



HUNTER'S WORLDWIDE  
ENGINEERING  
INSTRUCTION MANUAL  
BUCKET ELEVATOR

# Assembly of Basic Components

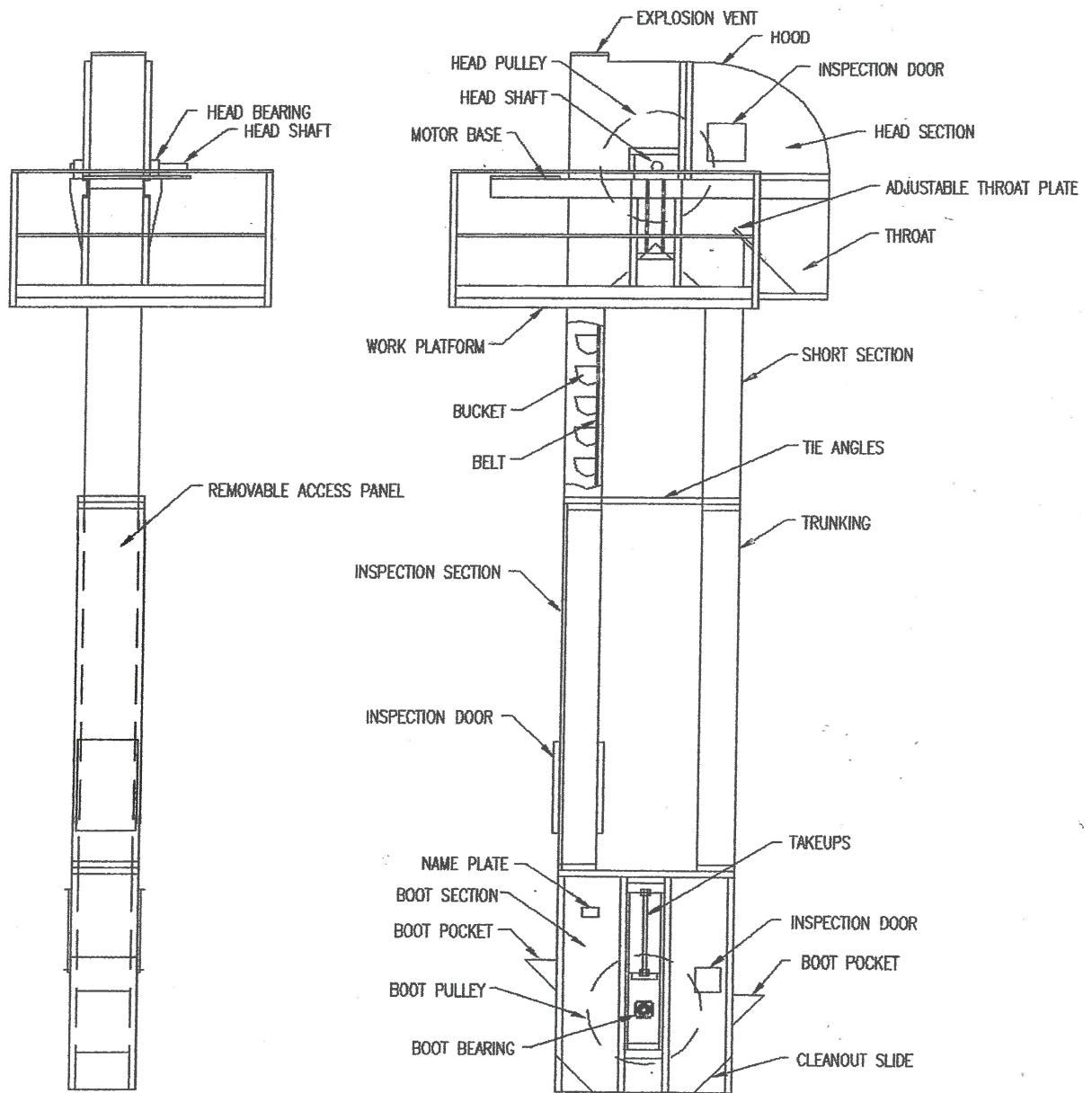


Figure 1

## INSPECTION

All parts have been carefully inspected before shipment from the factory. Carefully inspect all parts for damage or shortages that may have occurred during shipping.

**Important:** All claims for shipping damages or shortages must be noted by the consignee at the time of delivery and filed with the transportation company.

If damage or shortages are noted, have the transportation company's representative note this on the Bill of Lading and promptly notify us. Locate the model and serial number on the boot section and reference the missing or damaged part from the parts list. Forward this information along with the shipping date so that we may expedite the replacement parts.

## DRIVES

It is the responsibility of the installing contractor, installer, owner and user to assemble the drive mechanism so that it will conform to or exceed all safety and electrical codes, regardless, if the drive is supplied with the drag or whether it is supplied by the contractor or user. In all cases, the installer must insure that all manufacturers' instructions for installation and start up preparation have been followed. In those instances where we do not supply the drive, please consult with us for horsepower and speed requirements.

A common drive for legs is the shaft mounted type. This drive is often used because the reducer is mounted directly on the head shaft, eliminating high torque chain drives. The torque arm should be attached to the bottom of the motor base.

## WARNING

**Obtain and carefully follow the manufacturers' installation and maintenance brochures for all drives, bearings, belts, chain and other components and comply with their recommendations as it applies to your situation.**

Included in this manual is a troubleshooting section designed to help locate and solve problems in the operation of the bucket elevator. Again, the variety of systems is endless and we have concentrated on the more common problems. Most of the time, a common sense approach will quickly locate the problem. We are always anxious to see these problems promptly remedied and will assist you in diagnosing those you are unable to solve.

Various combinations of components are shown in Figure 1. Your leg will differ from this depending on the model and options ordered. The packing list will list the components you have received and indicate what fasteners are required for assembly. The following instructions refer to the assembly of a typical leg similar to that shown in Figure 1. (Pictured is a left-hand drive.)

The boot section should be fastened securely on a suitable foundation and shimmed to level in all directions. If there is a question regarding proper feeding on the up or downside of the boot, it must be resolved at this time. Spouts to the boot section will be installed no lower than the center of the boot shaft when the boot pulley is at the highest point.

The first few sections of trunking that attach to the boot need special consideration. The best position for the access door and inspection port should be determined and located accordingly. Note that the inspection port is generally located on the upside of the leg.

The first few sections of trunking that attach to the boot need special consideration. The best position for the access door and inspection port should be determined and located accordingly. Note that the inspection port is generally located on the upside of the leg.

Trunking is fabricated in 10' standard lengths and is precisely jig welded to insure a straight leg. Check each flange as it is assembled for damage and straighten if necessary. Make sure that the outside corners of the flange are aligned and tighten bolts evenly making sure sections are not twisted. This joint must be smooth inside so that a bucket cannot catch on it. Standard trunking sections have one corner that is welded, we recommend that this seam remain on the same corner from the boot to the head section. The non standard length section of trunking is usually placed just below the head section rather than the center of the leg. Plumb the trunking in all directions as it is assembled and check it again after the installation is complete. The use of two level transits is highly recommended.

The head section must support the forces imposed by the drive, discharging buckets, attach spouts, service platform, wind and numerous other stresses. Proper guying or bracing to other structures is imperative. Besides the obvious catastrophic failure and collapse of the leg if not properly braced, less obvious and troublesome maintenance problems and sure to plague its operations.

It is necessary to have the head shaft perfectly level so the belt will track properly on the head pulley. Place shims under the appropriate head bearing to have the belt run in the center of the head pulley. Place shims under the appropriate head bearing to have the belt run in the center of the head pulley. NOTE: Head pulley is crowned.

## MAN HOURS FOR BUCKET ELEVATORS

(APPROXIMATED)

WE HAVE INTERVIEWED TEN PROFESSIONAL MILLWRIGHTS TO DETERMINE MAN HOURS FOR THE ERECTION OF OUR EQUIPMENT. WE HAVE AVERAGED THEM TO DETERMINE THE APPROXIMATE TIME SCHEDULE FOR ERECTING. IF YOU ARE INEXPERIENCED THE FIGURES BELOW DO NOT APPLY, BUT WILL SIMPLY GIVE YOU AN ESTIMATE.

OUR BUCKET ELEVATORS HAVE BEEN DESIGNED TO LESSEN THE FIELD TIME FOR ERECTION. PLATFORMS AND LADDERS ARE COMPLETELY ASSEMBLED. DRIVE REDUCERS ARE PREMOUNTED AT THE FACTORY. MAN HOURS LISTED BELOW INCLUDE THE FOLLOWING: LOCATE AND SECURE BOOT, STACK LEGGING, MOUNT LADDER, CAGE AND PLATFORMS, MOUNTING MOTOR, SHEAVES AND BUSHING, SECURING DRIVE GUARD, BOLTING TRANSITION TO DISTRIBUTOR AND MOUNT. ALL GUYING, ASSEMBLING BUCKETS TO BELT AND INSTALLING.

200 BU/HR TO 1,000 BU/HR  
5.09 MT/HR TO 25.4 MT/HR

1,500 BU/HR TO 4,000 BU/HR  
38.2 MT/HR TO 101.8 MT/HR

<u>DISCHARGE HEIGHT</u>	<u>MAN HOURS</u>
15 FT.	7
35 FT.	8
55 FT.	12
75 FT.	25
95 FT.	39
115 FT.	46

<u>DISCHARGE HEIGHT</u>	<u>MAN HOURS</u>
15 FT.	8
35 FT.	9
55 FT.	13
75 FT.	26
95 FT.	40
115 FT.	47





1,000 BU/HR TO 6,000 BU/HR  
25.4 MT/HR TO 132.4 MT/HR

5,000 BU/HR TO 12,000 BU/HR  
127.0 MT/HR TO 304.9 MT/HR

<u>DISCHARGE HEIGHT</u>	<u>MAN HOURS</u>
15 FT.	8
35 FT.	12
55 FT.	18
75 FT.	29
95 FT.	46
115 FT.	57
135 FT.	65
155 FT.	79
175 FT.	93
195 FT.	101
215 FT.	117

<u>DISCHARGE HEIGHT</u>	<u>MAN HOURS</u>
15 FT.	9
35 FT.	13
55 FT.	19
75 FT.	30
95 FT.	47
115 FT.	58
135 FT.	66
155 FT.	80
175 FT.	94
195 FT.	102
215 FT.	118

9,000 BU/HR TO 18,000 BU/HR  
228.6 MT/HR TO 458.2 MT/HR

18,000 BU/HR TO 35,000 BU/HR  
228.6 MT/HR TO 890.9 MT/HR

<u>DISCHARGE HEIGHT</u>	<u>MAN HOURS</u>
15 FT.	10
35 FT.	13
55 FT.	16
75 FT.	32
95 FT.	39
115 FT.	56
135 FT.	64
155 FT.	75
175 FT.	96
195 FT.	112
215 FT.	120

<u>DISCHARGE HEIGHT</u>	<u>MAN HOURS</u>
15 FT.	15
35 FT.	20
55 FT.	26
75 FT.	37
95 FT.	54
115 FT.	65
135 FT.	69
155 FT.	87
175 FT.	101
195 FT.	117
215 FT.	125

## MAN HOURS FOR DISTRIBUTOR CONTROLLER

ALLOW TWO (2) MAN HOURS FOR INSTALLING GROUND LEVEL CONTROLLER FOR DISTRIBUTOR AND THREADING ALL CABLE FOR OPERATION.

## MAN HOURS FOR SPOUTING

MAN HOURS FOR SPOUTING USING PIPE SLEEVES OR ANGLE RINGS, ALSO INDICATING SPOUTING WITH TRUSS KITS. MAN HOURS INCLUDES SPOUTING IN PLACE.

### SPOUTING RUNS

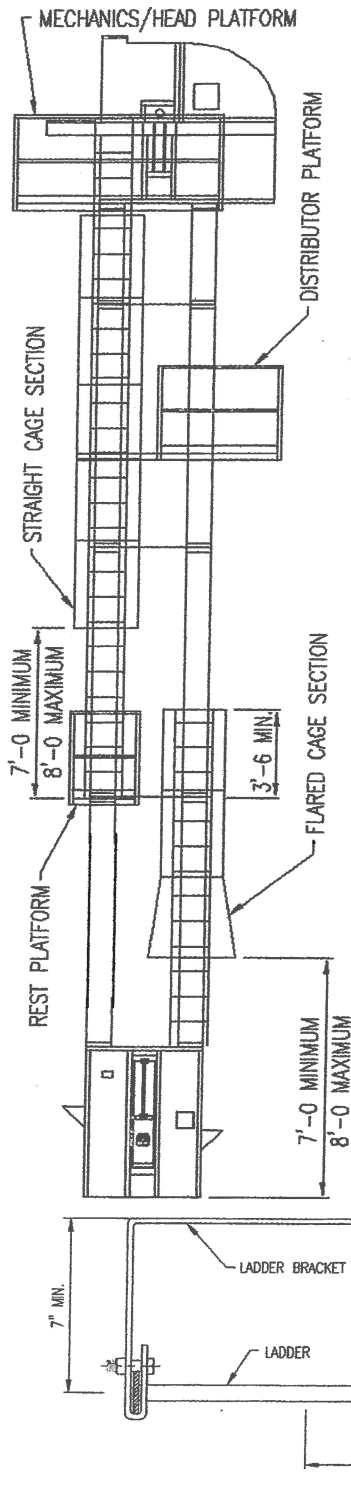
SPOUTING	UN-TRUSSED 40' LONG	WITH TRUSSING		
		60'	80'	100' LENGTHS
6" DIA.	3 MH	7 MH	8 MH	9 MH
8" DIA.	3 MH	7 MH	8 MH	9 MH
10" DIA.	3.5 MH	8 MH	8.5 MH	10 MH
12" DIA.	3.5 MH	8 MH	8.5 MH	10 MH
14" DIA.	4 MH	9 MH	10 MH	12 MH
16" DIA.	4 MH	9 MH	10 MH	12 MH
18" DIA.	4.5 MH	9.5 MH	11 MH	13.5 MH

### IGUNA SERIES CHAIN CONVEYOR IN FIELD ASSEMBLY TIME

CAPACITY	MAN HOURS PER FOOT
1,000 TO 4,000 BU/HR	.0625
4,500 TO 6,000 BU/HR	.0625
6,500 TO 8,500 BU/HR	.1094
8,600 TO 11,500 BU/HR	.1094
12,000 TO 16,500 BU/HR	.125
17,000 TO 20,500 BU/HR	.125
24,000 TO 27,000 BU/HR	.1563
30,000 TO 40,500 BU/HR	.1875



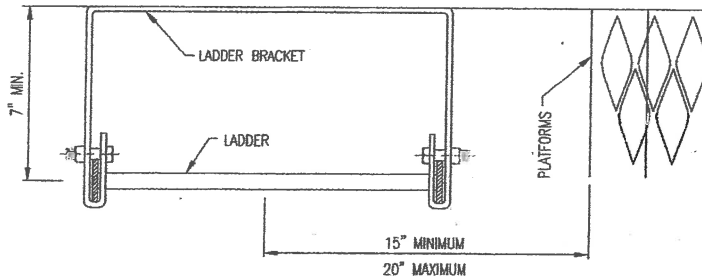
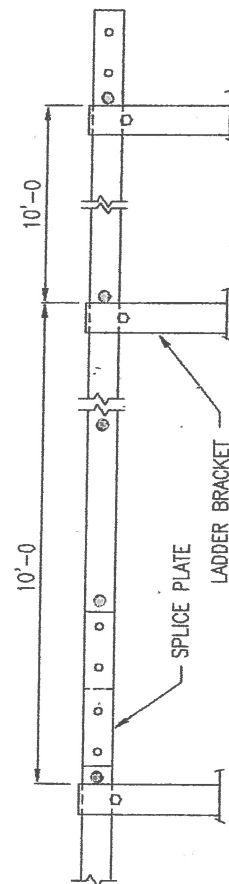
## LADDER CAGE AND PLATFORMS



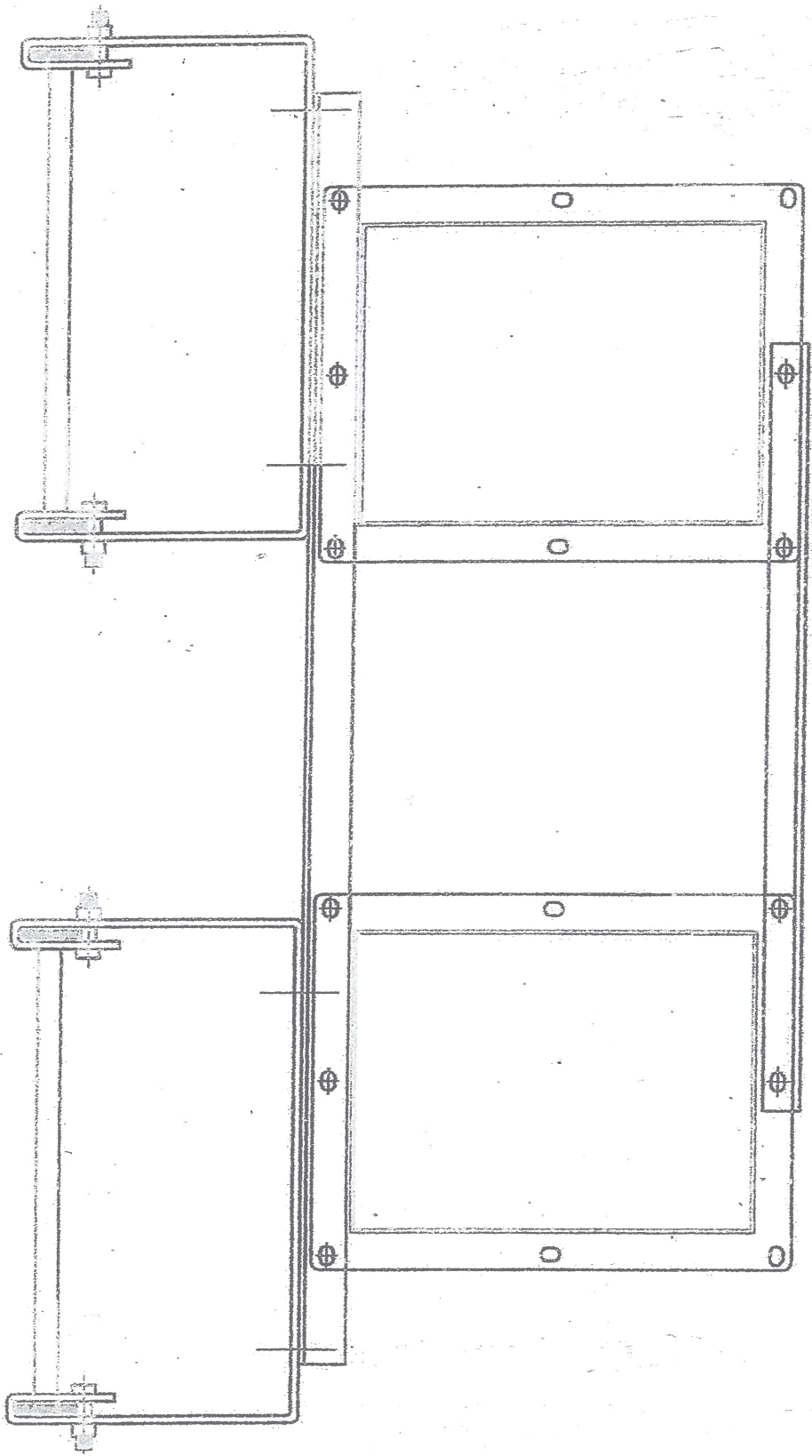
All platforms are made with strong steel tubing and angle iron hand rails. They all have "skywalk" grating to provide strong, sure footing. Head and distributor platforms are manufactured with a steel channel frame and simply slip over the trunking and weld in place for fast easy installation. Rest platforms are shipped with the handrails and support braces loose so that they can be easily assembled for the right or left-hand entry. OSHA requires rest platforms be offset as shown to left, and placed a maximum of 30 feet apart (ladder to platform offset spacing shown below.)

Ladders are made of solid steel bars welded together for strength and durability. The ladder brackets are readily welded or bolted to any solid surface. The ladder slides smoothly into the bracket and 1/2" bolts securely clamp it in place. Brackets should be spaced no more than ten feet apart (see drawing to right). Ladder sections bolt simply together with sturdy four bolt splice plates provided. The cage field welds to the ladder, allowing easy compliance with OSHA standards (most common shown on left).

Ladder, cage, & platforms are designed to meet OSHA standards. They are also designed to be easily installed by the contractor in the field. We can also custom manufacture platforms to fill your needs. Our staff will be happy to answer any questions you may have.







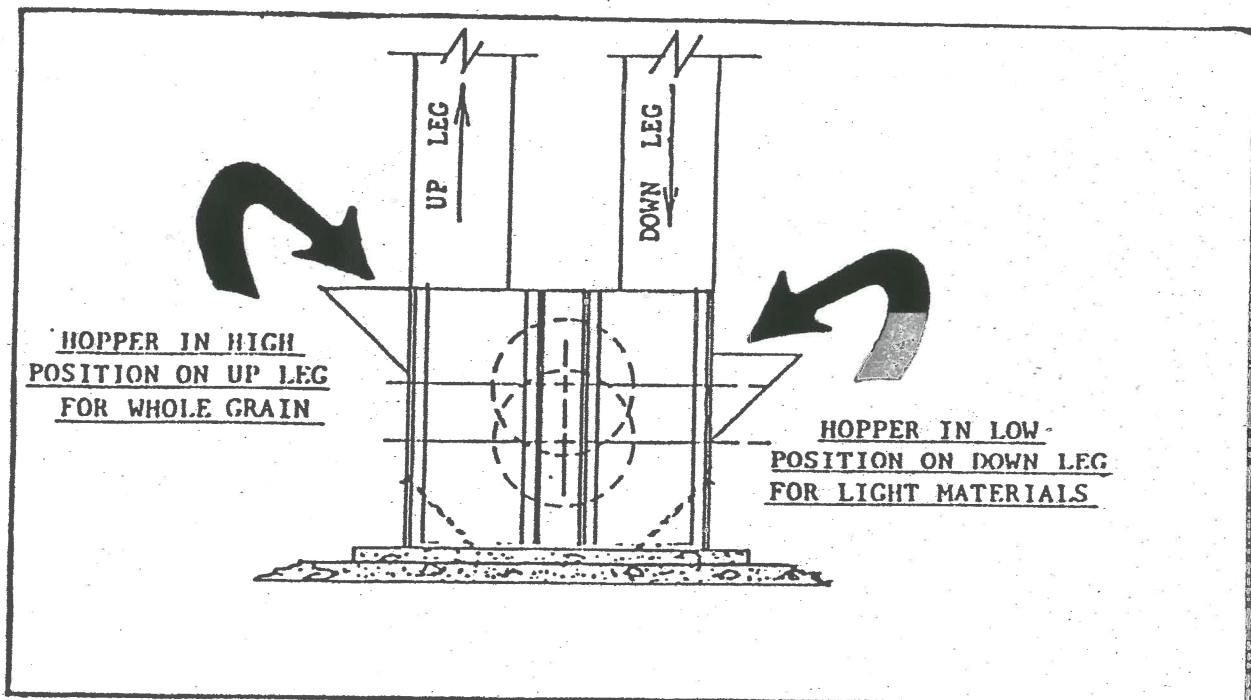
## FIGURE NO. 2

### BOOT FEEDING

GRAVITY FEED - WE RECOMMEND THAT WHOLE GRAIN AND OTHER FREE FLOWING MATERIALS BE FED INTO THE BOOT IN THE HIGH POSITION ON THE UP-SIDE OF THE LEG. (THE BOTTOM OF THE INLET SHOULD NEVER BE LOWER THAN THE CENTERLINE OF THE BOOT PULLEY, WHEN THE PULLEY IS RAISED TO ITS HIGHEST POSITION.)

FEED MATERIALS THAT TEND TO "DUST" SHOULD BE FED ON THE DOWN-SIDE IN THE LOW POSITION. (THE BOTTOM OF THE INLET SHOULD NEVER BE HIGHER THAN THE CENTERLINE OF THE BOOT PULLEY IN ITS LOWEST POSITION.) OTHER POSITIONS CAN BE USED, BUT THE CAPACITY OF THE LEG MAY BE REDUCED.

FORCE FEED - WE RECOMMEND THE BOOT BE FORCE FED ON THE DOWN-SIDE AND IN THE LOW POSITION. (THE BOTTOM OF THE INLET-SHOULD NEVER BE HIGHER THAN THE CENTERLINE OF THE BOOT PULLEY WHEN THE PULLEY IS IN ITS LOWEST POSITION.) OTHER POSITIONS CAN BE USED, BUT THE CAPACITY OF THE LEG MAY BE REDUCER.



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SYSTEMS, INC.

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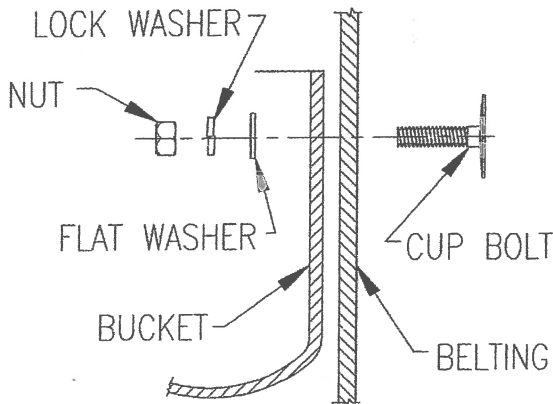
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## BELT & CUPS

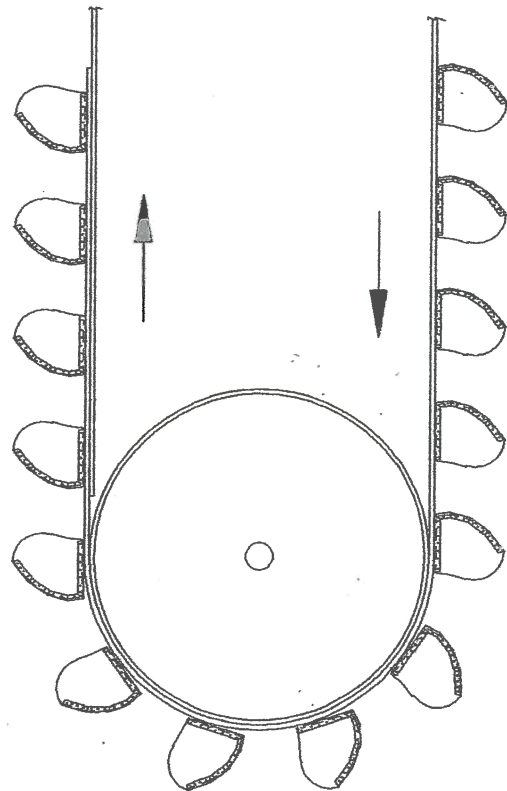
Cups are attached using bolts, nuts, lock washers and flat washers supplied (see figure 3 below). It is imperative to torque the bolt to the correct tension using the chart below.

The cups are sometimes attached to the bolt and tightened, and usually pulled through the access door on the up leg, around the head pulley, boot pulley and back to the door where it is spliced. The lap splice is standard and is unless another type has been specifically ordered. Additional belt length has been furnished so that at least four cups may be bolted over the lap. Long cup bolts called "splice bolts" on the packing list are included for this lap area. The proper direction for the lap is shown in Figure 2.

With the boot pulley in the highest take-up position, let the belt hang under tension, with the cups attached, for 24 hours if possible. This will remove almost all of the initial stretch and will require less adjustment during the break-in period.



**Figure 3**

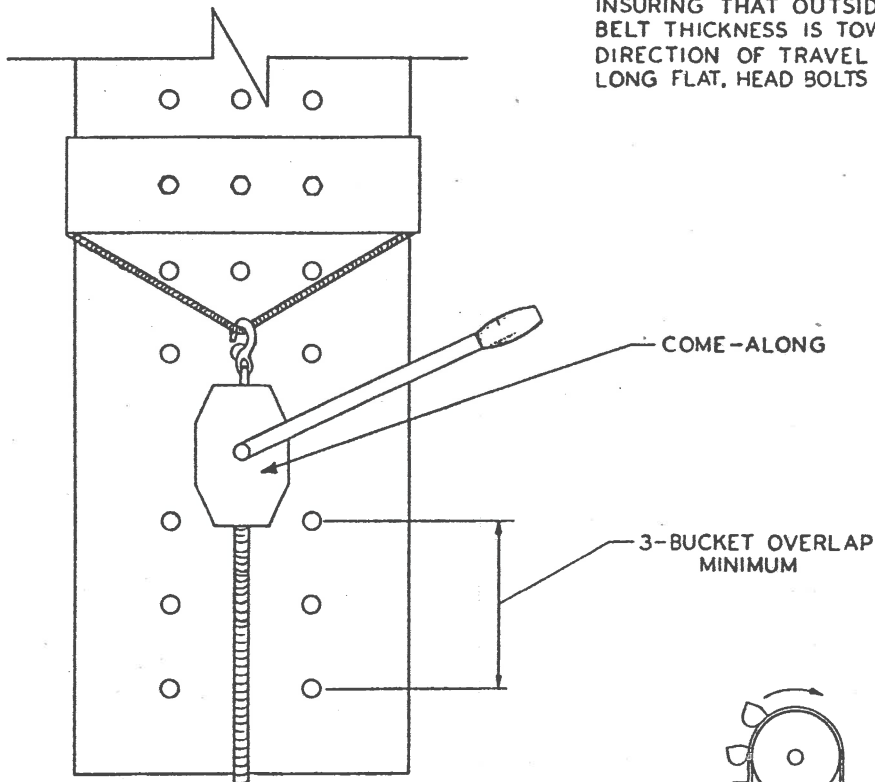


**Figure 2**

### Recommended Torque

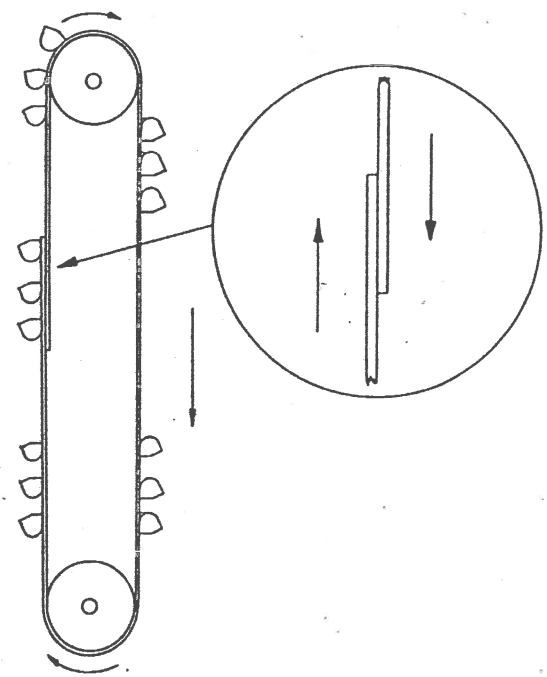
Shank Dia.	Steel Bolt (in-lb)	Steel Bolt (kg-m)	Stainless Steel Bolt (in-lb)	Stainless Steel Bolt (kg-m)
1/4"	50	7	86	12
5/16"	96	13	177	25
3/8"	180	25	—	—

SPLICE BELT WITH A 3-BUCKET OVERLAP INSURING THAT OUTSIDE BELT THICKNESS IS TOWARDS DIRECTION OF TRAVEL USE LONG FLAT, HEAD BOLTS PROVIDED.



COME-ALONG

3-BUCKET OVERLAP MINIMUM



**BELTING INSTALLATION**

WE HERE AT HUNTER'S WORLDWIDE SPECIFY THE STRENGTH REQUIRED FOR YOUR BUCKET ELEVATOR. WE DETERMINE HEIGHT, WEIGHT OF MATERIAL, COMPUTE INTG PTH OR PER INCH WIDTH TO DETERMINE STRENGTH OF BELT. BY THIS METHOD ACCURATE CONTROL OF THE STRETCH IS CONTROLLED. IN ALL CASES WE WILL HAVE A SHRINKING IN COLD WEATHER WHEN THE TEMPERATURE IS 25° OR LOWER, THEN BOOT TENSION MUST BE RELAXED. WE RECOMMEND THE FOLLOWING PROCEDURE FOR INSTALLING BELT:

1. THE BELT CAN BE INSTALLED WITH OR WITHOUT THE BUCKETS ATTACHED. THIS WILL DEPEND UPON THE SIZE OF THE LEG AND THE EQUIPMENT AVAILABLE. REGARDLESS OF THE METHOD USED THE BELT IS "THREADED" IN THE SAME MANNER.
2. RAISE THE BOOT PULLEY TO ITS HIGHEST TAKE-UP POSITION.
3. REMOVE THE HEAD COVER AND THREAD ONE END OF A CABLE OR STRONG ROPE DOWN THE UP LEG AND OUT THE INSPECTION DOOR. THREAD THE OTHER END DOWN THE DOWN LEG AROUND THE BOOT PULLEY AND OUT THE INSPECTION DOOR.
4. ATTACH THE CABLE OR ROPE TO THE BELT. USE A PIECE OF ANGLE THE SAME WIDTH AS THE BELT TO ACCOMPLISH THIS. DRILL HOLES IN ONE LEG OF THE ANGLE TO MATCH BUCKET ATTACHING HOLES IN THE BELT. DRILL A SINGLE HOLE IN THE OTHER LEG OF THE ANGLE.
5. USING THE CABLE OR ROPE CAREFULLY "THREAD" THE BELT. AT THE POINT WHEN THE BELT IS ALMOST ALL OF THE WAY IN THE ELEVATOR BE CAREFUL NOT TO PULL TOO FAR. ATTACH SPLICE AS INDICATED ON DRAWING. MINIMUM OF THREE (3) BUCKET SPLICES.
6. ATTACH ANGLE TO BOTH ENDS OF BELT AND INSERT THE HOOK OF THE "COME ALONG". BRING THE BELT TO A TIGHT POSITION. DO NOT OVER TIGHTEN. BELTING HAS BEEN PRE-STRETCHED. ATTACH SPLICE BOLTS THRU DOUBLE THICKNESS OF BELT TO ACQUIRE SPLICE HOOK UP AS PER DRAWING ILLUSTRATION.
7. USING TAKE-UP, LOWER THE PULLEY, NOTING TO KEEP SQUARE WITH HOUSING. PUT INSPECTION SECTION IN PLACE BY BOLTING IN DOOR TO PREVENT INJURY. START BUCKET ELEVATOR BY RUMPING THE START BUTTON OFF AND ON UNTIL A FULL CYCLE HAS BEEN MADE. IF EVERYTHING IS CLEAR FROM THE HOUSING, ALLOW THE BUCKET ELEVATOR TO RUN. IF BELTING RIDES TO RIGHT OR LEFT SIDE OF THE HOUSING, ADJUST THE TAKE-UP TO THE SIDE THE BELT IS RUNNING TO. THIS WILL ALLOW THE BELT TO CENTER ON THE PULLEY.

**HUNTER'S  
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SYSTEMS, INC.**

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**SPLICE BELTING**

**FIG. NO. 10**

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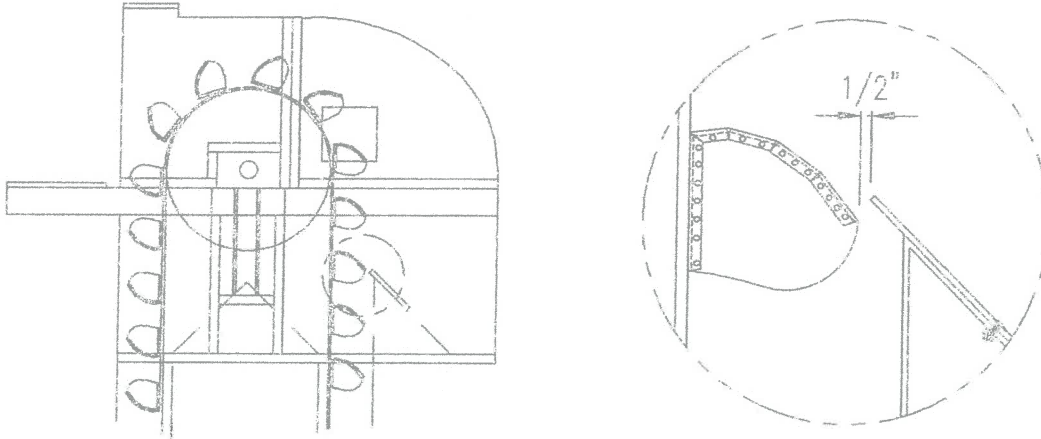
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## FINAL ADJUSTMENTS

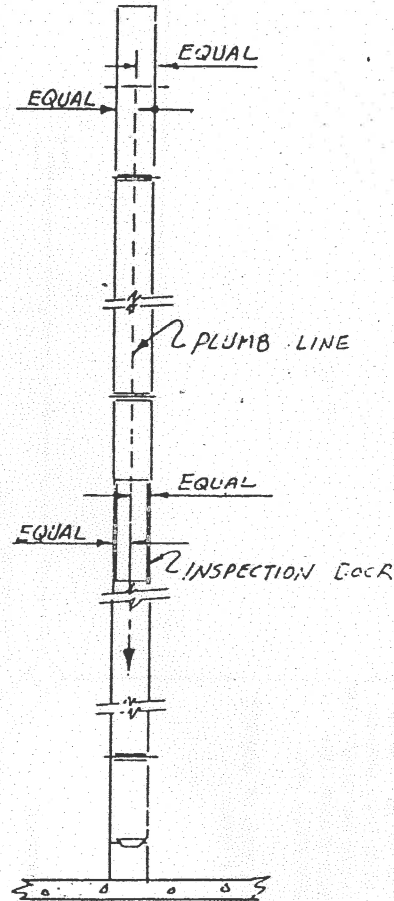
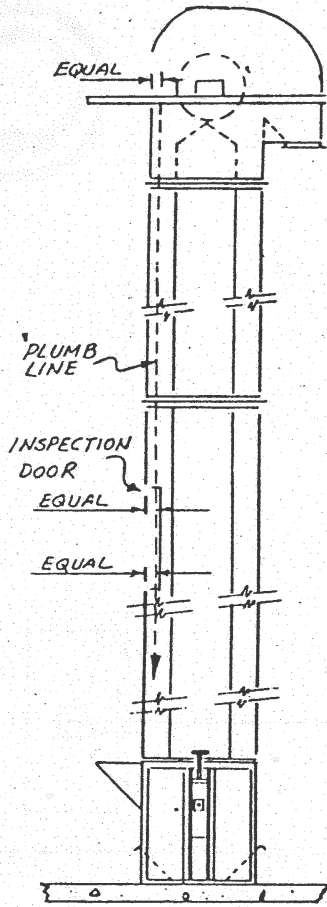
Adjust the throat plate in the discharge of the head so that there is  $\frac{1}{2}$ " clearance between it and the tip of the cups on the lap splice. Tighten the take-ups on the boot evenly and bump the motor to initially move the belt around, make the tracking adjustment while the leg is running empty. The leg should run quietly, without the belts or cups rubbing the trunking.



## WARNING

**Before running the elevator make sure all guards are in place, inspection doors are closed, and safety devices are connected and operational.**

# PLUMBING



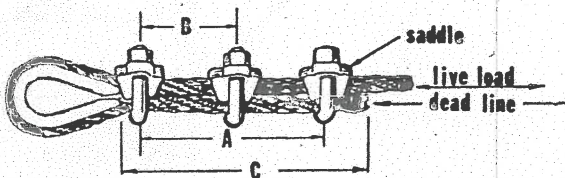
## CABLE INFORMATION

Wire rope clips should be attached properly to insure maximum holding power. The base of the clip should be applied to the live or long end, and the U-bolt against the dead or short end of the wire rope. Wire rope thimbles are required to insure the best loop protection.

One additional clip should be attached when using a rope having an IWRC or strand core.

\*The number of clips shown above is the minimum recommended for ordinary usage. For heavy-duty ropes or where there is a possibility of property damage or personal injury, the number of clips used should be increased by one or preferably two for each rope end.

## WIRE ROPE CLIPS

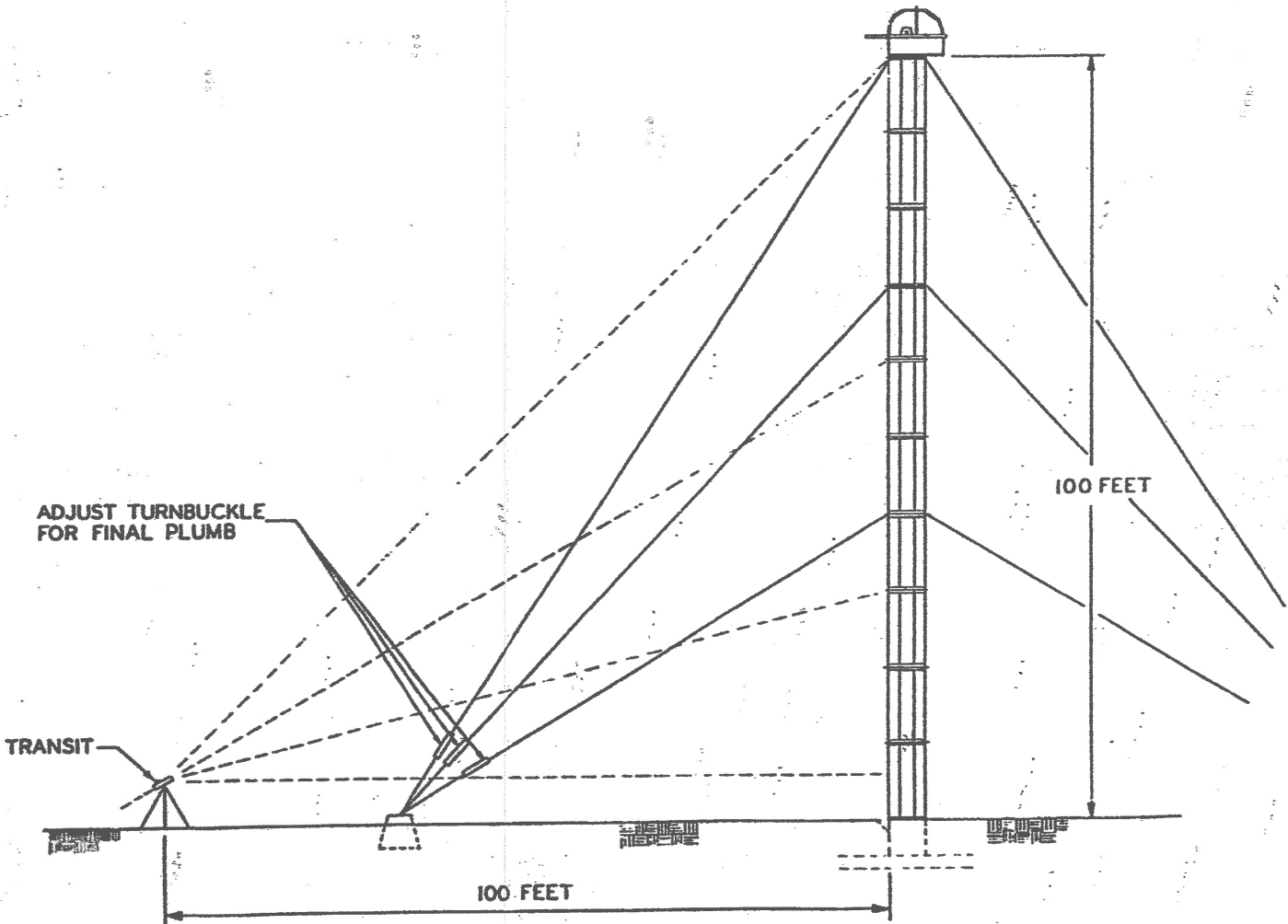
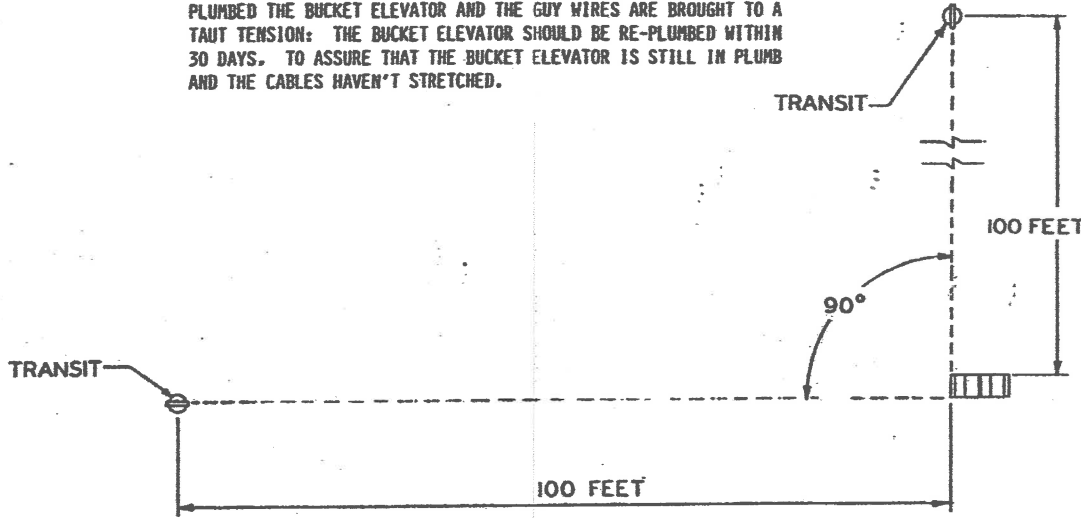


"Never saddle a dead horse"

	A	B	C
Rope Diameter Inches	Number of Clips (Minimum*)	Center to Center Spacing of clips, Inches	Length of Rope Turned Back, Exclusive of Eye, Inches
1/8	2	1-1/8	6
3/16	2	1-1/8	8
1/4	2	1-1/2	8
5/16	2	1-7/8	10
3/8	2	2-1/4	10
7/16	3	2-5/8	12
1/2	3	3	12
9/16	3	3-1/2	14
5/8	3	3-3/4	16
3/4	4	4-1/2	20
7/8	4	5-1/4	24
1	4	6	30
1-1/8	5	6-3/4	36
1-1/4	5	7-1/2	40

# PLUMBING WITH A TRANSIT

PLUMBING WITH A TRANSIT IS THE BEST METHOD FOR ALIGNMENT AND ACCURACY. FOLLOW THE INSTRUCTIONS AS INDICATED. THE IMPORTANCE OF ACCURATE ALIGNMENT CAN'T BE STRESSED ENOUGH. AFTER YOU HAVE PLUMBED THE BUCKET ELEVATOR AND THE GUY WIRES ARE BROUGHT TO A TAUT TENSION; THE BUCKET ELEVATOR SHOULD BE RE-PLUMBED WITHIN 30 DAYS, TO ASSURE THAT THE BUCKET ELEVATOR IS STILL IN PLUMB AND THE CABLES HAVEN'T STRETCHED.



PLUMBING WITH A TRANSIT

FIG. NO. 12

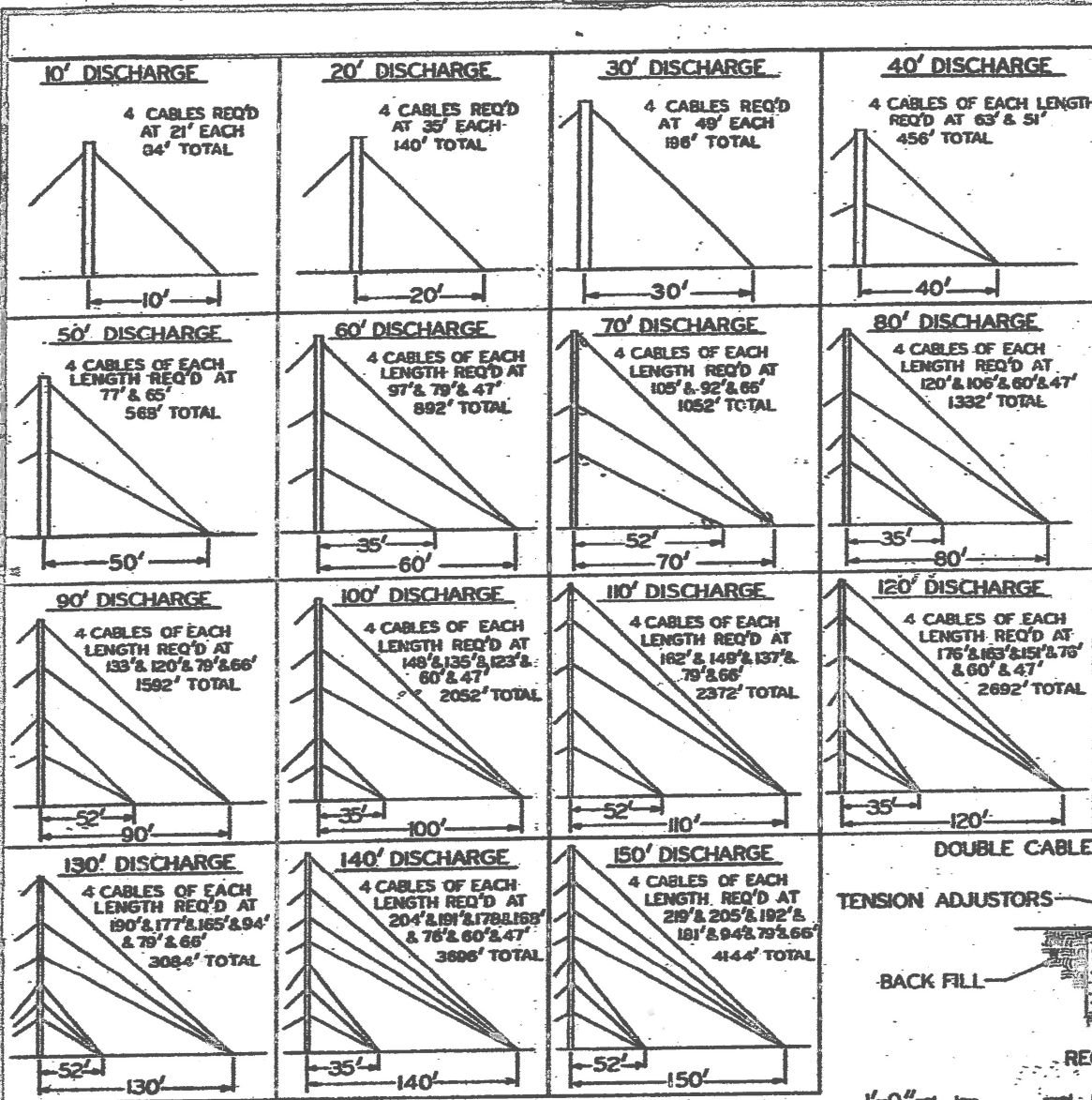


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PLUMBING WITH A TRANSIT



**FIG. NO. 13A**

**GUYING DETAIL**

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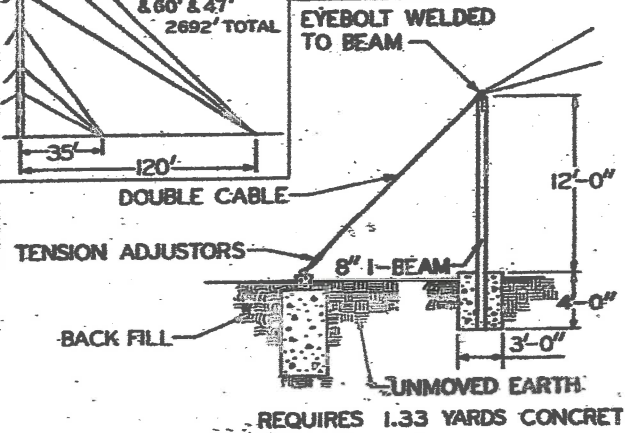
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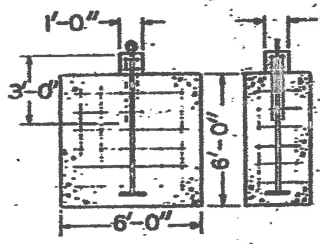
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DATE

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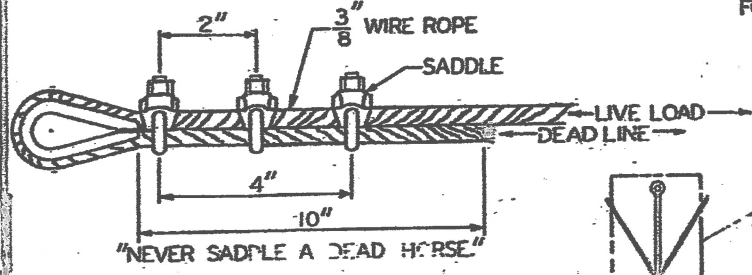


REQUIRES 1.33 YARDS CONCRETE

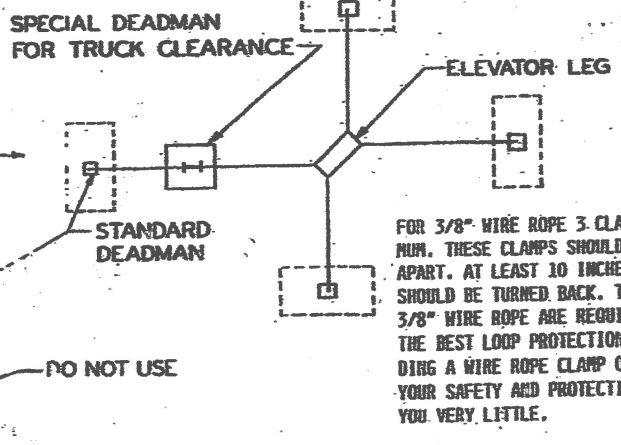


STANDARD DEADMAN-REINFORCEMENT IS #4 REBRO (A615, INTERMEDIATE GRADE 40) TIED TOGETHER. CONCRETE IS TO BE 3000 PSI AT 28 DAYS. CURE ON TOP IS TO BE Poured CONTINUOUS WITH MAIN DEADMAN SHOULD BE PLACED ON UNDISTURBED SOILBED WITH FACE TOWARD LEG AGAINST UNDISTURBED SOIL. REQUIRES 4.04 YARDS OF CONCRETE AND 158' OF #4 REBRO.

- NOTE: WE RECOMMEND THE FOLLOWING.**
- ALL CABLE SHOULD BE 3/8" PROPERLY CLAMPED (7 x 19 AIRCRAFT TYPE).
  - USE OF SCREW ANCHORS IS STRONGLY DISCOURAGED-SEE DEADMAN DETAILS FOR RECOMMENDED CONCRETE DEADMAN.
  - USE OF GUYING BRACKETS TO ATTACH TO LEGGING.
  - GUYING IS BASED ON 20' INTERVALS ON AFFORDABLE SERIES BUCKET ELEVATOR. 3/8" WIRE ROPE CLAMPS MUST BE USED. THREE (3) CLAMPS PER CONNECTION.
  - THESE ARE RECOMMENDATIONS BASED ON STANDARD ENGINEERING PRACTICES AND EXPERIENCE. NO LIABILITY IS ASSUMED BY HUNTER'S WORLDWIDE SYSTEMS, INC.



"NEVER SADDLE A DEAD HORSE"

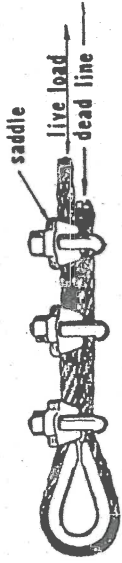


FOR 3/8" WIRE ROPE 3 CLAMPS IS THE MINIMUM. THESE CLAMPS SHOULD BE SPACED 24" APART. AT LEAST 10 INCHES OF WIRE ROPE SHOULD BE TURNED BACK. THIMBLES FOR 3/8" WIRE ROPE ARE REQUIRED TO INSURE THE BEST LOOP PROTECTION. NOTE THAT ADDING A WIRE ROPE CLAMP OR TWO ADDS TO YOUR SAFETY AND PROTECTION AND COSTS YOU VERY LITTLE.

HUNTER'S WORLDWIDE SYSTEMS, INC. CANNOT BE HELD LIABLE DUE TO FAULTY INSTALLATION OR NEGLECT ON BEHALF OF THE INSTALLER.

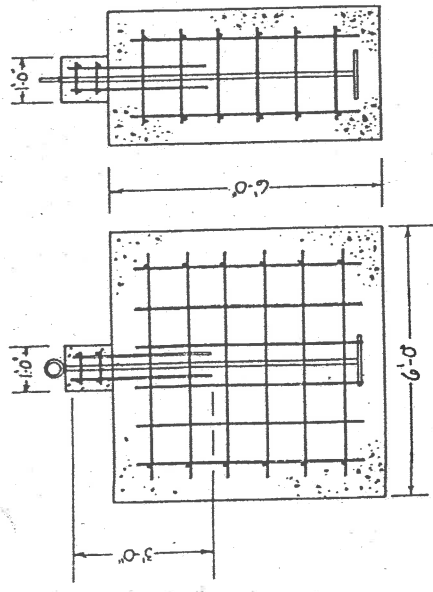


WIRE ROPE CLIPS



STANDARD DEADMAN - REINFORCEMENT IS #4 REBOD (ALIAS INTERMEDIATE GRADE 40) TIED TOGETHER. CONCRETE IS TO BE 3000 PSI AT 28 DAYS. CUBE ON TOP IS TO BE Poured CONTINUOUS WITH MAIN DEADMAN SHOULD BE PLACED ON UNDISTURBED SOIL WITH FACE TOWARD LEG AGAINST UNDISTURBED SOIL.

REQUIRES 4.04 YARDS OF CONCRETE AND 158' OF #4 REBOD



STANDARD DEADMAN

SPECIAL DEADMAN FOR TRUCK CLEARANCE

ELEVATOR LEG

EYESBOLT WELDED TO BEAM

DOUBLE CABLE

TENSION ADJUSTERS

UNMOVED EARTH

BACK FILL

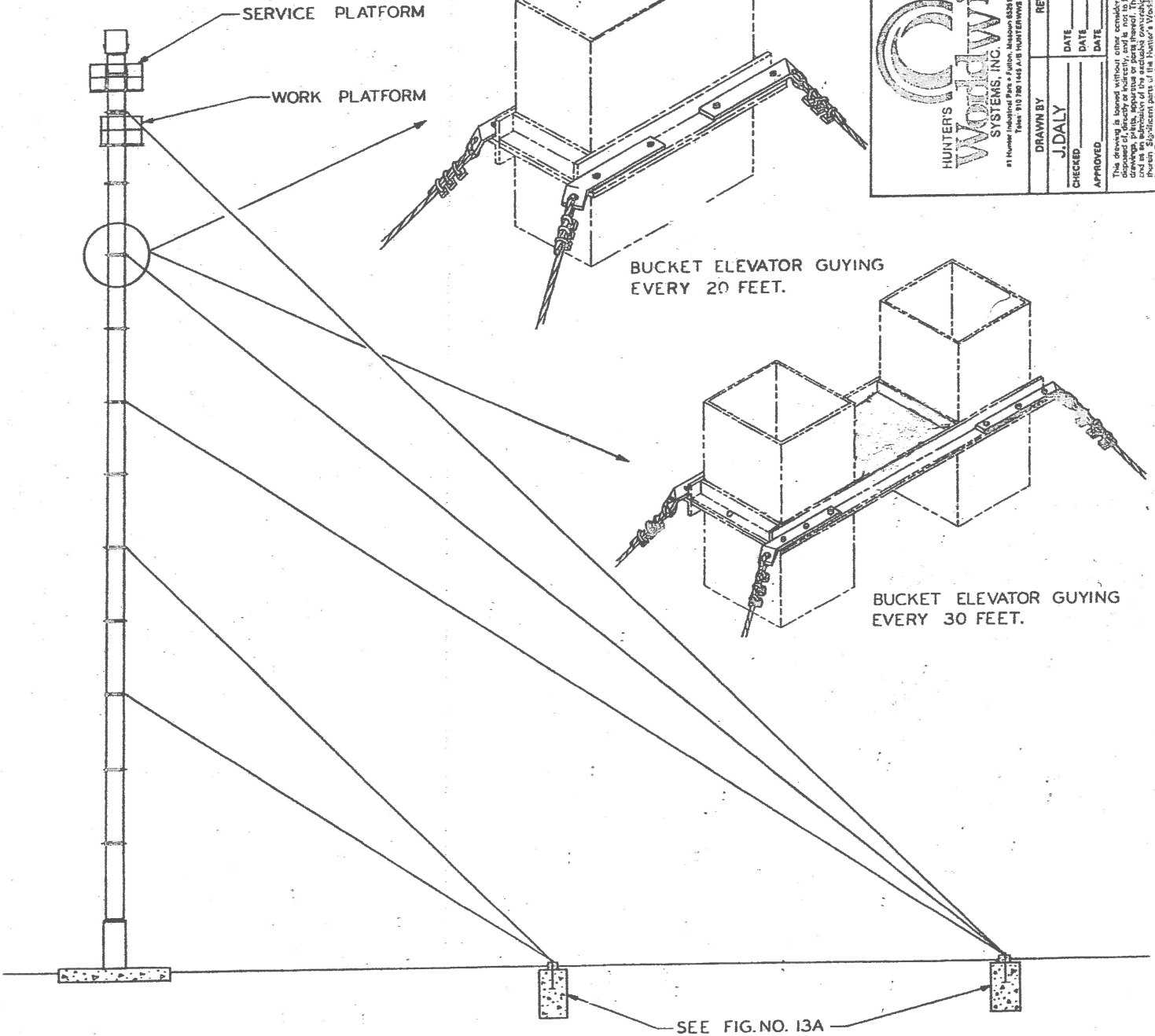
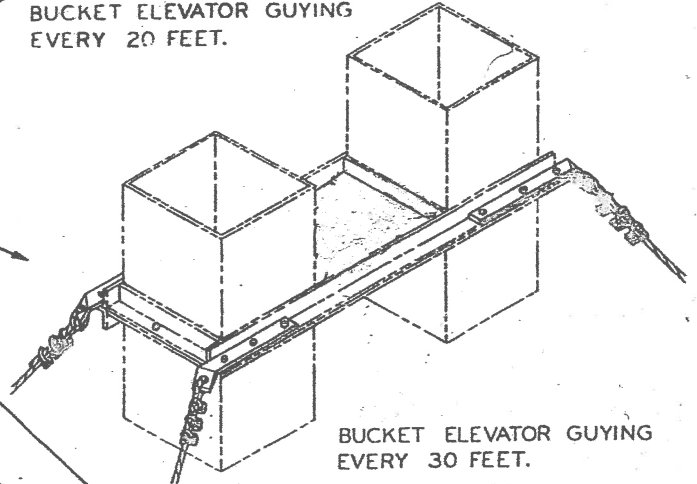
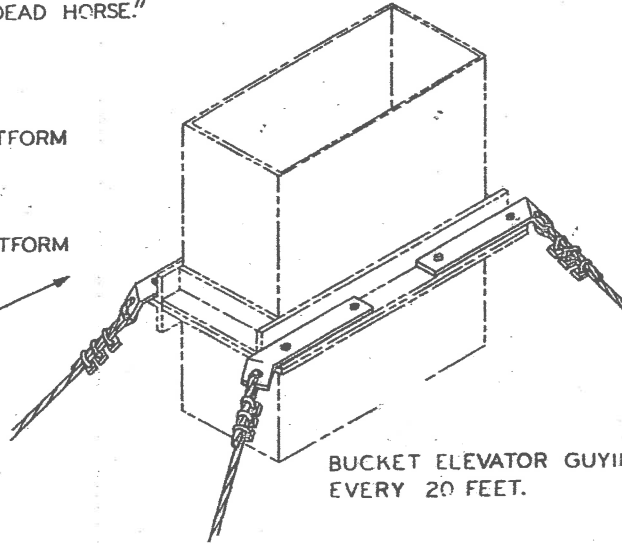
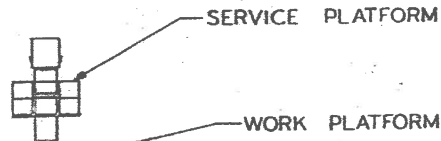
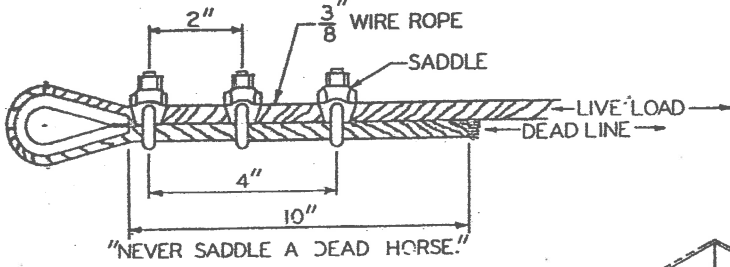
I-BEAM

REQUIRES 1.33 YARDS CONCRETE

FOR 3/8" WIRE ROPE 3 CLAMPS IS THE MINIMUM. THESE CLAMPS SHOULD BE SPACED 2 1/4" APART. AT LEAST 10 INCHES OF WIRE ROPE SHOULD BE TURNED BACK. THIMBLES FOR 3/8" WIRE ROPE ARE REQUIRED TO INSURE THE BEST LOOP PROTECTION. NOTE THAT ADDING A WIRE ROPE CLAMP OR TWO ADDS TO YOUR SAFETY ; PROTECTION AND COSTS YOU VERY LITTLE.



# GUY CABLE BRACKETS



<p>HUNTERS WORLDWIDE SYSTEMS, INC. #1 Hunter Industrial Park • Fulton, Missouri 65201 • (314) 643-1800 Telex: 810 380 1445 A/B HUNTERWMS CDMA</p>	<p>GUY CABLE BRACKET</p>		<p>FIG. NO. 13B</p>	
	<p>DRAWN BY J. DALY</p>	<p>CHECKED</p>	<p>APPROVED</p>	<p>SCALE: NONE</p>
<p>REVISIONS</p>		<p>DATE</p>	<p>ORDER NO.</p>	<p>DATE</p>

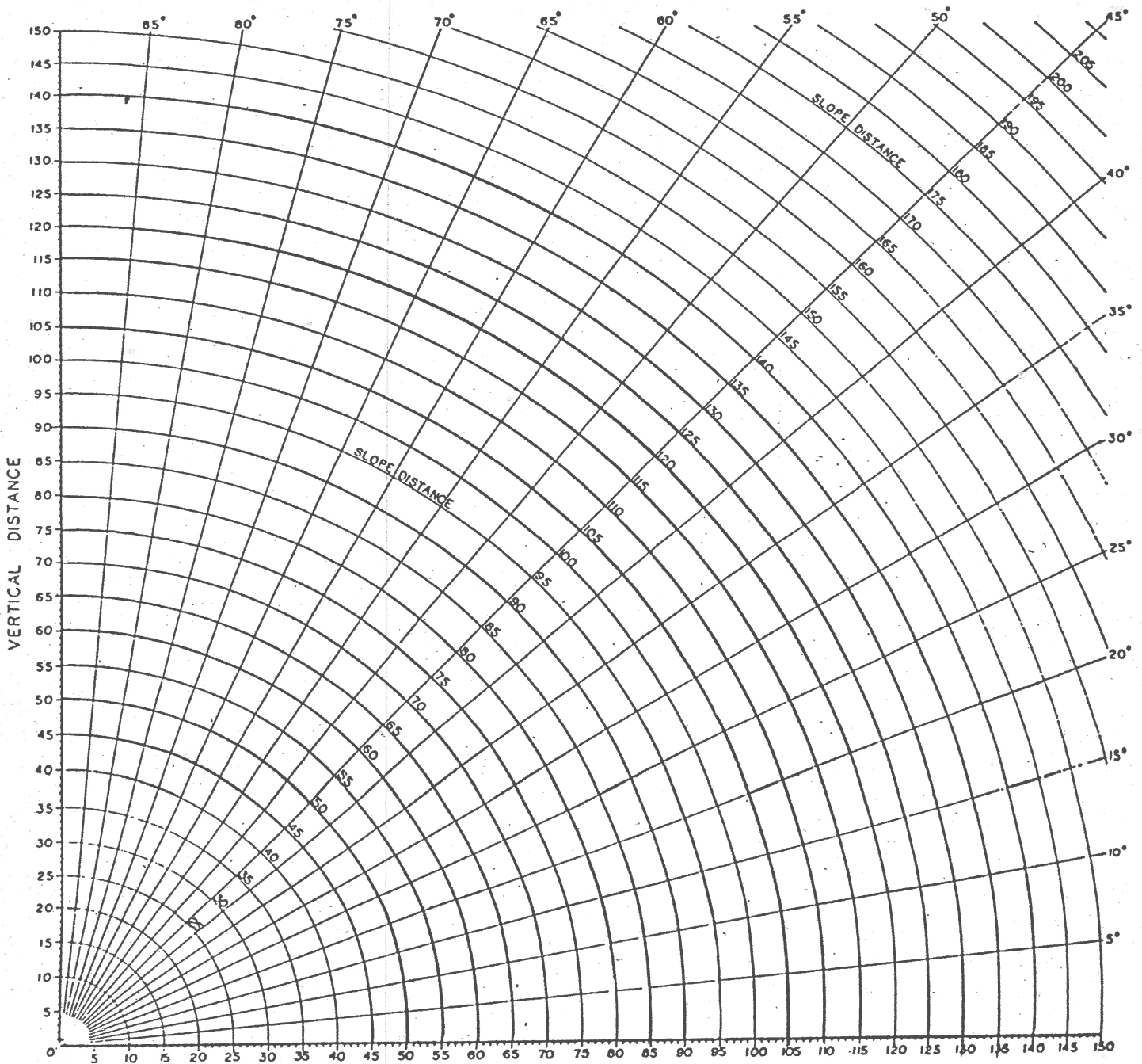
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## CHART FOR FIGURING DOWNSPOUT LENGTH AND ANGLE OF DOWNSPOUT SLOPE

### HOW TO USE CHART

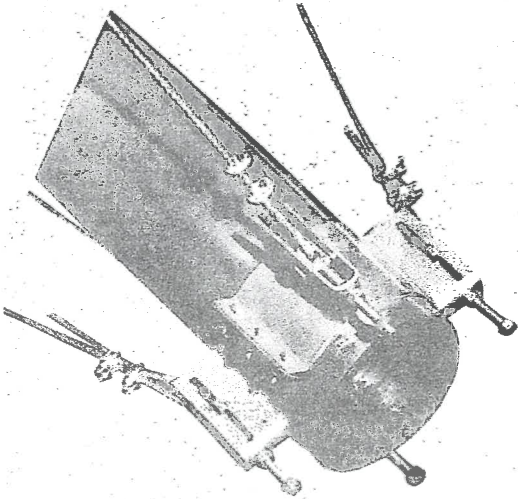
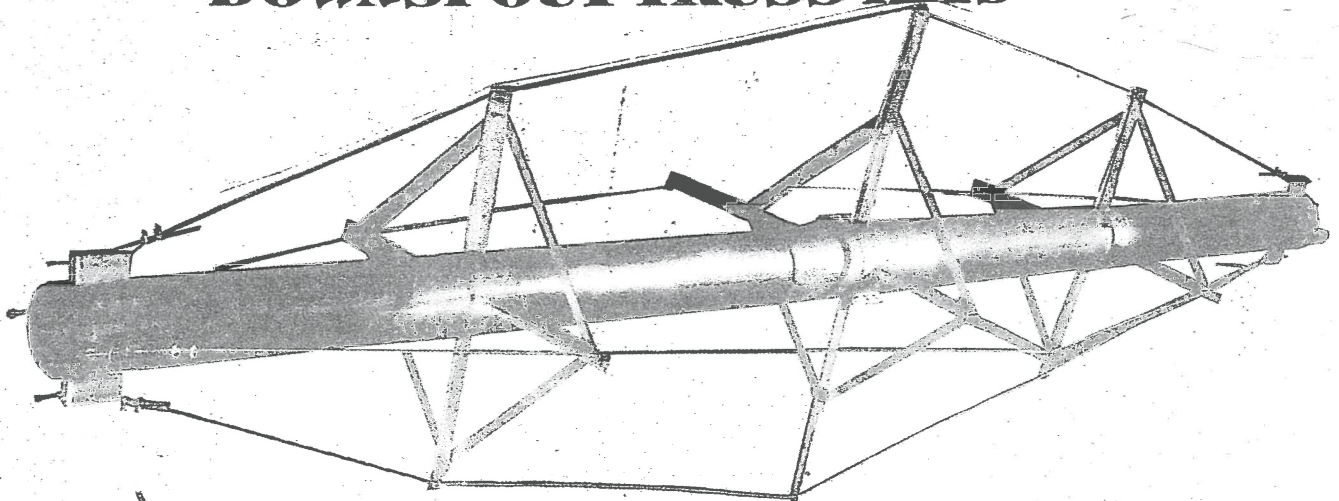
For length and slope of spout — Read across bottom of Chart for distance from Leg to Center of Bin. Follow line up to Vertical Height for Distance from Top of Bin to Discharge of Leg. Read on Curve the Slope Distance and approximate slope of Downspout.



## TROUBLE SHOOTING

PROBLEM	CAUSE	SOLUTION
Back Legging	Belt Loose	Tighten take up or shorten belt when necessary.
	Bent Cups	Replace or straighten; find out reason for being bent.
	Obstruction in Head Discharge, Distributor, or Spouting	Visually inspect and remove obstruction or repair.
	Spouting too flat	Angle to be 37 1/2° or steeper for dry material, wet material requires 45° angles.
	Overfeeding	Check power pit output; make adjustment at inlet.
	Air Locked	Vent may be needed at the boot or in the head.
	Head Baffle not adjusted	Clearance in the head should be approximately 1/4" between the cup and baffle at the splice.
	Buckets loose	Tighten all bucket bolts securely.
	Overloading	Check loading capacity.
	Wrong Head Shaft Speed	Correct sheaves, check motor speeds (drives calculated on motor speeds of 1750 RPM)
Cups not full	Under feeding	Check power pit output
Caking on cups	Material wet or powder type	Material too wet
Noise in up-leg	Cups fully loaded	System okay. Full cup will pump grain up on elevator for several feet. The noise is material rolling off.
Belt runs to one side	Out of plumb	Re-check and align.
	Bearing on head uneven	Shim lower side until belt centers.
Bent cups	Belt loose	Tighten take-up or shorten belt when necessary.
	Leg bowed and catching	Re-plumb
	Obstruction within leg	Repair or remove
Build up on boot pulley	Powder or sticky material	Slatted boot pulley required
Low capacity	Air lock	Venting of bins you are loading or venting on elevator head or boot.
	Spouting too small or too flat	Check recommendations for sizing and slope.
	Not feeding enough	Check to insure you are getting the required material to the elevator. Timing by visual check is not good enough.
	Belt loose	Check for slippage; make sure belt is snug. Check head pulley lagging and replace if worn.
	Baffle plate in conveyor hopper adjusted too low	Raise baffle plate
	Obstruction in boot or feeding boot in wrong location	Remove and replace damaged cups; check recommendations enclosed.
	Wrong head R.P.M.	Check enclosed specifications for YOUR elevator.
	Cups caked or bent	Visually inspect, clean, or replace damaged cups.
Excessive belt slippage or burning	Head pulley lagging worn or loose	Replace with factory recommended lagging.
Excessive belt looseness	Belt has stretched	Adjust belt tension with boot pulley adjusting screws. If screws have reached the end of their adjustment, it will be necessary to re-splice belt.
Elevator leg being overloaded	Pit conveyor running too fast	Check conveyor speed. Check original packing list for correct sheaves.
	Head pulley running too slow	Check pulley speed. Check packing list to be sure correct sheaves are properly installed. Check speed reducer for correct reduction ratio.

# DOWNSPOUT TRUSS KITS



DOWNSPOUT TRUSSKIT, HUNTER'S WORLDWIDE UNIQUE DOWNSPOUT TRUSSKIT ALLOWS EASE OF INSTALLATION DUE TO UNIQUE DESIGNS. WE RECOMMEND TRUSSKITS TO BE USED ON ANY SPOUTING RUNS THAT ARE LONGER THAN 50' REGARDLESS OF DIAMETER OF SPOUTING. OUR UNIQUE DESIGN INCORPORATES THE TENSION TAKE-UP THAT IS BUILT INTO THE END CLAMP AND PROTECTS CABLE FROM LOOSENING, SEE INSTRUCTION MANUAL FOR FURTHER DETAILS. TRUSSKIT DOES NOT INCLUDE CABLE OR CLAMPS. THIS IS A GENERAL SUGGESTION FOR TRUSSING SPOUTING, IT IS SUBJECT TO WIND CONDITIONS, ANGLE OF SPOUT, LOAD FACTORS, CONSULT LOCAL ENGINEER FOR YOUR REQUIREMENTS.

## 60 FT. TRUSSKIT LESS CABLE & CABLE CLAMP

- 1 - DEAD END SPOUT CLAMP
- 1 - TAKE UP END SPOUT CLAMP
- 1 - 6 FT. CENTER TRUSS SUPPORT

## 80 FT. TRUSSKIT LESS CABLE & CABLE CLAMP

- 1 - DEAD END SPOUT CLAMP
- 1 - TAKE UP END SPOUT CLAMP
- 1 - 8 FT. CENTER TRUSS SUPPORT
- 2 - 6 FT. SIDE SUPPORT TRUSS

PART NO.	SIZE	SHIPPING WT.
80TK06	6" DIA.	212
80TK08	8" DIA.	216
80TK10	10" DIA.	220
80TK12	12" DIA.	224
80TK14	14" DIA.	239
80TK16	16" DIA.	254
80TK18	18" DIA.	269
80TK20	20" DIA.	284
80TK24	24" DIA.	299
80TK26	26" DIA.	314

PART NO.	SIZE	SHIPPING WT.
60TK06	6" DIA.	171
60TK08	8" DIA.	175
60TK10	10" DIA.	179
60TK12	12" DIA.	183
60TK14	14" DIA.	198
60TK16	16" DIA.	213
60TK18	18" DIA.	228
60TK20	20" DIA.	243
60TK24	24" DIA.	258
60TK26	26" DIA.	273

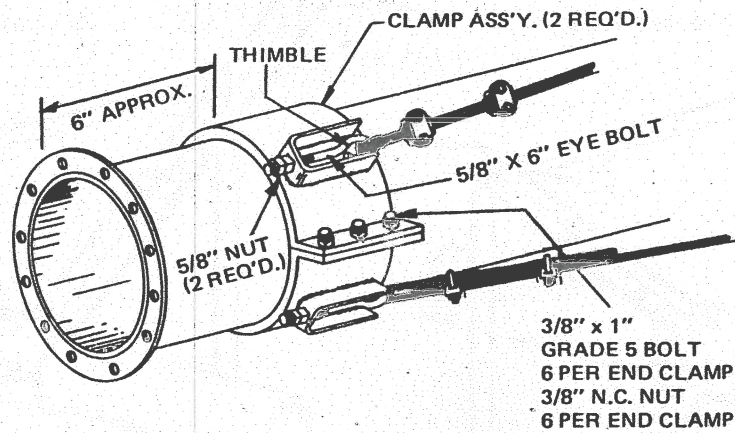
## 100 FT. TRUSSKIT LESS CABLE & CABLE CLAMP

- 1 - DEAD END SPOUT CLAMP
- 1 - TAKE UP END SPOUT CLAMP
- 1 - 8 FT. CENTER TRUSS SUPPORT
- 2 - 6 FT. SIDE SUPPORT TRUSS

PART NO.	SIZE	SHIPPING WT.
100TK06	8" DIA.	232
100TK08	8" DIA.	236
100TK10	10" DIA.	240
100TK12	12" DIA.	244
100TK14	14" DIA.	259
100TK16	16" DIA.	274
100TK18	18" DIA.	289
100TK20	20" DIA.	304
100TK24	24" DIA.	319
100TK26	26" DIA.	334

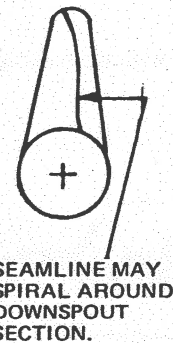
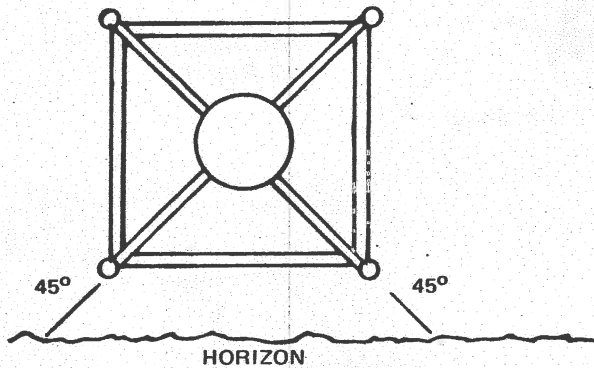


# TRUSS KIT ASSEMBLY



Position truss assemblies as shown. Bolt on tie straps.

Equally space, the spider assemblies 1/2, 1/3 or 1/4 of the distance between end clamps, as shown below, to insure uniform support from the truss cables.



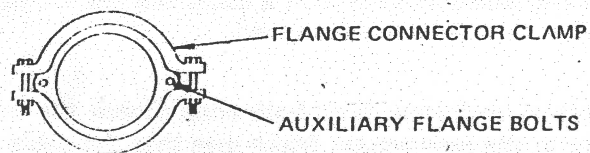
SEAMLINE MAY SPIRAL AROUND DOWNSPOUT SECTION.

**TRUSS ORIENTATION:** The downspout should always be supported by two cables with the spider arms oriented 45° from the horizon as shown in the detail. The spider arms and truss adjustment clamps should be placed directly in line with each other. The downspout seamline does not always make a good reference line because the seamline may spiral around the tube centerline.

## DOWNSPOUT FLANGE CONNECTIONS

**NOTICE:**

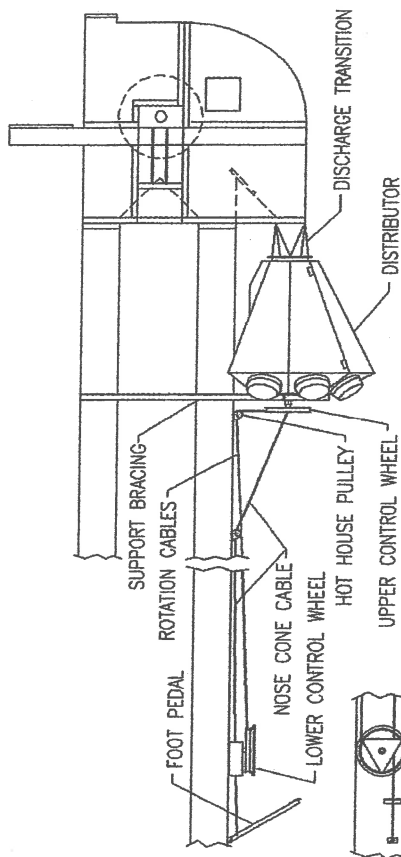
All bolted flange connections should use GRADE 5 or better bolts. Flange connector clamps should be supplemented with as many auxiliary bolts as possible. Connector clamps are not recommended for connecting multiple sections of spouting.



## MOUNTING INSTRUCTIONS

Special care should be exercised when installing a distributor on the head section of an elevator leg. When bolting the distributor to the discharge transition, make sure that all the bolts are in the top flange and are tightened properly, make sure that the distributor is plumb, and install a support brace across the up and down leg sections on both sides and weld to the bottom of the distributor. This will insure that extremely long spouts will not deflect the outside housing and make the inner spout extremely difficult to rotate. This brace should be strong enough material to support the size of the distributor that you are installing.

To install a cable control, bolt the upper control wheel to the pipe extending from the bottom of the case. At this time, weld two hot house pulleys, level with the center of the upper control wheel, to the leg casing. These pulleys should be approximately 15" apart, with the pulleys running vertical to route the cable toward the lower control wheel. Weld a third hot house pulley down approximately 5' for the trip cable. Then weld  $\frac{1}{2}$ " washers to each 10' of trunking for each cable, to keep the wind from blowing & twisting the cables together.



Install the mounting brackets and lower control wheel at the desired height. Note: Mount the bracket on slotted holes to allow for adjustment on a later date. Mount the foot pedal approximately 6" off the floor to allow for cleaning the floor. We recommend that you use  $\frac{3}{16}$ " aircraft cable to control the distributor. Each control wheel needs (1) complete wrap of cable in each direction to maintain full motion of the inner spout. The trip cable for the nose cone should be adjusted so that the nose cone will be raised before the pedal touches the ground.

If you purchased a pipe control for your distributor, mount the pipe control assembly to the floor perpendicular to the distributor. Purchase the correct length of  $1\frac{1}{4}$ " black pipe and drill a  $\frac{3}{8}$ " hole through the pipe 1" from the end, run the correct amount of  $\frac{3}{16}$ " cable thru the center of the pipe and splice the trip cable with a  $\frac{3}{16}$ " cable clamp. Bolt the pipe to the distributor using a  $\frac{3}{8}$ " x 3" bolt. Brace the pipe at 10' intervals. Attach the pipe to the pipe control. Run the cable thru the foot pedal pulley and connect trip cable to the control bracket. Adjust to raise nose cone before the foot pedal touches the floor.