. Once the vertical bar has been drawn far enough to activate the switch, ball feed to the hopper will stop. Once the weight of the balls has shifted off the corner flap, the vertical bar draws back from contact with the limit switch and balls will feed to the hopper. The operator must adjust the limit switch so that it is activated when the desired ball level has been reached. To increase the ball level, increase the tension on the spring. To operate with a lower ball level, decrease the tension on the spring.

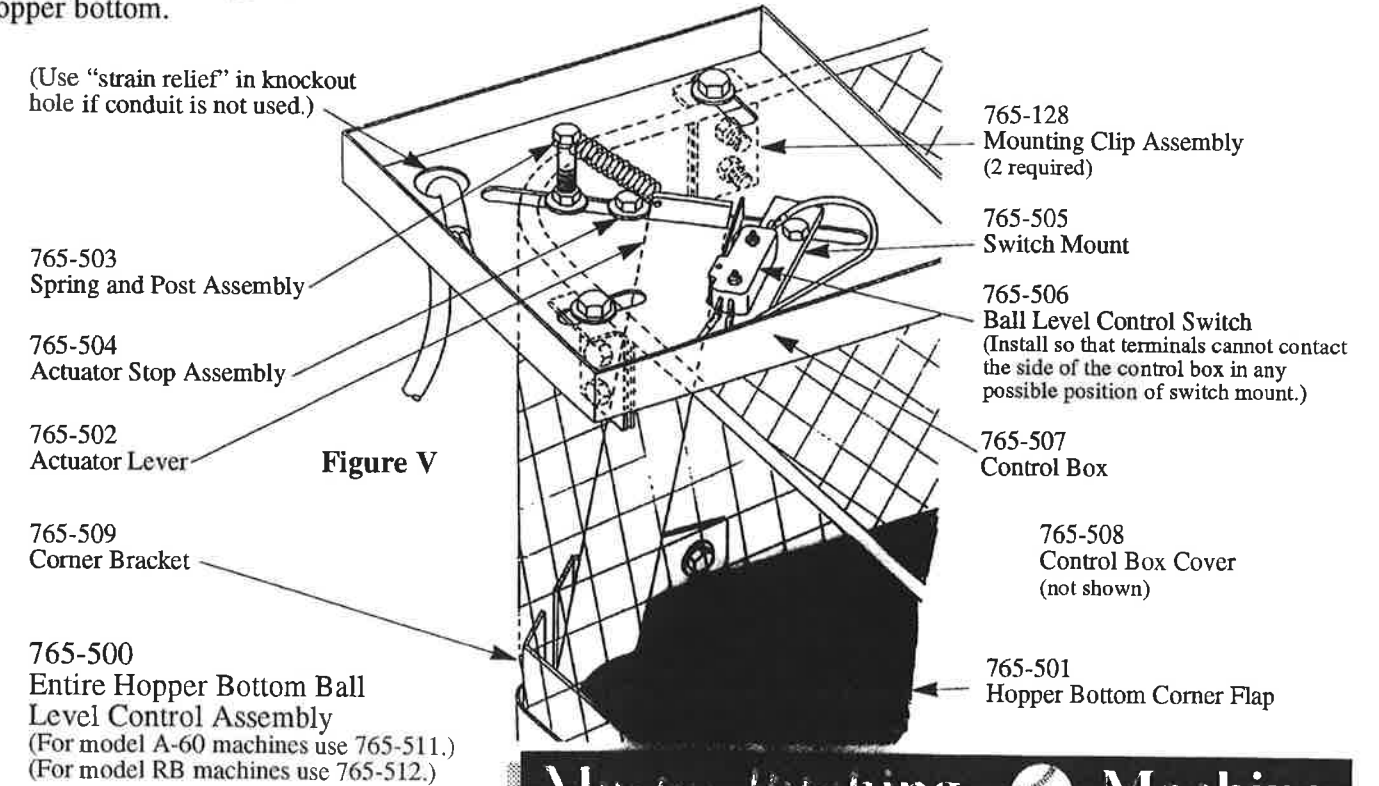


Figure V

- (Use "strain relief" in knockout hole if conduit is not used.)
- 765-128 Mounting Clip Assembly (2 required)
- 765-505 Switch Mount
- 765-506 Ball Level Control Switch (Install so that terminals cannot contact the side of the control box in any possible position of switch mount.)
- 765-507 Control Box
- 765-508 Control Box Cover (not shown)
- 765-501 Hopper Bottom Corner Flap
- 765-500 Entire Hopper Bottom Ball Level Control Assembly (For model A-60 machines use 765-511.) (For model RB machines use 765-512.)
- 765-509 Corner Bracket
- 765-502 Actuator Lever
- 765-504 Actuator Stop Assembly
- 765-503 Spring and Post Assembly

Separator Head, Diverter Gate & Flex Tube Adapter Installation

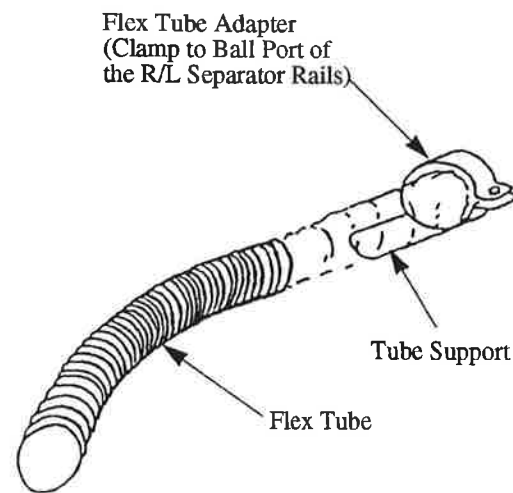
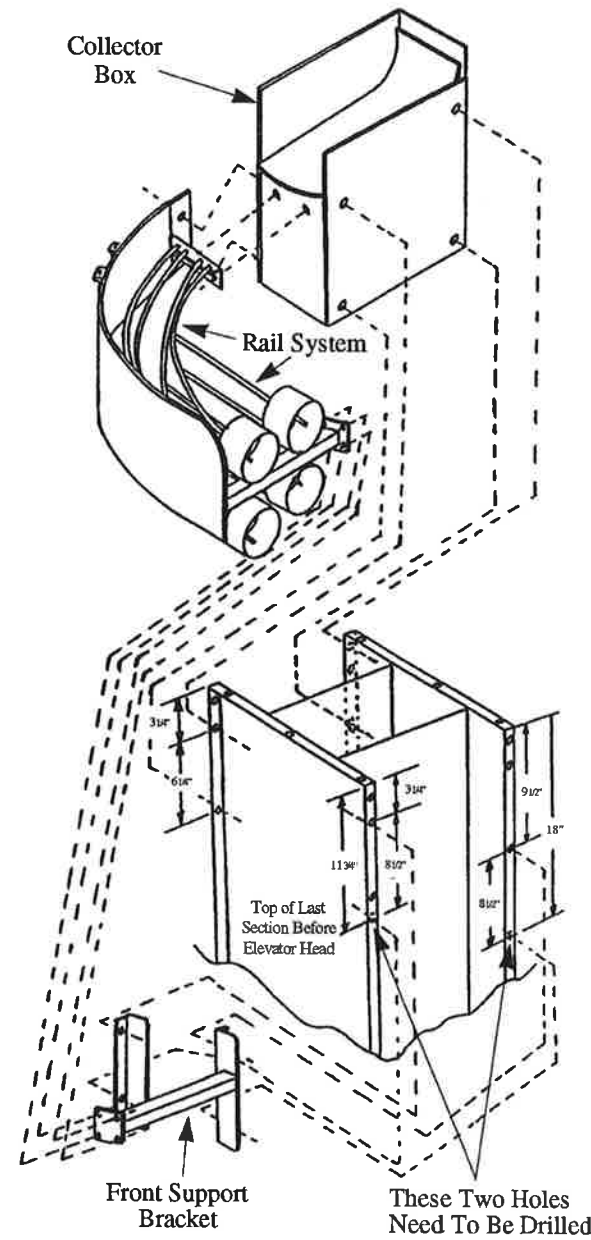
Mounting the Ball Separator Head

Step 1
Locate and drill the necessary holes in the front of the elevator. Mount the front support bracket in place on the front of the elevator as illustrated.

Step 2
Mount the collector box with the catch plate to the back of the elevator as illustrated.

Step 3
Mount the rail system by first bolting the four-hole flange on the front of the support bracket. Do not completely tighten the four bolts. Next, attach the rails to the collector box and completely tighten both bolts. Now, finish tightening the four-hole flange bolts. Finally, install the two bolts on the rail guard plate.

Step 4
Wire in the diverter gate system. For those system using diverter gates in the rail system, the dual box and motor actuator assembly will already be attached to the rail system along with the proper gates. See "24 volt Diverter Control System for Right-Left Ball Separator Head" page for the wiring of the head separator diverter gates. **Note:** The gates themselves may need to be adjusted as to the string length or amount of counterweight.



Use of the Flex Tube Adapter

Clamp the Flex Tube Adapter to the appropriate ball delivery port coming from the separator rails. Carefully trim the end of the flex tube so that the balls flow smoothly into the tube. Attach the flex tube to the tube support by taping the flex tube along the entire length of the tube support, leaving at least a 1" to 2" air gap between the flex tube and the adapter clamp. Once the flex tube is firmly attached to the support, bend the tubing to the shape necessary for installation.

The Diverter Gate in the Single Path Distribution System

This system is used when the pitching machines are arranged in a single path on either side of the ball elevator. Balls are sent down a single duct and are then directed to the individual machines by motor operated diverter gates.

The basic element of the single path system is the diverter unit. When all the diverter gates are opened, the balls go to the last machine in the path.

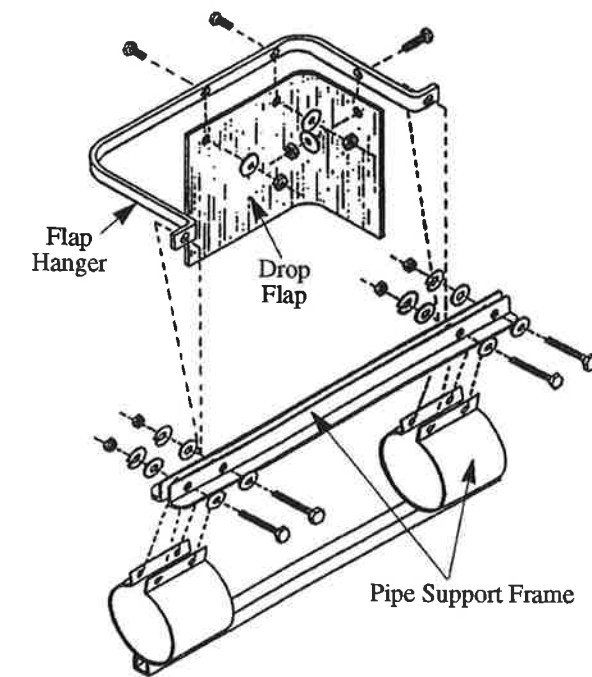
The diverter unit mounts in the support frame as illustrated in figure I. The ring clamps, which are a welded part of the support frame, clamp the unit together and reinforce the ball ducts. This maintains a continuous straight ball path entering and leaving the diverter area.

The diverter insert plate may be assembled as either a right-handed or left-handed unit. To reverse the unit remove the diverter gate and the motor from the insert plate and reassemble with the motor and the diverter gate at the opposite end of the insert plate. The entire unit may then be assembled on the duct arranged for the opposite direction.

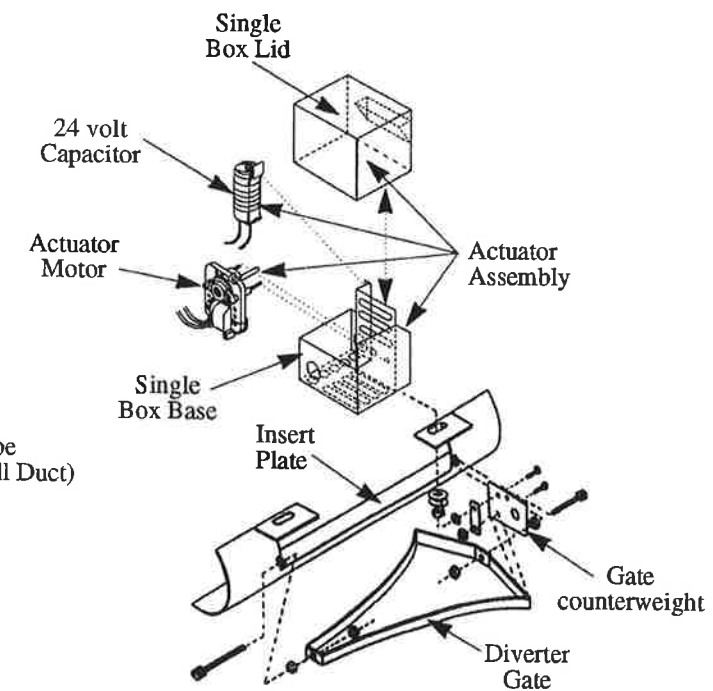
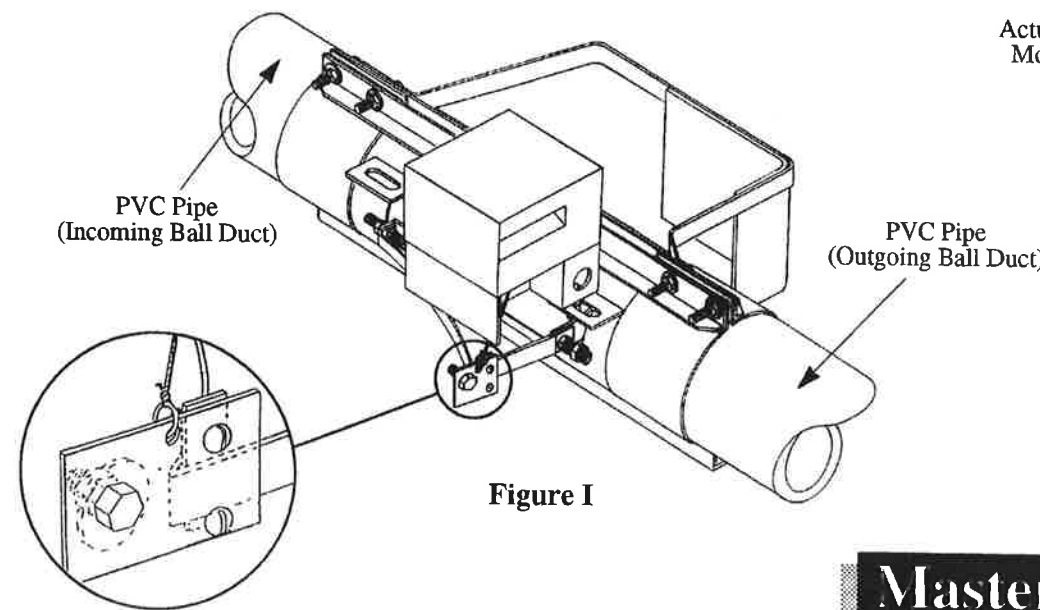
The adjustment of the diverter unit is proper when balls entering the diverter area continue on to the outgoing duct when the gate is up (motor not energized) and all of the balls are diverted into the hopper when the gate is down (motor energized).

The diverter gate and motor adjustment is proper when the motor is energized and the gate, when raised up by the motor, drops down freely into the ball path. When the motor is de-energized the gate moves up out of the ball path. The linkage between the motor and the diverter gate may be adjusted by a combination of moving the counterweight, which is clamped to the diverter gate by two screws, and by changing the length of the string between the motor and the diverter gate. The string length should have one and a half turns "revolutions" of slack. A tight string will cause the diverter mechanism to stall out. Too much slack will cause excessive string wear.

It may be necessary to rotate the duct, the frame, and the insert plate to get optimum operation from the ball diverter unit. **Note:** The "bridge" between the slots in the PVC tubing is wider on top than on the bottom of the pipe.



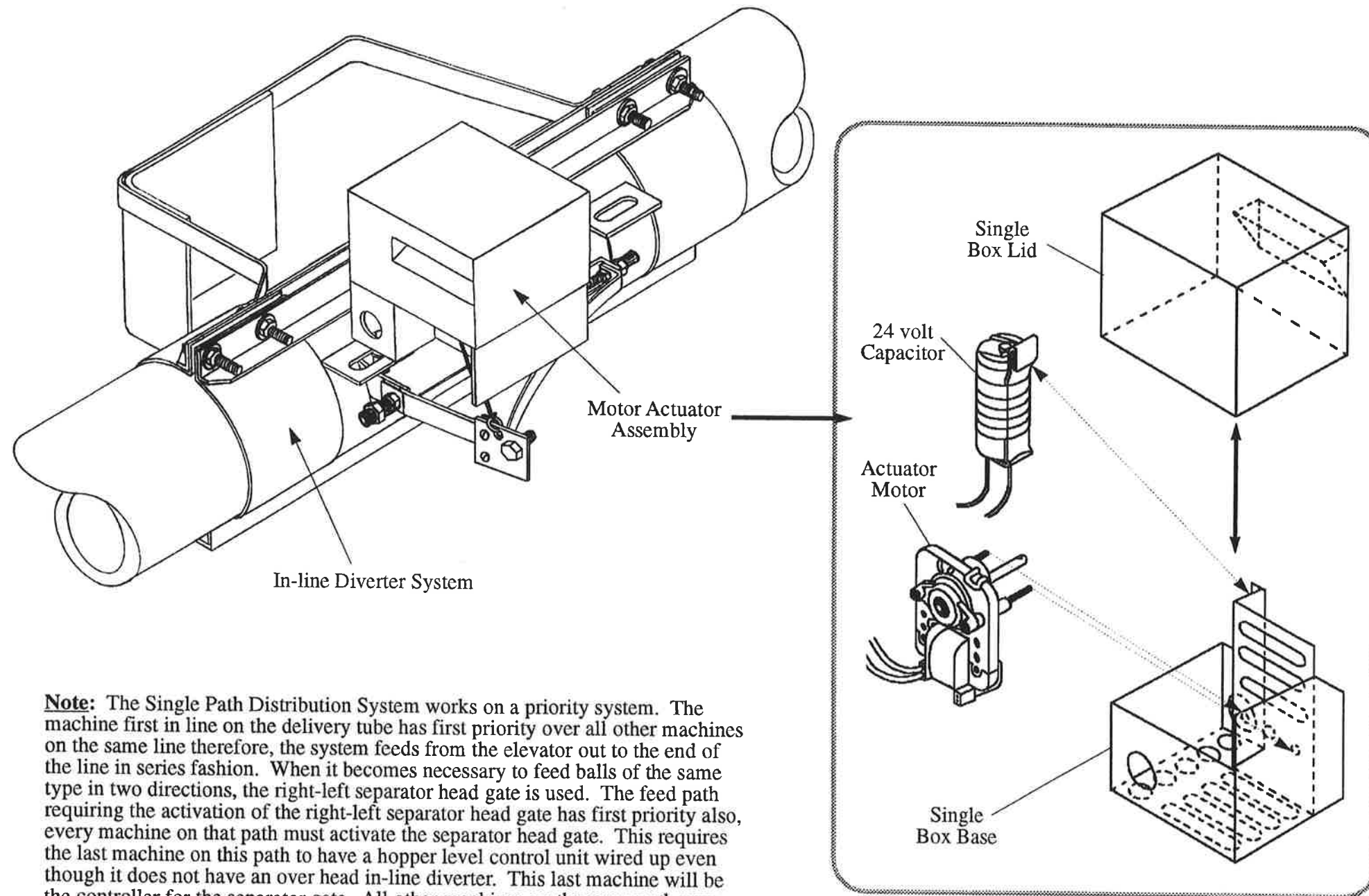
Assembled and Mounted Diverter Gate Unit



Master Pitching Machine

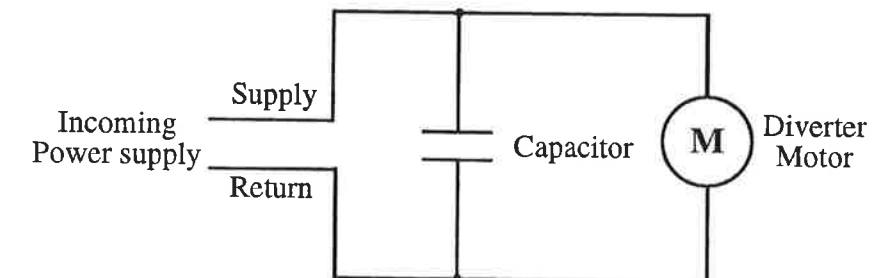
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24 Volt Diverter Control System for In-Line Diverters



Installation:

Attach the in-line diverter system to the rigid P.V.C. pipe over the pre-cut slots, see "The Diverter Gate in the Single Path Distribution System" installation instructions. Once the in-line diverter system is in place, connect the wires of the motor actuator to the capacitor inside the actuator motor box of the diverter system and then connect the 24 volt supply wire to the #6 terminal of the plug-in relay socket inside the elevator control box which you designated to control that diverter and attach the return (common) on the 24 volt terminal strip inside the elevator control box.



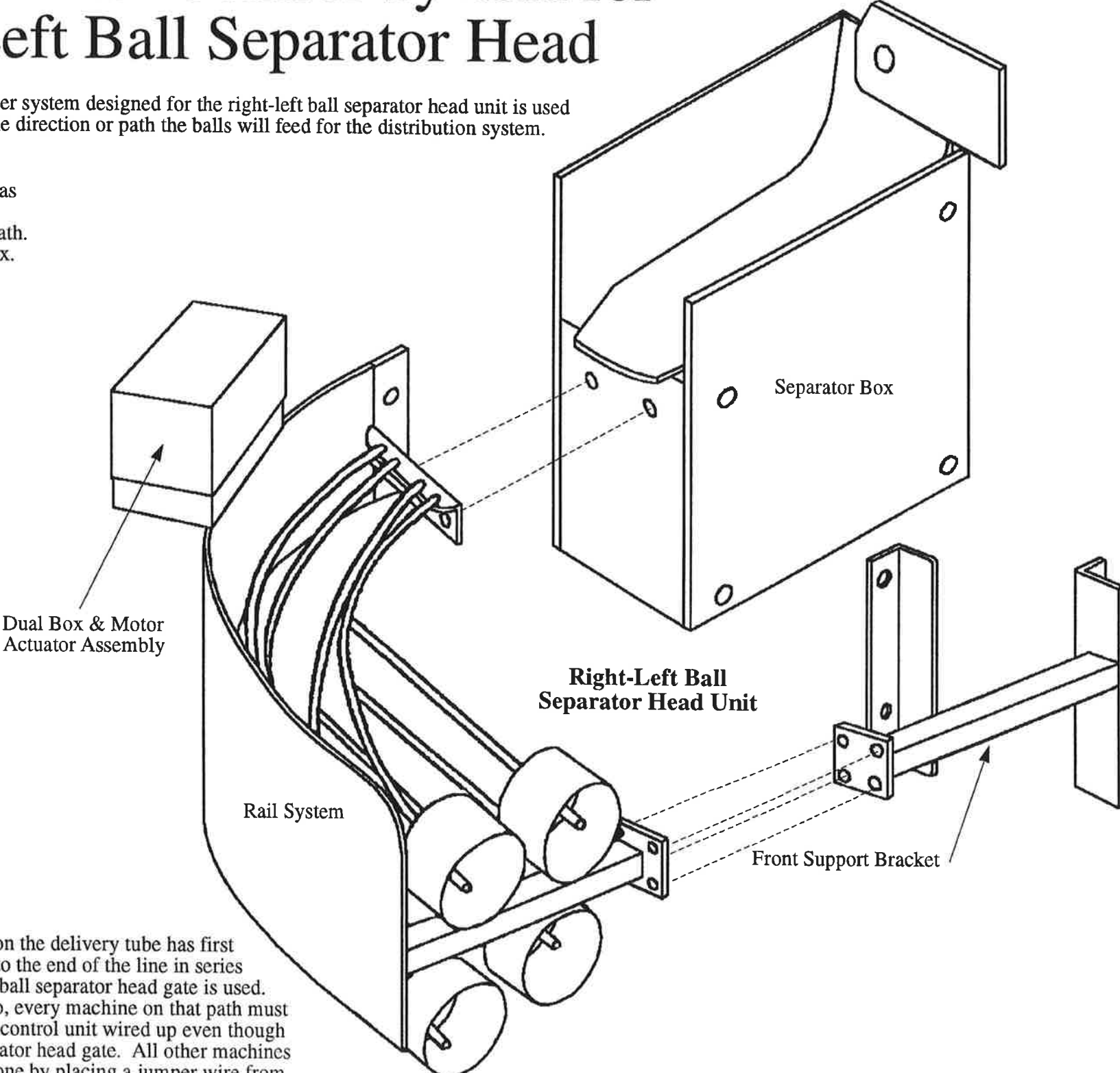
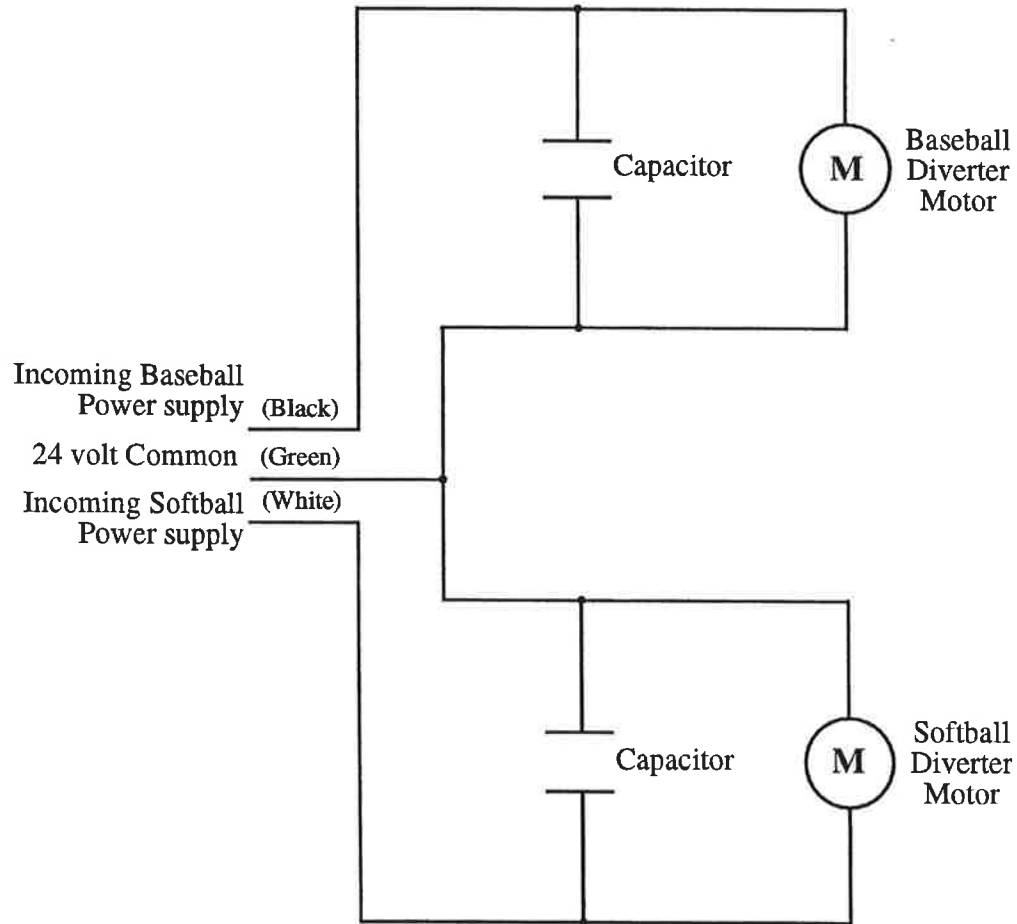
Note: The Single Path Distribution System works on a priority system. The machine first in line on the delivery tube has first priority over all other machines on the same line therefore, the system feeds from the elevator out to the end of the line in series fashion. When it becomes necessary to feed balls of the same type in two directions, the right-left separator head gate is used. The feed path requiring the activation of the right-left separator head gate has first priority also, every machine on that path must activate the separator head gate. This requires the last machine on this path to have a hopper level control unit wired up even though it does not have an over head in-line diverter. This last machine will be the controller for the separator gate. All other machines on the same path must be jumpered in the control box to actuate the separator gate. This is done by placing a jumper wire from the #4 terminal of the plug-in relay socket of each machine requiring the use of the separator head gate to the #6 terminal of the plug-in relay socket designated for controlling the separator head gate. Once this path has been satisfied, the priority then goes on to the last path and feeds, starting from the inside machine, out to the end of the line. **Note:** At any time, the priority can start over.

24 Volt Diverter Control System for Right-Left Ball Separator Head

The 24 volt diverter system designed for the right-left ball separator head unit is used to determine the direction or path the balls will feed for the distribution system.

Installation:

First, connect the motor wires to the appropriate motor actuators of the diverter system. To do this, connect the black wire to #6 terminal of the plug-in relay in the elevator control box that has been designated for the actuation of the gate for the proper feed direction of the baseballs. Connect the white wire to the #6 terminal of the plug-in relay designated for the softball feed path. Connect the green wire to a common on the 24 volt terminal strip inside the elevator control box.



Note: The Single Path Distribution System works on a priority system. The machine first in line on the delivery tube has first priority over all other machines on the same line therefore, the system feeds from the elevator out to the end of the line in series fashion. When it becomes necessary to feed balls of the same type in two directions, the right-left ball separator head gate is used. The feed path requiring the activation of the right-left ball separator head gate has first priority also, every machine on that path must activate the separator head gate. This requires the last machine on this path to have a hopper level control unit wired up even though it does not have an over head in-line diverter. This last machine will be the controller for the separator head gate. All other machines on the same path must be jumpered in the control box to actuate the separator head gate. This is done by placing a jumper wire from the #4 terminal of the plug-in relay socket of each machine requiring the use of the separator head gate to the #6 terminal of the plug-in relay socket designated for controlling the separator head gate. Once this path has been satisfied, the priority then goes on to the last path and feeds, starting from the inside machine, out to the end of the line. **Note:** At any time, the priority can start over.

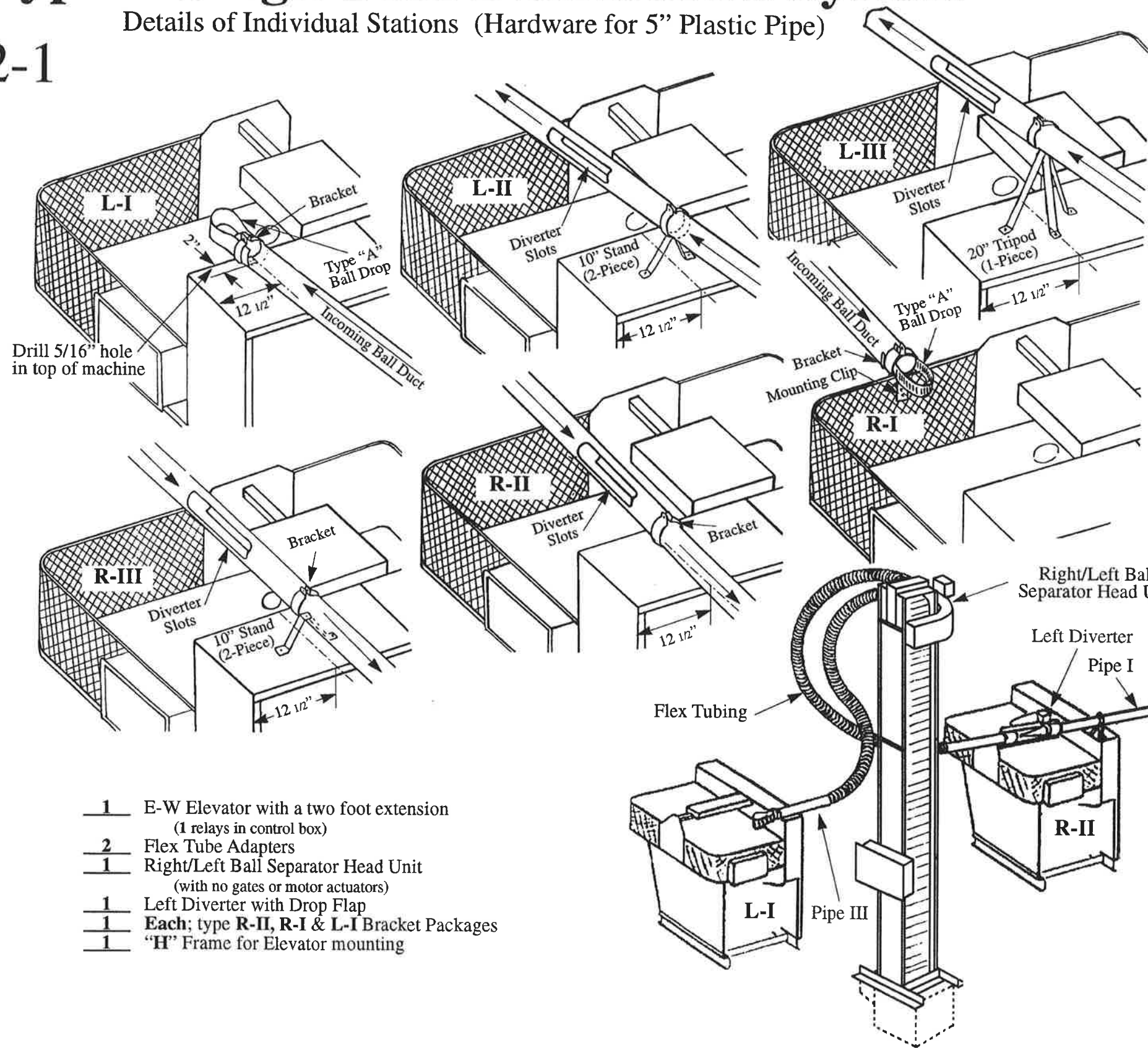
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Typical Single Path Distribution System

Details of Individual Stations (Hardware for 5" Plastic Pipe)

2-1

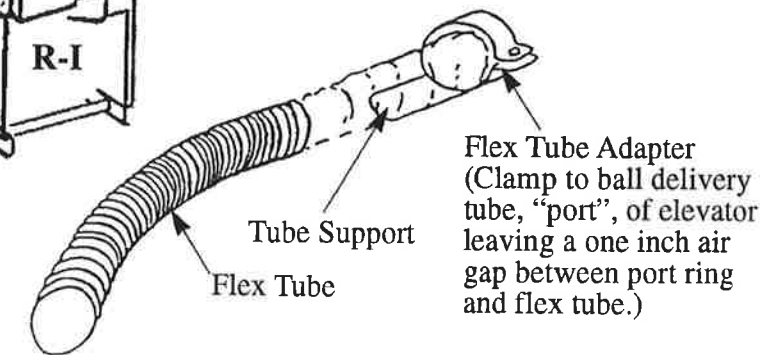


- 1 E-W Elevator with a two foot extension (1 relays in control box)
- 2 Flex Tube Adapters
- 1 Right/Left Ball Separator Head Unit (with no gates or motor actuators)
- 1 Left Diverter with Drop Flap
- 1 Each; type R-II, R-I & L-I Bracket Packages
- 1 "H" Frame for Elevator mounting

| Quantity | | Packing Slip 5" P.V.C. Pipe Bundles for Ball Distribution System | |
|--------------|-----|--|----------------------|
| <u>1</u> | I | | 15'-0" |
| <u>1</u> | II | | 11'-7" |
| <u>1</u> | III | | 1'-6" |
| <u>1</u> | IV | | 1'-6" |
| <u>1</u> | V | | 5'-0" |
| <u>1</u> | VI | | Length (no slots) |
| <u>25 ft</u> | VII | | 4" Plastic Flex Tube |

Use of Flex Tube Adapter

Trim end of flex tube carefully (with a sharp knife) so that balls will flow smoothly into flex tube. Tape tube to curved tube support along entire length of tube support to attach tube firmly to adapter. Then bend tubing to necessary shape for installation.



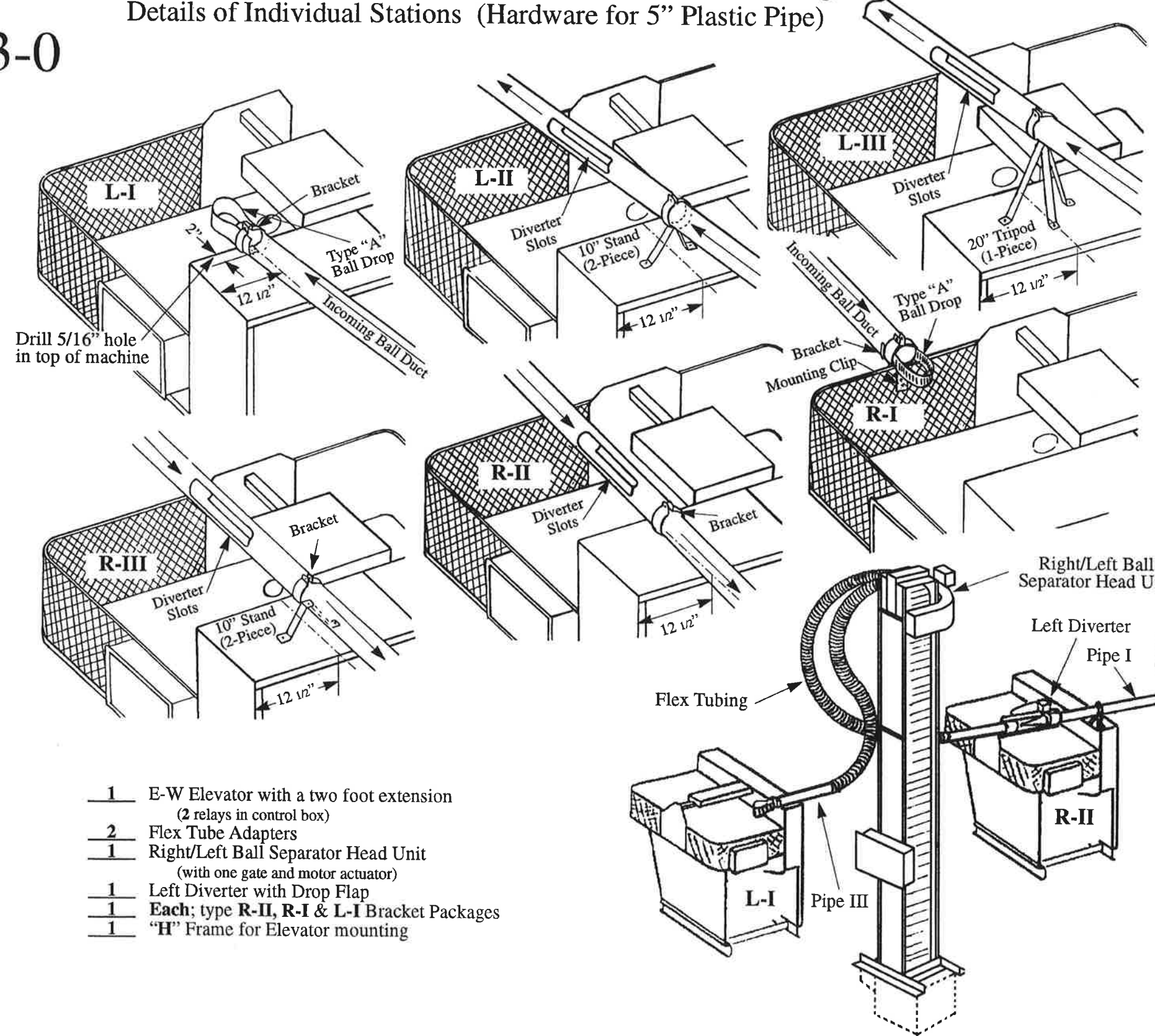
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Typical Single Path Distribution System

Details of Individual Stations (Hardware for 5" Plastic Pipe)

3-0



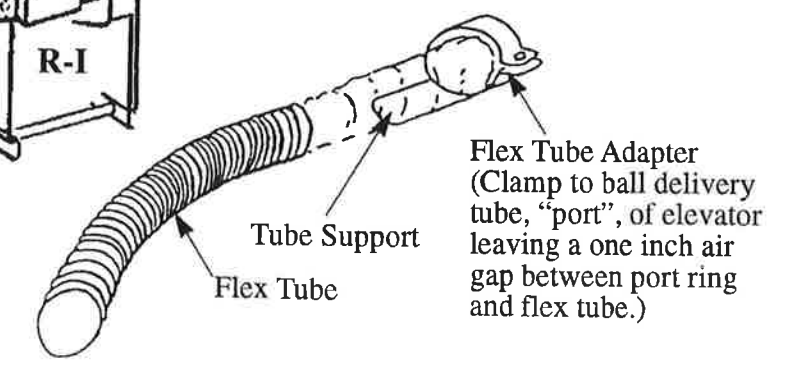
- 1 E-W Elevator with a two foot extension (2 relays in control box)
- 2 Flex Tube Adapters
- 1 Right/Left Ball Separator Head Unit (with one gate and motor actuator)
- 1 Left Diverter with Drop Flap
- 1 Each; type R-II, R-I & L-I Bracket Packages
- 1 "H" Frame for Elevator mounting

Packing Slip 5" P.V.C. Pipe Bundles for Ball Distribution System

| Quantity | | |
|----------|-----|-----------------------|
| 1 | I | 15'-0" (20' Length) |
| 1 | II | 11'-7" (20' Length) |
| 1 | III | 1'-6" |
| 1 | IV | 1'-6" (5'-0") |
| 1 | V | Length (no slots) |
| 1 | VI | 20' Length (no slots) |
| 25 ft | VII | 4" Plastic Flex Tube |

Use of Flex Tube Adapter

Trim end of flex tube carefully (with a sharp knife) so that balls will flow smoothly into flex tube. Tape tube to curved tube support along entire length of tube support to attach tube firmly to adapter. Then bend tubing to necessary shape for installation.



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2 Cage Contouring and Slope Plan

This is the recommended contour of the batting cage floor with one elevator system.

****The minimum slope of the cage floor should be one inch for each three feet****

Solid line (A) represents the perimeter of the batting cage floor. Maintain level elevation around the entire perimeter. All other elevations on the sketch are relative to this elevation.

Dotted line (B) represents a uniform elevation 6.7" below the perimeter. The batter's area slopes towards the ball sump.

The Central Slope Area slopes from line (B) towards the ball sump. Ideally, all slopes should join in a gently formed trough in front of the machines at Point (C). The balls should enter the sump at Point (D). Point (D) should be approximately 8.0" below Point (C). Point (C) should be 20.0" below Perimeter Line (A).

Note: Separate concrete pitching machine mounting pads are not used in this design. Machines are bolted directly to the concrete slab in the machine area. Special pads are used to correct for sloped concrete slabs and to allow balls to roll out from under or around the machines.

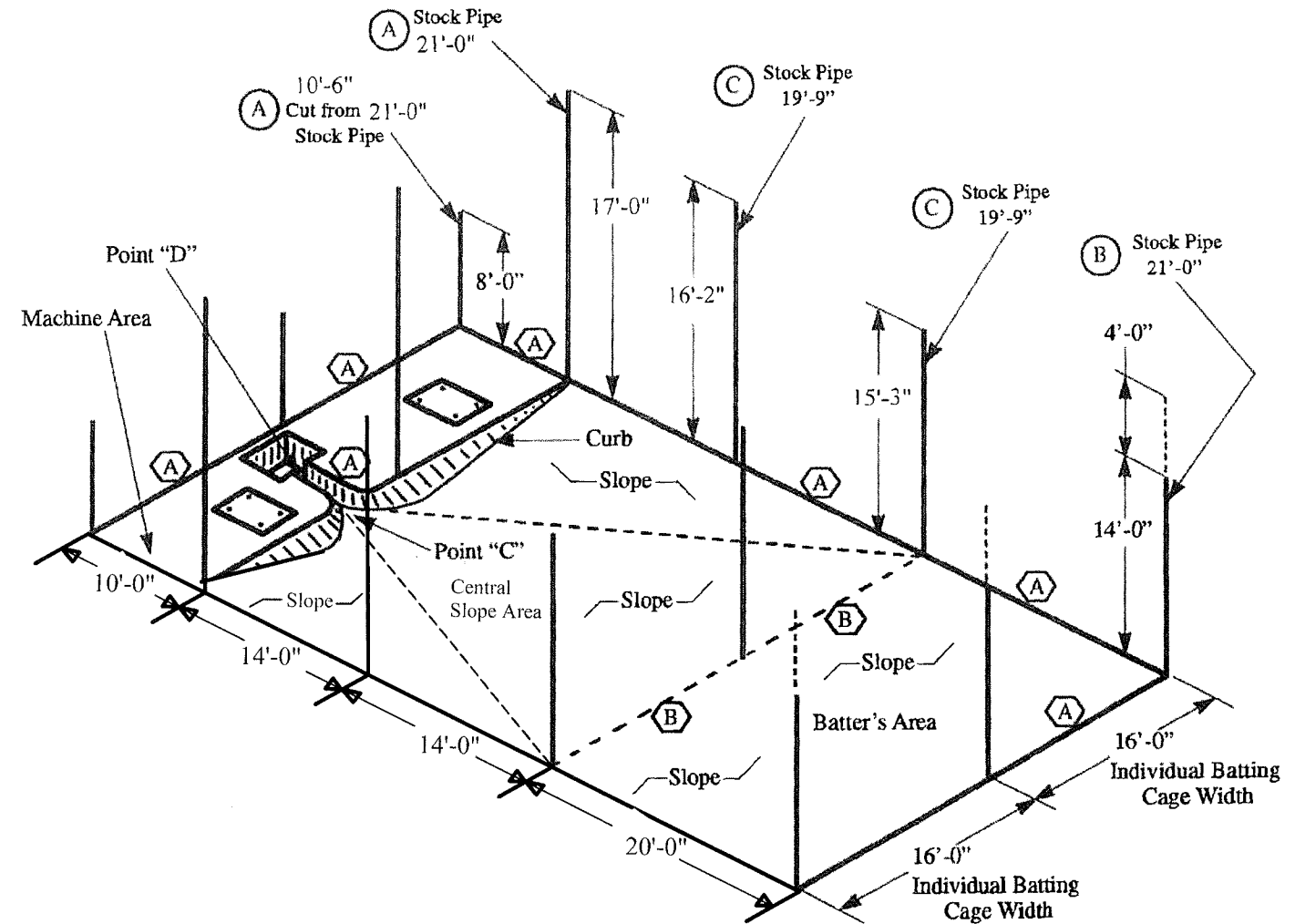
Note: The pipe dimensions shown are measurements above "Ground Plane" or perimeter elevation. Be sure to allow for the slope of floor and the length of pipe below the surface. Allow additional slope for rough or uneven cage floor finish.

General Guidelines

1. All work shall be in strict compliance with local, county and state codes.
2. All concrete for footings and slab shall be standard 3,000 psi, 28 day strength (minimum). Cement shall be portland cement conforming to ASTM C-150, Type 1 or 2 with a minimum of 5 sacks per cubic yard.
3. Ensure that all conduit runs, drain lines, and footings with ties are put in place before the slab is poured.
4. Use good concrete practice with generous use of expansion or control joints and reinforcements where needed in the concrete floor being careful not to interfere with the flow of the balls.

Note: For estimating purposes, plan on 4.04 cubic yards of concrete for batting cage posts and 38.18 cubic yards of concrete for 4" thick batting cage floor.

Important: Post layout measurements shown are from center-to-center of vertical posts. Close adherence to these dimensions is essential for proper fit of fitting system and standard nets.



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