

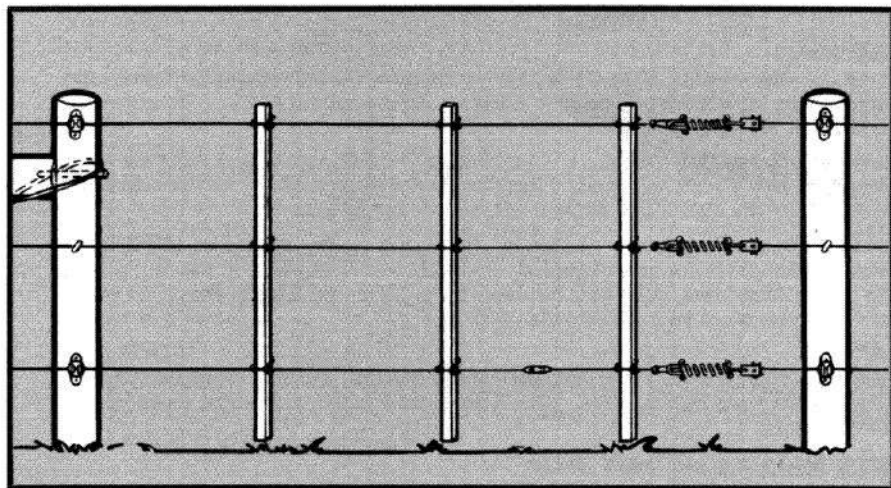
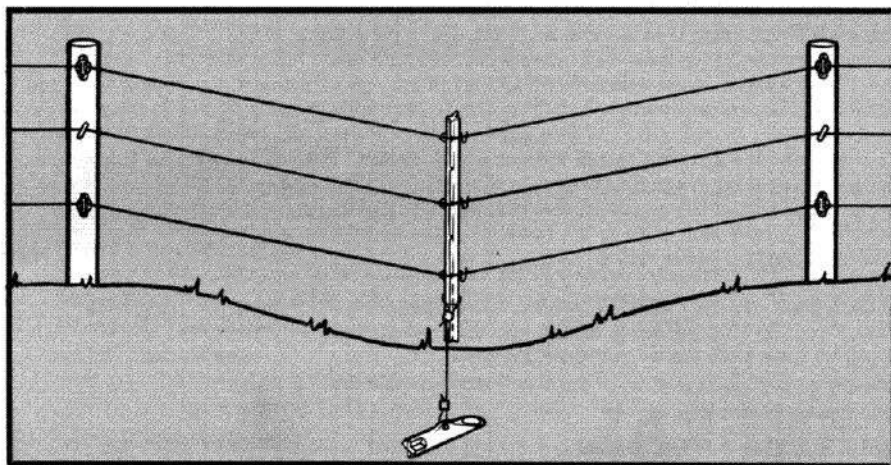
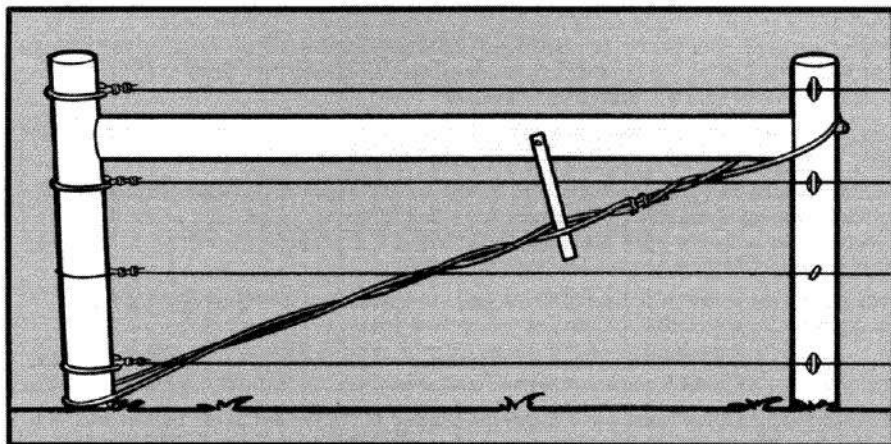
DARE HIGH TENSILE FENCE SYSTEM

Low cost, reliable permanent
fencing.

For livestock, predators and
wildlife.

Requires very
little maintenance.

Lasts a generation or more.



DARE Products, Inc.
P.O. Box 157
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INSTALLATION

High tensile fence is not hard to install once you have become familiar with the system. Study this instruction booklet. If possible, visit someone who has this style of fencing.

Start by making a rough sketch of the area to be fenced. The sketch need not be to scale, but write in the dimensions. Include all details such as 90° corners, sweeping bends, swing corners, and where gates are needed.

Refer to the fence designs in this booklet, and select the one most suited to your needs. See: FENCE DESIGNS. Prepare a material list. (Tool list provided)

Begin the installation by installing all of the ANCHOR posts. These are the main posts at the ends, corners and wherever changes of direction occur. Attach the bottom wire to these posts at the specified height using insulators or staples according to the design chosen. If staples are used, wire should be able to move freely in staples. Install strainers and springs and tighten to 250 lbs., or until springs measure approximately 7½". Refer to GENERAL CONSTRUCTION DETAIL: Spring and Strainers.

The bottom wire will now serve as a guide wire or chalk line to aid in placing the rest of the fence posts. Install the balance of the brace posts, brace rails, and line posts.

We recommend line post spacing of 100 ft. with battens every 25 ft. This combination will provide a strong, economical, permanent fence that is easy to install. Line posts may be spaced closer or further apart according to the terrain and personal preference. Battens may be eliminated with post spacing less than 40 ft. apart.

Line posts may be pressure treated wood, large fiberglass T or fiberglass round posts. Fiberglass is easy to install, but if used, every third post should be wood.

The corner and end braces are the most important elements of the system, so particular attention must be paid to their construction and installation. Refer to: END AND CORNER BRACES.

It is necessary that the fence wires follow the contour of the ground. If the bottom wire is 6 inches from the ground, it should be roughly 6 inches above the ground uphill and down – thru dips and rises. To accomplish this, additional posts may have to be installed. Refer to: DIPS and RISES. Install posts accordingly, and attach bottom wire to posts at the specified height.

Once the bottom wire is in place in all posts, attach the balance of the insulators to the posts by measuring up from the bottom wire. Install all of the remaining wires, insulated and non-insulated. Insert strainers and springs in each wire, just as in the bottom wire, and tighten to 250 lbs. tension.

To maintain wire spacing, install battens every 25 feet. Battens are needed to maintain fence-wire spacing when line posts are more than 40 feet apart. Install battens above ground, approximately every 25 feet between line posts. Use a wire-bending tool to install the proper wire clips to the battens. Clips should be attached so as to allow lateral movement of the wires.

If electrified, use only a high-powered, low-impedence-style energizer. Install the energizer following the fence design and the manufacturer's instructions. Use of weed burning style fencer not recommended.

GENERAL CONSTRUCTION DETAILS

LINE POSTS

Wood, pressure-treated, 3" to 4" dia. x 8' for fences up to 54". For taller fences, use longer posts. Staple wires loosely to allow lateral movement of wire. Do not use railroad ties for fence posts.

Fiberglass, Heavy Duty T-Posts, 1" - 1¼" Face x 7'. If fiberglass line posts are used, every third post should be wood. Fiberglass is not recommended for non-electrified fences. Clip wires loosely to allow lateral movement of wire.

Steel T-Posts may be used for line posts. Maximum spacing should be 100 ft. for electrified and 20 ft. for non-electrified. Posts should be driven 2 ft. into the ground. It is desirable to use a wood post for every third line post. Battens should be used between posts when spacing exceeds 20 ft.

BATTENS

Dare 2490 Poly Battens, pressure-treated wood battens, or small fiberglass (5/8") electric fence posts may be used. Attach wires loosely to allow lateral movement of fence wires.

AUGER AND HAND DUG POST HOLES

Use a shale or tamping bar to carefully tamp the soil around post. Tamp only a few inches of dirt at a time, packing tightly. When completed the post should not move.

Attach lug to the bottom of Anchor and Dip posts.

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STRAINERS AND SPRINGS

Install in the middle of 1500 ft. spans. Pull wire thru not more than two 90° corners, one in each direction. Take into account all friction points such as dips, rises and changes of direction, and reduce footage accordingly.

We recommend the use of tension measuring springs on all wires wherever strainers are installed. The springs will absorb damaging blows and also help maintain the tension of the fence through heat and cold. The springs can also be used during installation to gauge the amount of tension being applied to the wires and thus prevent dangerous overtightening.

Tighten wires to proper tension. Install 1703/1713 strainer/spring combinations as noted above. Use #1701 handle to tighten strainers until springs measure 7½" (250#) on non-electrified fences and 8½" (150#) on electrified fences. The handle can be used to measure the springs - end of handle to rivet = 7½". Do not overtighten fence. Wear safety glasses, leather palm gloves and proper clothing when installing fence equipment.

LINE POST INSULATORS

Choose from four types of wood post insulators. The 2249 Pinlock nail-on, SNUG-HTN nail-on, 1710 Stap insulator, and the 1718/1724 Tube insulator. The 2249 Pinlock is error-proof and trouble-free.

For steel T-posts use only the 2550 T-Post Pinlock insulator.

CORNER AND END POST INSULATORS

The 1779 Wrap Around is best suited to apply electric fence wire to the outside of a corner and/or wrap a wire around an end post. The standard 1779 is 20 in. long and will fit posts 6 in. dia. and smaller. Longer wrap arounds available by special request.

When electrifying the inside of a corner, use the 451 assembly. To install, drill a 5/16" hole 4½" deep into post. Insert bracket to first bend.

WIRE DEREELER/SPINNING JENNY

High tensile wire is stiff, springy and coiled under tension. To uncoil, use a wire dereeler, wear gloves, safety glasses and use caution. Do not cut the coil tie wires until the coil is in place on the dereeler, the dereeler arms are bolted in place and the lead end of the wire is secured to something. Again, the wire is springy.

SPLICES

Use three splicing sleeves to splice two wires together. Only two splicing sleeves are required on end loops.

ENERGY LIMITER

Limits current to wires that may easily become shorted. Wires over a stream or close to ground. Prevents shorted wires from draining current from fence.

GROUNDING ENERGIZER

Use three galvanized ground rods and ground clamps. Drive into ground a minimum of 6 feet, spaced 10 ft. apart. Additional ground rods may be required in dry soil. Install 40 ft. or more from utility ground.

FENCE GROUNDING

If lightning is a concern, ground all non-electrified fence wires with one ground rod every 3,000 ft. for moist soil and every 1,500 ft. for dry soil.

SAFETY PRECAUTIONS

Wear safety glasses, leather palm gloves and proper clothing when installing fence equipment.

Install warning signs (#1614) not less than every 300 feet. Check local code.

Inform children of the electrified wires. Advise responsible people of the location of the cut-off switches and energizer.

Use a #1360 tester or #2411 meter to check presence of electrical current on fence line.

Follow the energizer manufacturer's instructions concerning use and grounding of the unit.

FENCE VISIBILITY

Before turning animals into a newly fenced area, flag the fence to improve visibility. Flag the top wire with rags or brightly colored surveyors tape at intervals of 50 to 75 ft. - at least one rag between every two posts. Or, attach electric polytape just above and parallel to the top wire. The polytape may or may not be electrified.

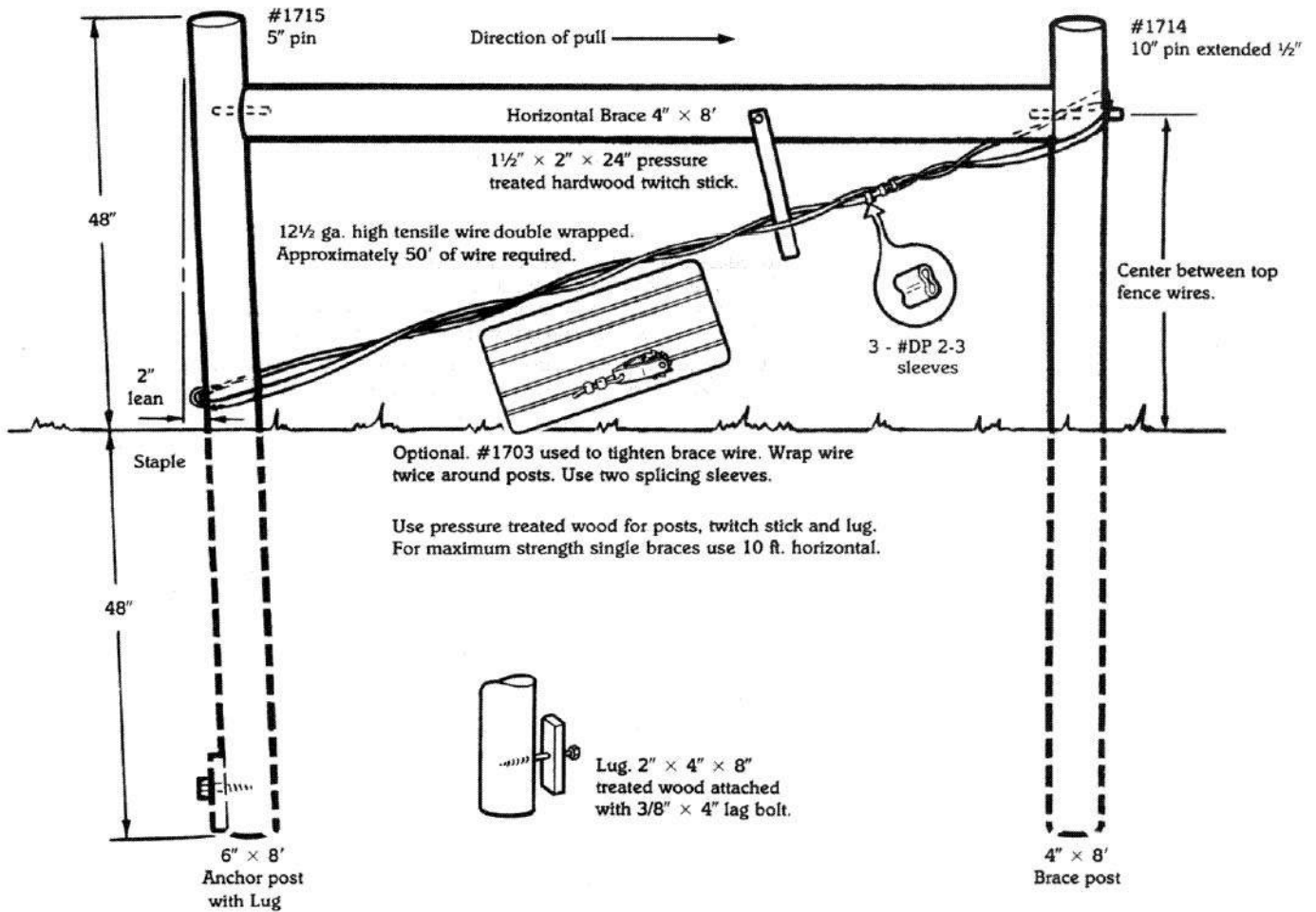
Horses should be led around a newly fenced and flagged field in order to familiarize them with the new fence.

DISCLAIMER

This booklet is only a guide for the installation of high tensile fence. The user shall determine the suitability of these instructions for his or her intended use and shall assume all risk and liability in connection therewith.

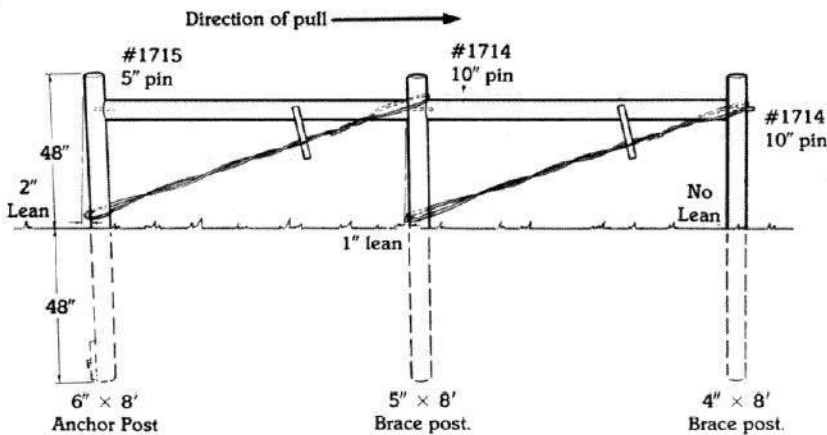
Single End Brace

For fences with up to 6 strands.



Double End Brace

For fences with more than 6 strands.



END AND CORNER

There are four basic end braces: Single end brace; double end brace; single 90° corner brace and the double 90° corner brace. All are variations of the single end brace.

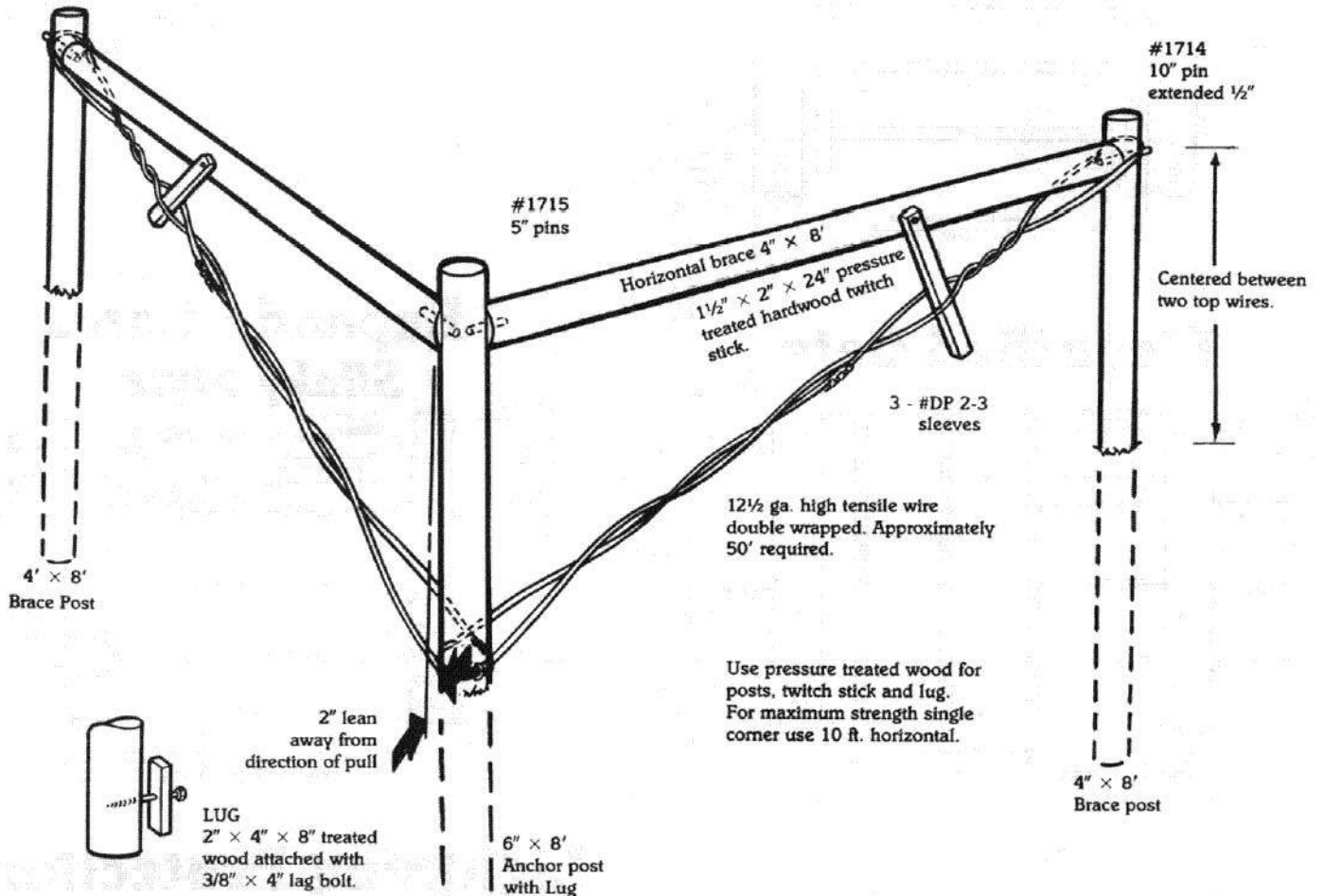
The corner and end braces are the most important elements of the high tensile fence system. Particular attention must be paid to their construction and installation.

For hand-set posts, the anchor post must have a lug at the bottom on the side opposite the direction of pull. Use a piece of 2" × 4" × 8" treated wood and attach to post with a 3/8" × 4" lag bolt. (Lug cannot be used on driven posts)

It is desirable to have the anchor post and some of the brace posts lean away from the direction of pull. Consult diagrams. This is done with a plumb bob prior to tamping the

Single Corner Brace

90° corner. For fences with up to 6 strands.



BRACES

dirt around the posts.

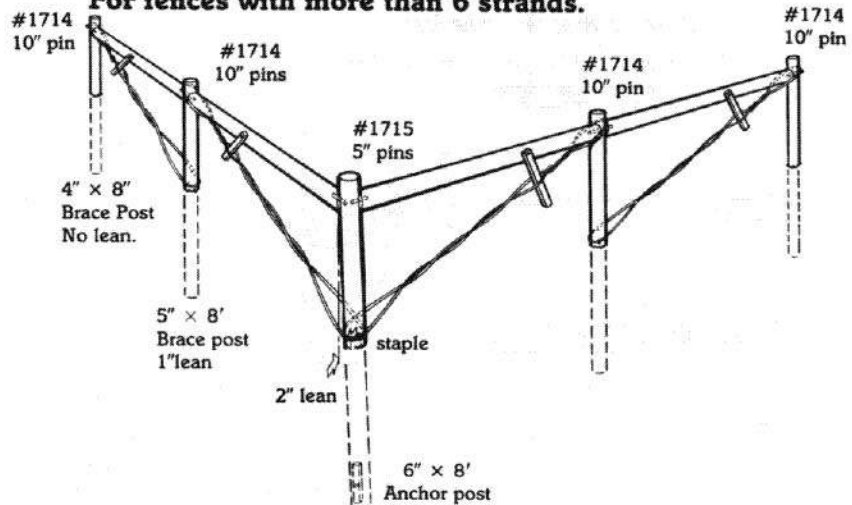
Pack the dirt solidly around each hand-set post. Use a shale or tamping bar and pack only a few inches of dirt at a time. Pack the dirt until post cannot be moved.

The horizontal brace must be a minimum of 8' long. Locate somewhere between 36" and 42" to the center from the ground. Preferably between top two wires, but within these dimensions.

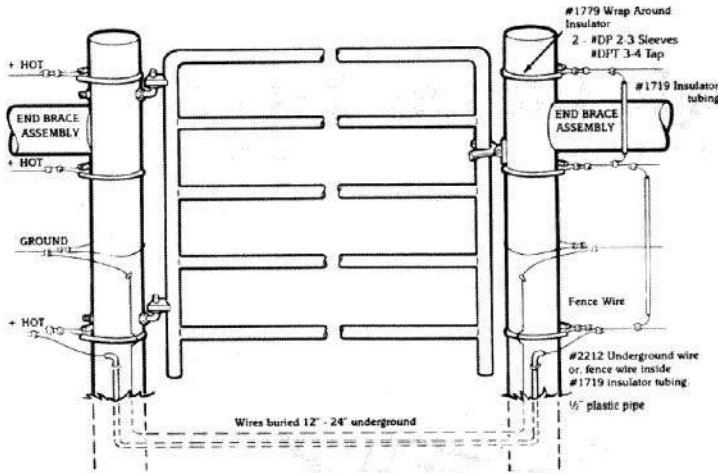
Brace wire, made of 12 1/2 gauge high tensile wire, is wrapped twice around the posts, pulled tight and then spliced with three DARE sleeves. A pressure-treated wood twitch stick is inserted to draw the brace wire tight. Do not over-tighten. 5 or 6 turns should be adequate. Nail or fasten the stick to the horizontal brace.

Double Corner Brace

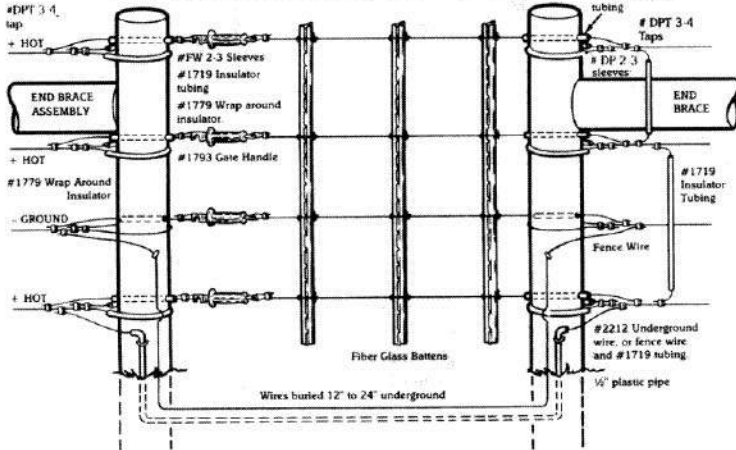
For fences with more than 6 strands.



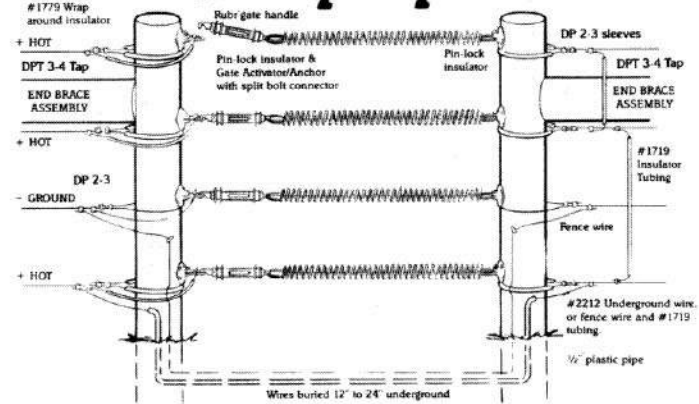
Steel Gate



Electrified Gate

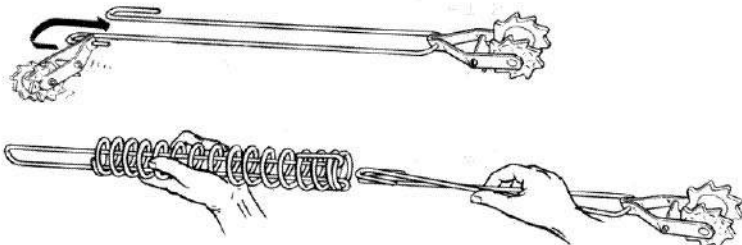


Expando Gates Slinky Style

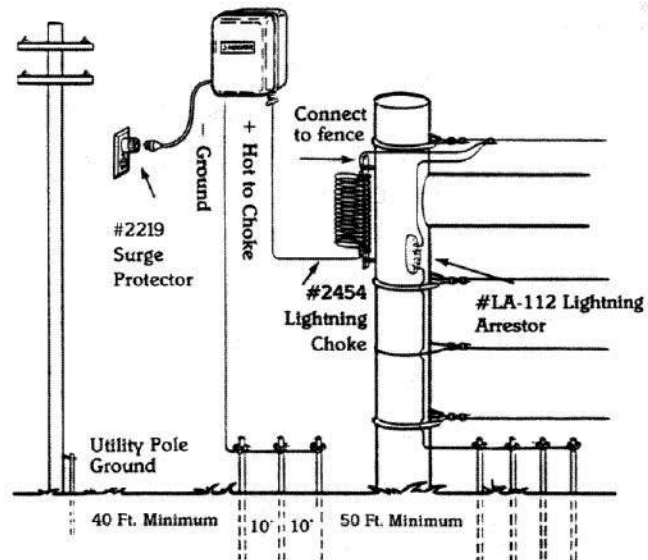


Spring and Strainer Assembly

1. Pull one wire form thru spring.
2. Thread strainer onto wire form.
3. Squeeze ends of wire form together and insert into spring.



Lightning Protection

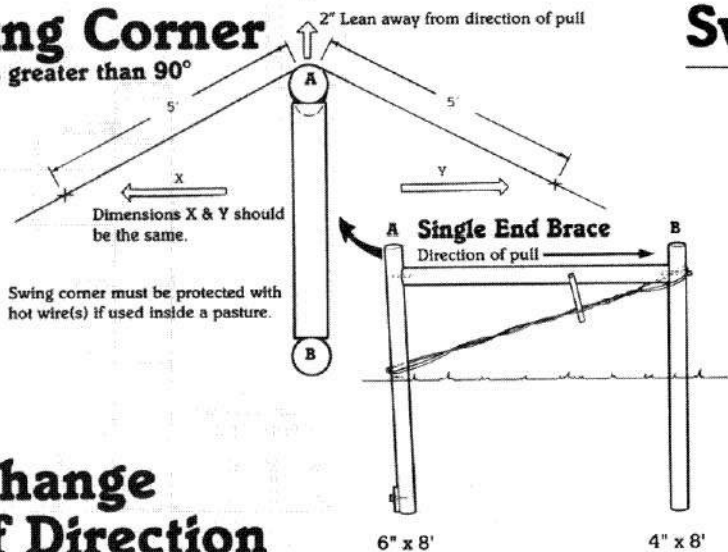


Lightning diverter ground system must be better than fence controller ground system.

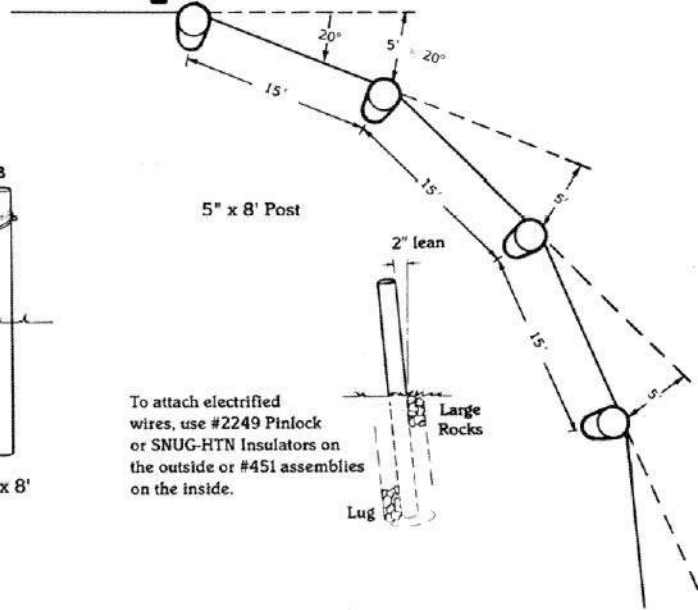
Change of Direction, Sweep Corner and Swing Corner

Swing Corner

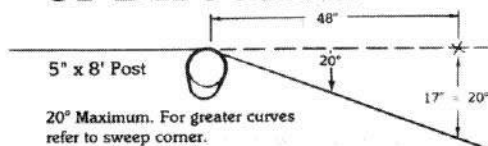
Corners greater than 90°



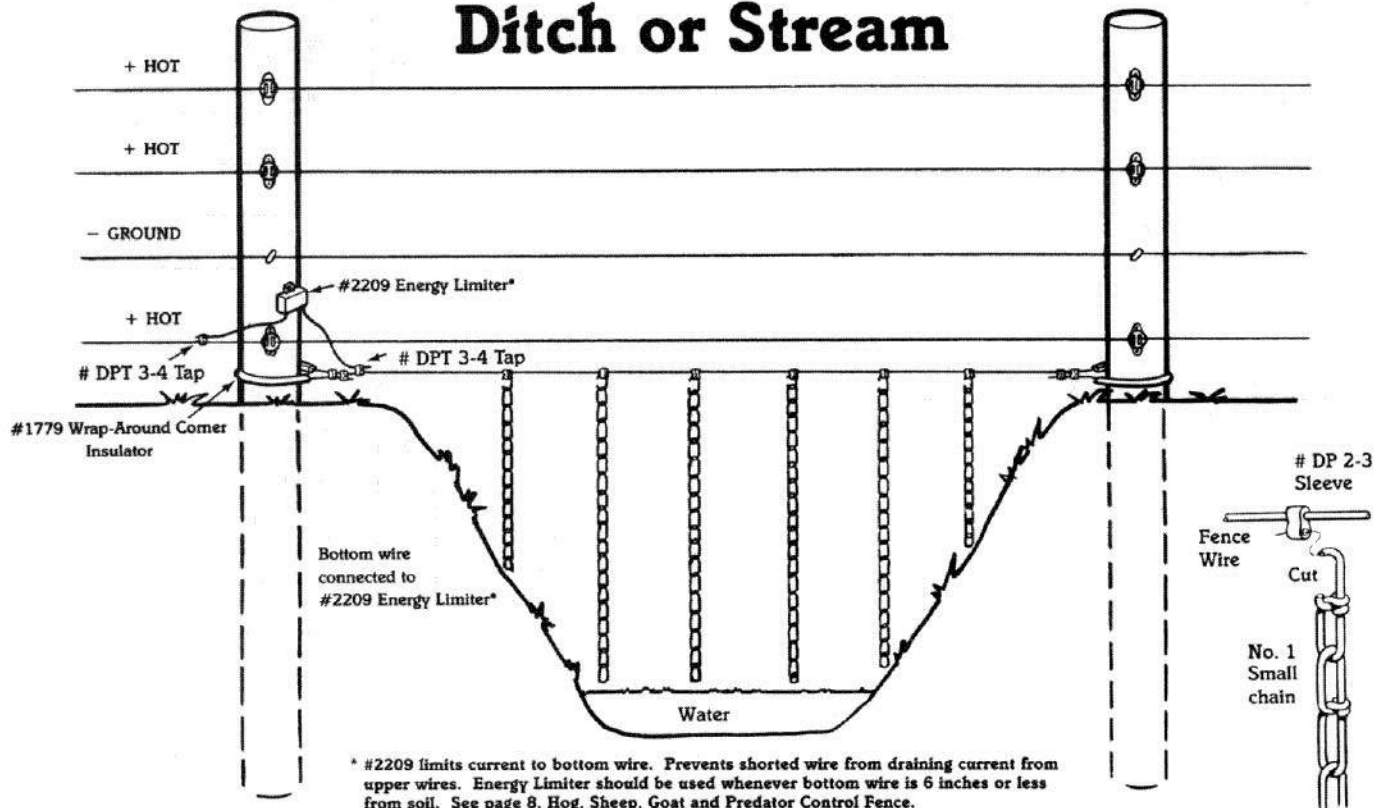
Sweep Corner



Change of Direction

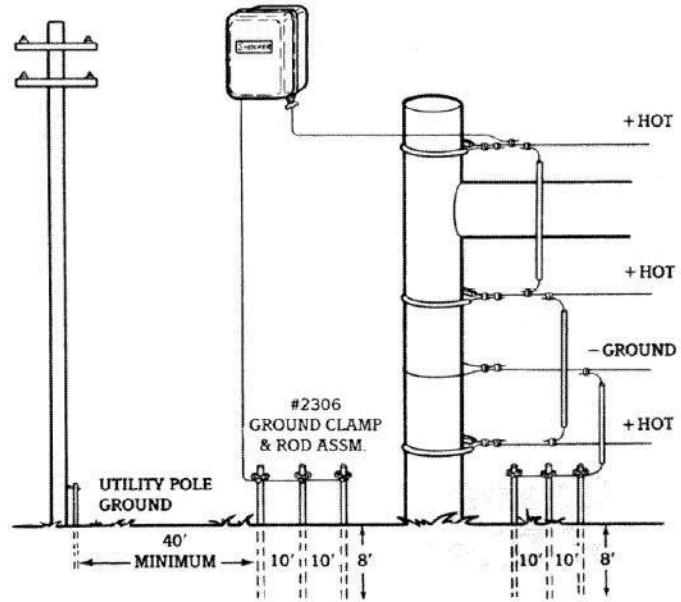
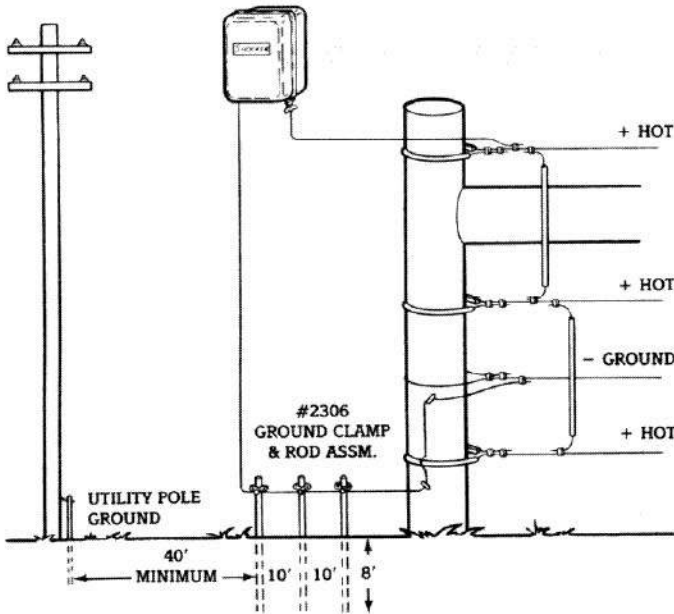


Ditch or Stream



Fence & Shocker Grounding

Three galvanized rods and clamps spaced 10 ft. apart and driven 8 ft. into soil. Additional rods may be needed in dry soil. Ground rods must be at least 40 ft. from nearest utility ground.

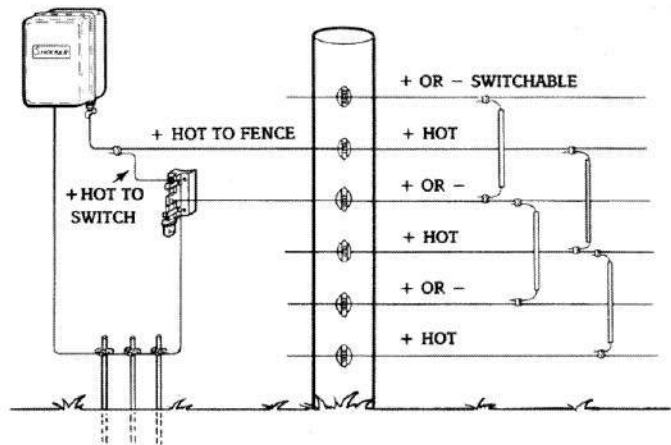


Safety Switches

Change polarity of selected wires

To obtain the most effective electric fence according to climatic conditions. When the ground is moist all of the wires should be energized for maximum effectiveness. During a dry spell or if the ground is frozen it is best to ground every other wire. System does not shut off entire fence.

#2199 Switch, double pole.
 Handle up: All wires "ON" (hot).
 Handle down: One-half of the wires "ON" (Hot) and one-half of the wires "OFF" and grounded.

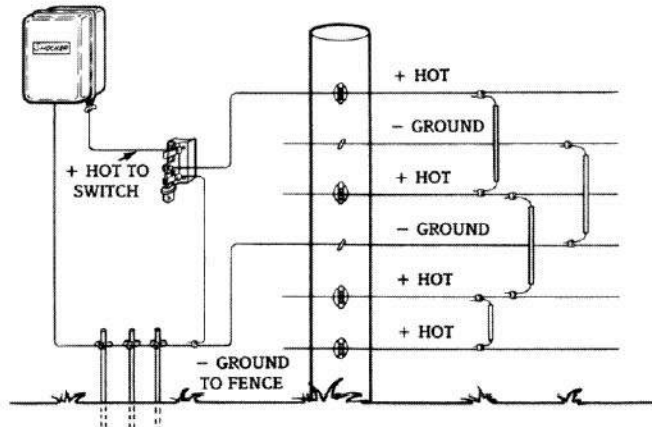


Safety Switches

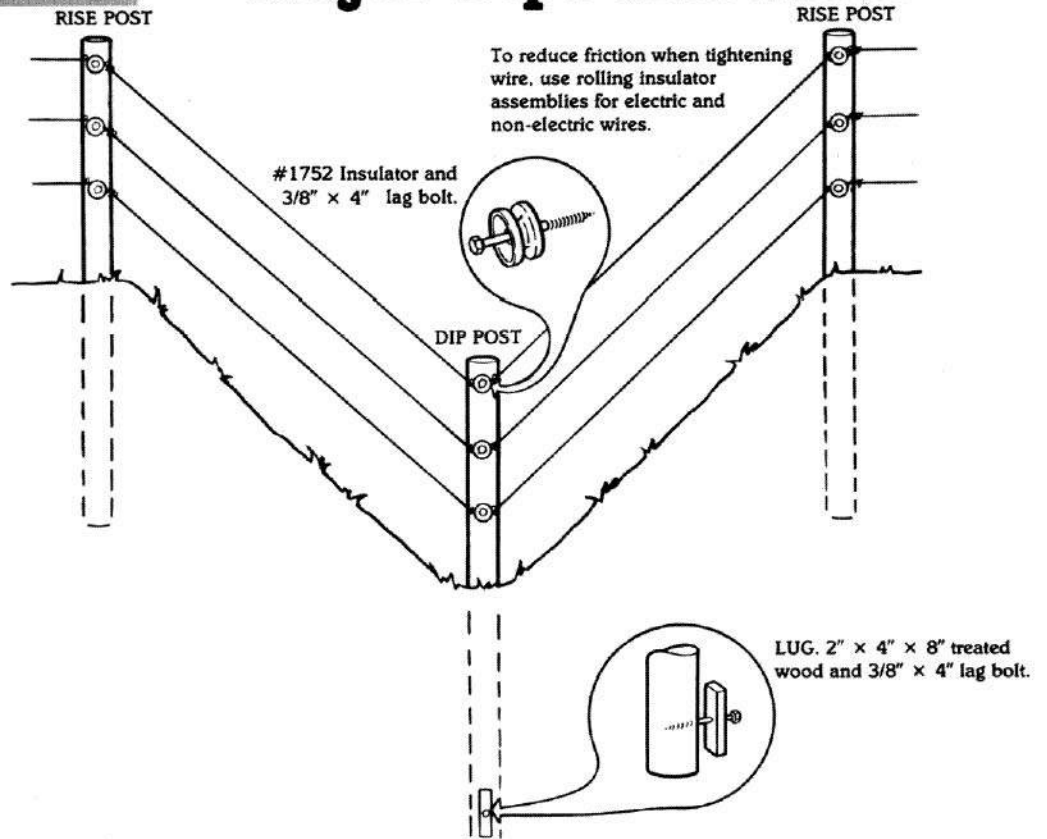
Disconnect and ground entire fence

Schematic illustrates how to change hot wires to ground and shut off entire fence.

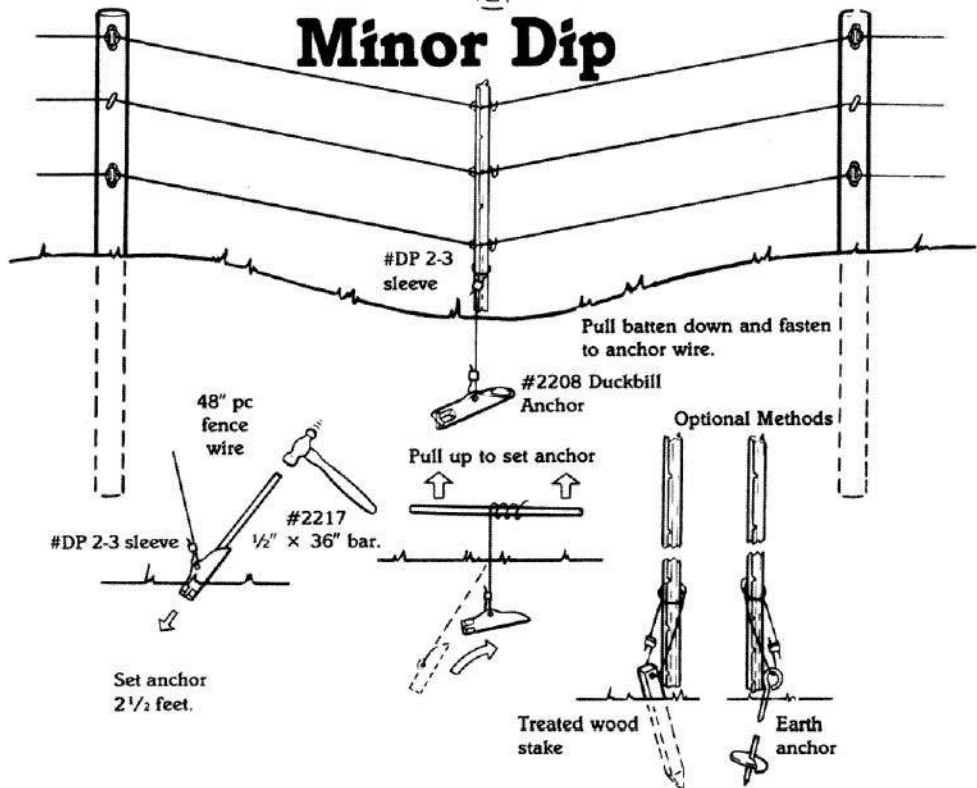
#2199 Switch, double pole. Handle up: Fence wire "ON" (hot). Handle down: Fence wire "OFF" (grounded) and entire fence grounded.



Major Dips and Rises



Minor Dip

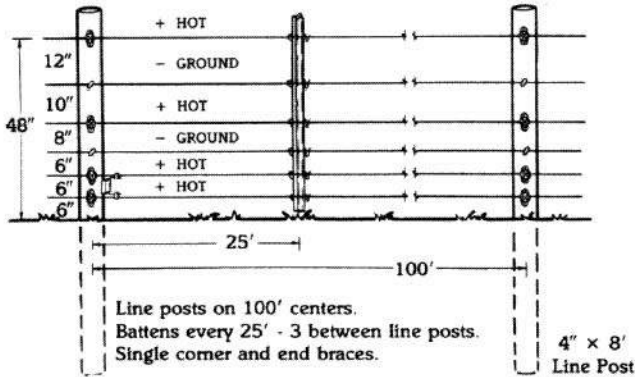


FENCE DESIGNS†

Suggested Spacing and Post Lengths

Hog, Sheep, Goat and Predator Control Fence.

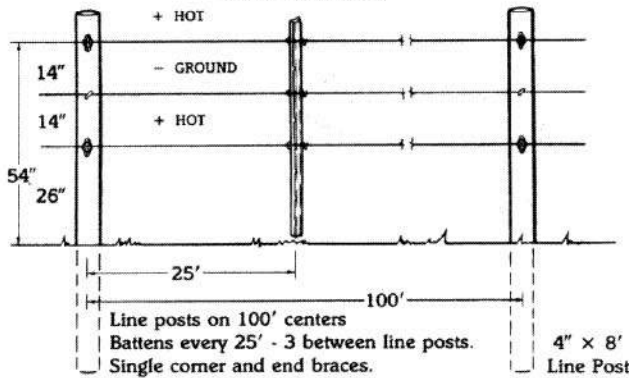
6 Wire Electrified



* Bottom wire electrified with Energy Limiter #2209.

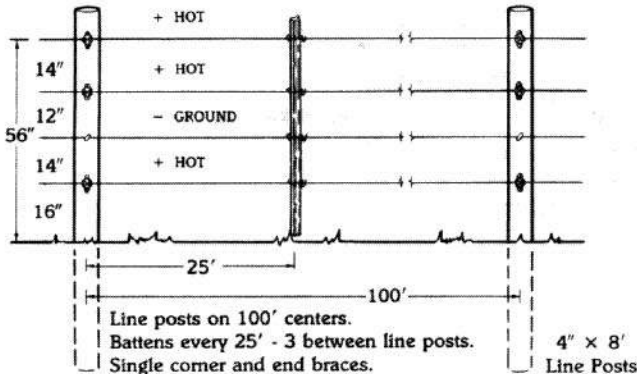
Adult Horse Fence

3 Wire Electrified



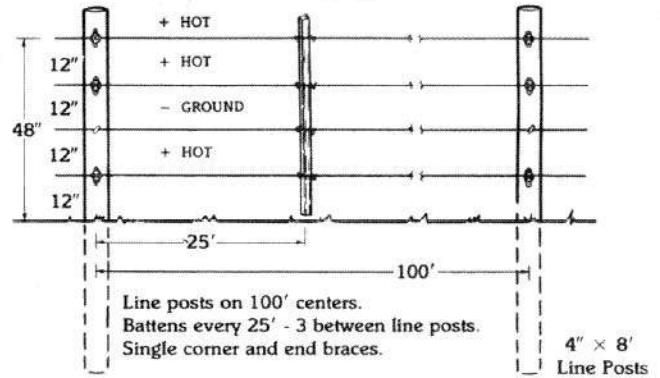
Horses with Foals

4 Wire Electrified



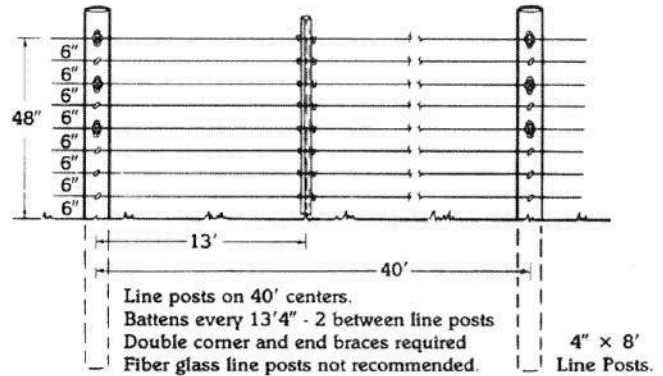
Beef and Dairy Cow Fence

4 Wire Electrified.



Horse and Cattle Fence

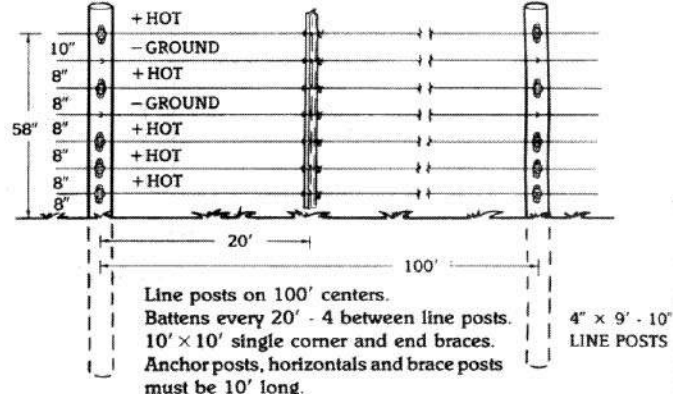
8 wire non-electrified/electrified.



Install three wires with insulators. Energizer may be desirable for periodic use in training. Electrify continuously when confining horses. See page 1, Fence Visibility.

Alpaca/Llama and Deer Control Fence

7 Wire Electrified**



Eight Wire Deer Control Fence

Follow the above design with these changes:
Place line posts 72" above the ground instead of 58". Add an 8th wire 12" above the top wire shown in drawing. 8th wire may be a physical barrier, neither hot nor ground.

*Limits current to bottom wire. Prevents shorted wire from draining current from upper wires. ** All wires may be electrified. See: SAFETY SWITCHES, page 6

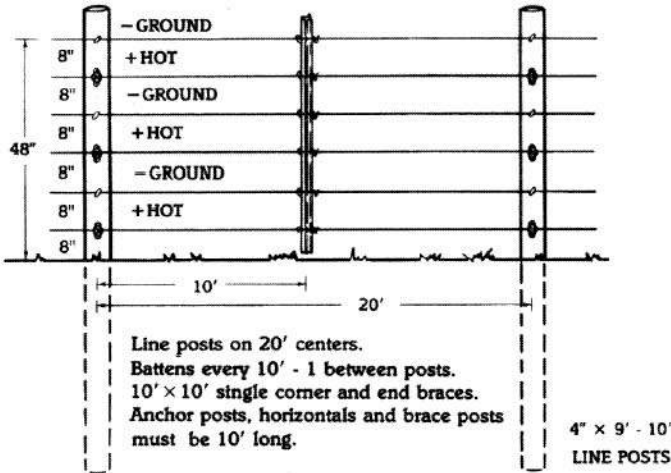
† See Page 1, Fence Visibility

FENCE DESIGNS[†]

Suggested Spacing and Post Lengths

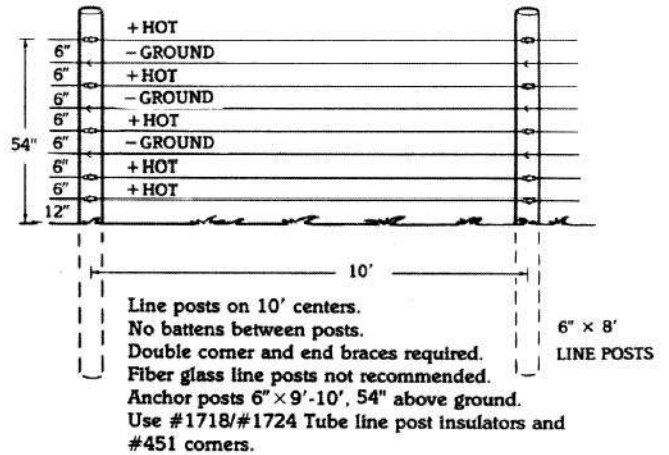
Feed Lot

6 Wire Electrified**



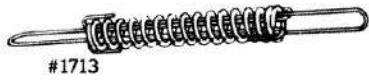
American Buffalo/Bison and Beefalo

8 Wire Electrified



FENCE MATERIALS

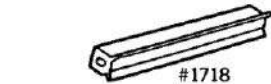
ARTICLE NUMBER	DESCRIPTION	PACKAGE QUANTITY	QUANTITY NEEDED	EST. COST
1713	TENSION MEASURING SPRING Hot Dip Zinc. Exceeds Class III.	20 / ctn.		
1703	WIRE STRAINER. Spring wire flapper. Hot dip zinc frame. All parts exceed class III.	20 / ctn.		
1701	STRAINER CRANK (Handle)	Ea.		
1718	4" TUBE INSULATOR FOR WOOD POSTS Without staple.	200 / bag		
1724	4" TUBE INSULATOR FOR WOOD POSTS With galvanized staple.	200 / box		
1710	PERMATEMP STAPLE INSULATOR FOR WOOD POSTS Staple included.	50 / bag		
SNUG-HTN	WOOD POST INSULATOR Complete with two galvanized ring shank nails	25 / bag		
2249	PINLOCK INSULATOR for wood posts. Complete with 2 galv. ring shank nails	25 / bag		
2550	T-POST PINLOCK INSULATOR For 1.25 & 1.33#/ft posts.	25 / bag		
1779	TUBULAR CORNER & END POST INSULATOR - 20 in. Longer lengths available on request.	10 / box		
1714	10" BRACE PIN	5 / bag		
1715	5" BRACE PIN	5 / bag		
2454	CHAIN GRAB PULLER Use to stretch and splice wire.	1 / ctn.		



#1713



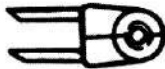
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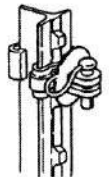
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#1724



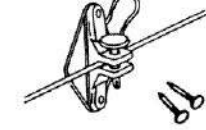
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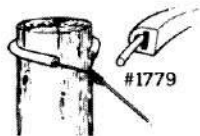
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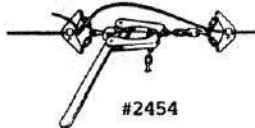
SNUG-HTN



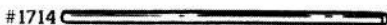
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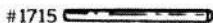
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#2454



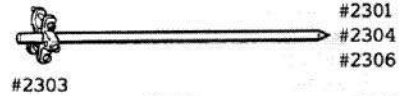
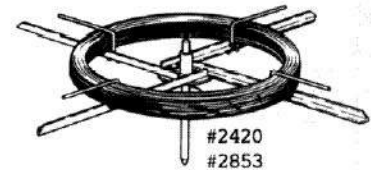
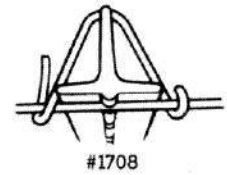
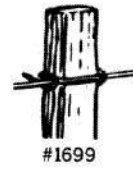
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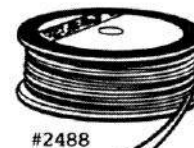
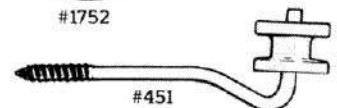
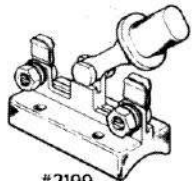
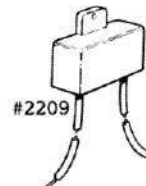
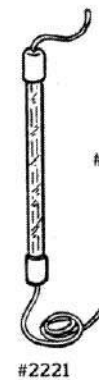
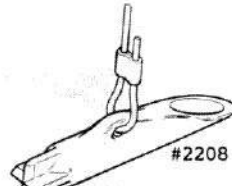
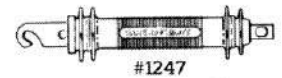
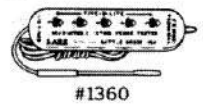
#1715

Fence Materials continued

ARTICLE NUMBER	DESCRIPTION	PACKAGE QUANTITY	QUANTITY NEEDED	EST. COST
1699	BATTEN & POST CLIP Fits all up to 2" x 2". Replaces #1696 & #1700.	100 / bag		
1708	CLIP FOR FIBERGLASS T-POSTS Fits 1 1/8" face size post.	100 / bag		
2577	SPINNING JENNY Pro Model. Adj. brake, welded rim & angle iron base.	Ea.		
2420	WIRE SPINNING JENNY/DEREELER With Brake. Knock down style.	1 ctn.		
2853	SPINNING JENNY FOR CANADIAN 4,000 ft. spools - (Davis & Tree Island) Adjustable brake.	Ea.		
2301	5/8" X 6' STEEL GROUND ROD Hot dipped zinc.	10 / bndl.		
2303	GROUND CLAMP Die cast, for 1/2" - 5/8" dia.	5 / ctn.		
2304	5/8" X 8' STEEL GROUND ROD Hot dipped zinc.	10 / bndl.		
2306	5/8" X 8' STEEL GROUND ROD With ground clamp.	10 / bndl.		
2457	5/8" X 8' COPPER CLAD GROUND ROD.	10 / bndl.		
1719	INSULATOR TUBING x 39 ft.	Ea.		
2453	INSULATOR TUBING x 50 ft.	Ea.		
1360	FIVE-O-LITE TESTER Individually carded.	Ea.		
2411	DIGITAL VOLT METER 0 to 9,999 volts.	1/ctn.		
1247	RUB'RGATE Electric Fence Gate Handle.	Ea.		
1614	WARNING SIGN Dual Purpose	10 / bag		
2208	DUCKBILL ANCHOR With cable.	Ea.		
2209	ENERGY LIMITER	Ea.		
2210	HIGH STRAIN DOUBLE U INSULATOR	10 / bag		
2211	CUT-OFF SWITCH Single Throw	Ea.		
2199	CUT-OFF SWITCH Double Throw	Ea.		
1752	HIGH STRAIN ROUND INSULATOR	10 / bag		
451	HIGH STRAIN INSULATOR ASSM	10 / box		
2488	16 GA. X 50' UNDERGROUND & HOOK-UP WIRE	1 / ctn.		
2212	16 GA. X 165' UNDERGROUND & HOOK-UP WIRE (AVAILABLE IN 250 & 500 FT.)	Ea.		
2277	12 1/2 GA. X 165' UNDERGROUND & HOOK-UP WIRE (AVAILABLE IN 250 & 500 FT.)	Ea.		
1692 (2") 2415 (1 1/4")	9 GA. CLASS III STAPLE - RT. HD. BARBED	50 / bag - or 10# box		
2221	FENCE LIGHT Attach permanently to fence. Highly visible.	1 / ctn		



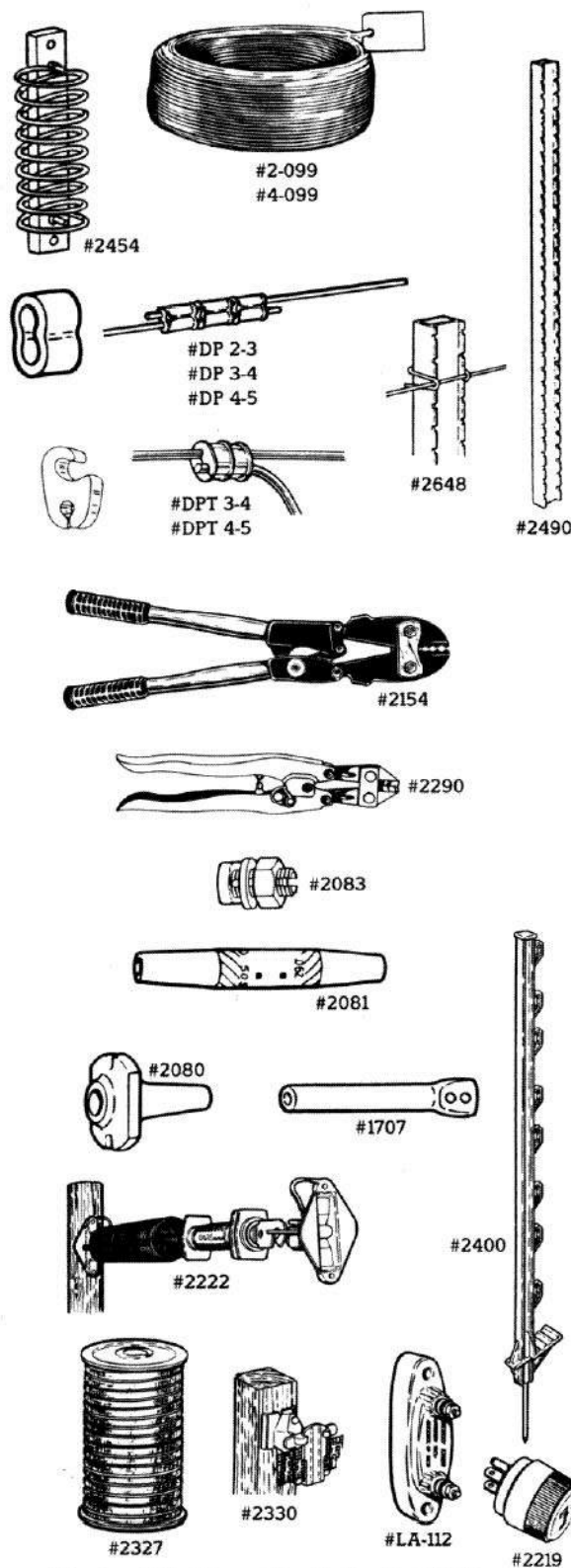
#2303



#2212
#2277



Fence Materials continued

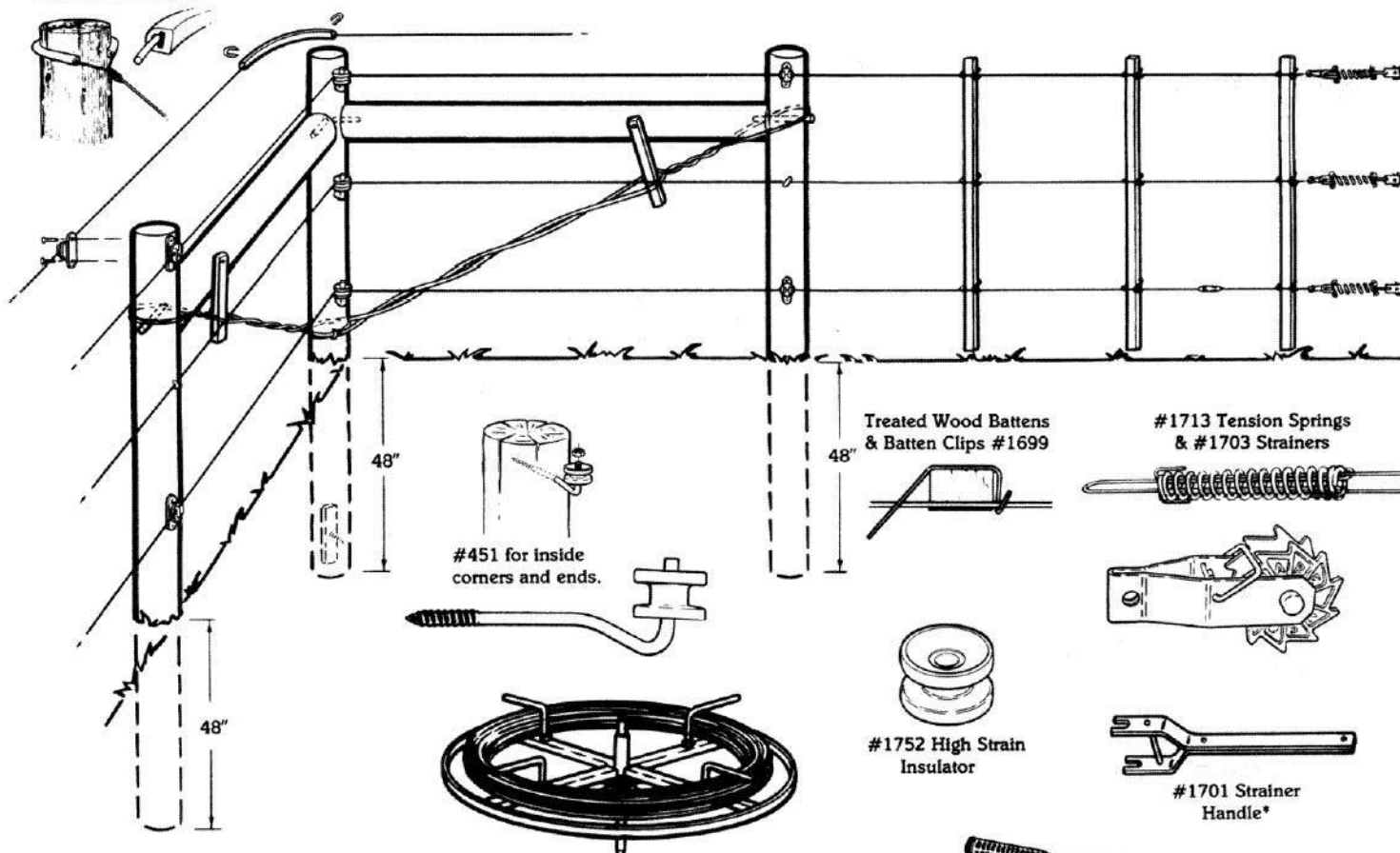


ARTICLE NUMBER	DESCRIPTION	PACKAGE QUANTITY	QUANTITY NEEDED	EST. COST
2454	LIGHTNING CHOKE Helps to divert damaging lightning.	1 / ctn		
2-099	HIGH TENSILE WIRE 12½ GA. x 2000 FT. Class III Zinc.	Ea.		
4-099	HIGH TENSILE WIRE 12½ GA x 4000 Ft. Class III Zinc	Ea.		
2490	POLY BATTEN. 1½" X 1⅞" X 49" Notched every inch. Black.	25 / bndl.		
2648	CLIP FOR DARE POLY BATTEN Type III galvanized wire.	100 / bag		
2561 (R-7)	FIBERGLASS BATTEN 5/8" x 48"	20 / bndl.		
2562 (R-9)	FIBERGLASS BATTEN 5/8" x 60"	20 / bndl.		
2761 (R-10)	FIBERGLASS BATTEN 5/8 X 72"	20 / bndl.		
1709	CLIP FOR FIBERGLASS BATTENS. Fits 5/8" face battens. R-7, 9 & 10. 13 ga. type III galv. wire.	100 / bag		
DP 2-3	SPLICING SLEEVES 12½ GA Smooth wire.	100 / box		
DP 3-4	SPLICING SLEEVES 10-11 GA Smooth & 14 GA & 15½ GA Barbed.	100 / box		
DP 4-5	SPLICING SLEEVES 9 GA Smooth & 12½ GA & 13½ GA Barbed.	100 / box		
DPT 3-4	FENCE TAPS 12½-14½ fence to 12-16 tap wire.	100 / box		
DPT 4-5	FENCE TAPS 12½-15½ fence to 8-12 tap wire.	100 / box		
2154 Imported 64-2345-US	CRIMPING TOOL Multigroove hand tool to press sleeves & taps above.	Ea.		
2290	WIRE CUTTER for High Tensile.	5 / ctn.		
2083	LINE CLAMP / TAP	10 / pkg		
2081 (5057-V)	WIRELINK† In-line Wire Splice for 12½ GA. Wire Size .062/100	Ea.		
2080 (5056-V)	WIREWISE† End post wire fastener. For 12½ GA. Wire Size .062/100	Ea.		
1707	WIRE TWISTING TOOL	Ea.		
2222	EXPANDO GATE. Stretches to fit 20 ft. opening. Complete assm.	Ea.		
2330-25	Tape Insulator for wood posts Complete with nails.	25/pkg		
2327	White polytape electric fence wire. ½" wide x 660' (200 meters)	Ea.		
2400	POLY POST PLASTIC FENCE POST. Use to divide pastures - perfect for controlled grazing. 48"	Ea.		
LA-112	LIGHTNING ARRESTOR. Protects controller from lightning on the fence line.	Ea.		
2219	110-V SURGE PROTECTOR. Protects controller from voltage spikes and surges.	Ea.		

†Wirewise and Wirelink are registered trademarks of Reliable Electric Co.

#1779 Wrap around insulator for ends and outside corners

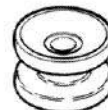
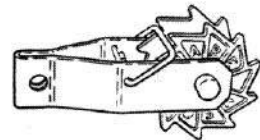
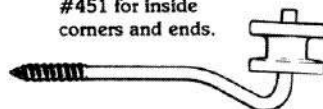
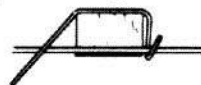
SINGLE CORNER BRACE ASSEMBLY



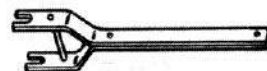
Treated Wood Battens & Batten Clips #1699

#1713 Tension Springs & #1703 Strainers

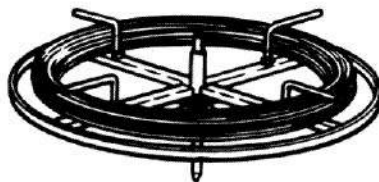
#451 for inside corners and ends.



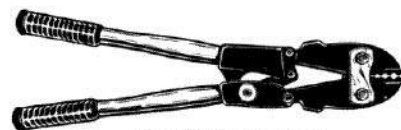
#1752 High Strain Insulator



#1701 Strainer Handle*



#2420 Spinning Jenny - K.D.
#2577 Spinning Jenny - Welded



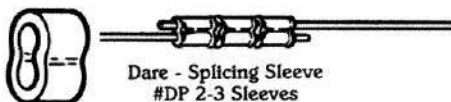
#2154 Crimping Tool



#2290 Wire Cutter, High Tensile



#1614 Warning Sign



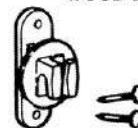
Dare - Splicing Sleeve
#DP 2-3 Sleeves

TOOLS

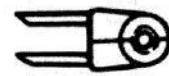
Plumb Bob
25' Steel Measuring Tape
Claw Hammer
Shovel
Post Hole Digger
Crimping Tool #64-2345
or #2154 - DARE*
Wire Cutting Pliers
Tamping Bar (Shale Bar)
Hand Drill or Brace
Drill Bits - 3/8" x 8" and 5/16" x 5"

Fibreglass Post Driver (if FG posts are used)
Wire Bending Tool #1707 - DARE*
Marking Crayon - Yellow
Spinning Jenny #1717 - DARE*
Strainer Handle #1701 - DARE*
Hand or Chain saw
Leather Gloves
Safety Glasses
Duckbill driving bar #2217 - DARE*
*See: FENCE MATERIALS

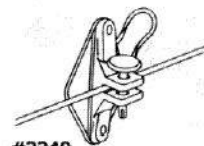
WOOD POST INSULATORS



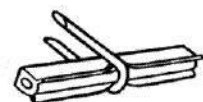
SNUG-HTN



#1710

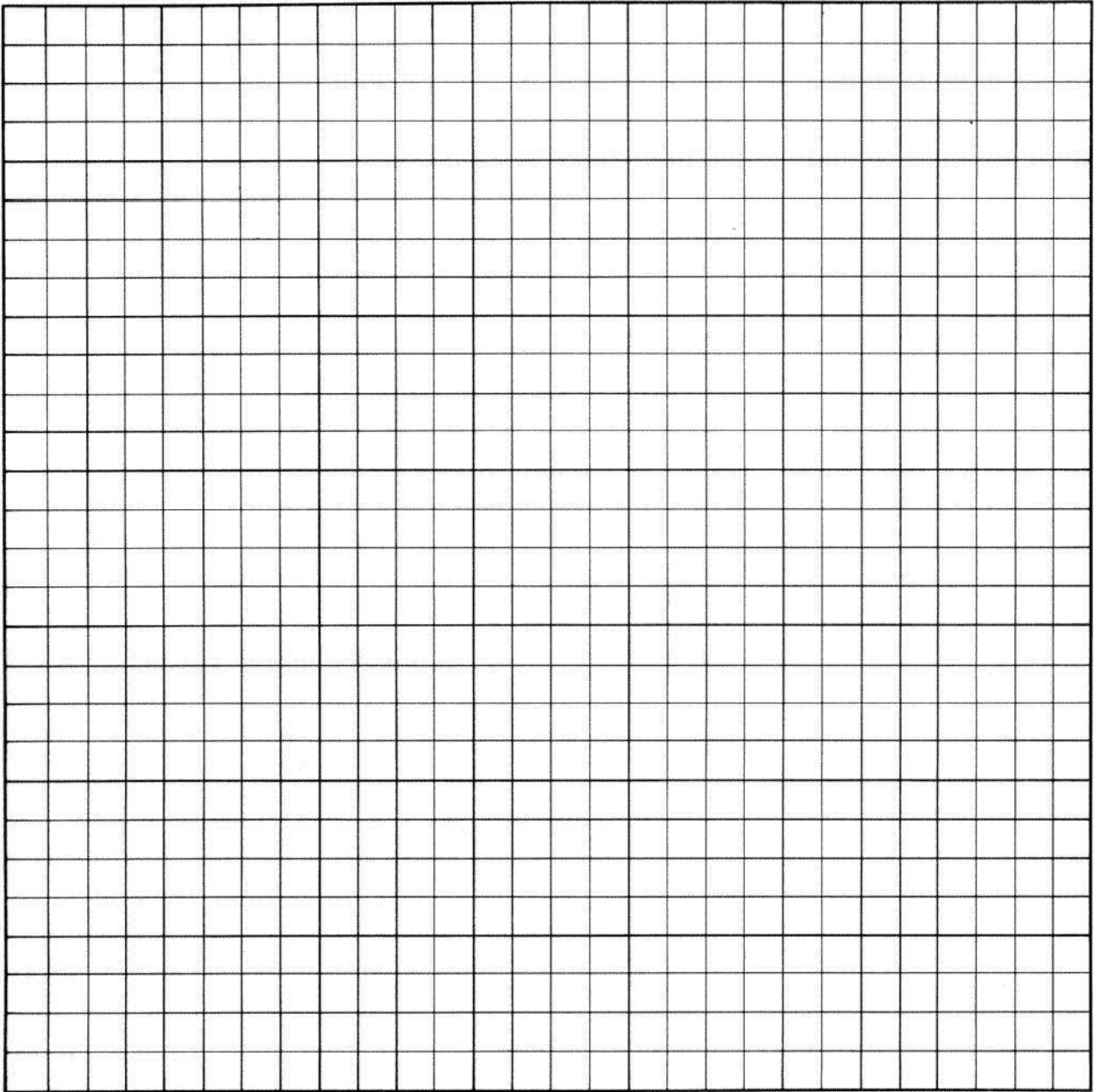
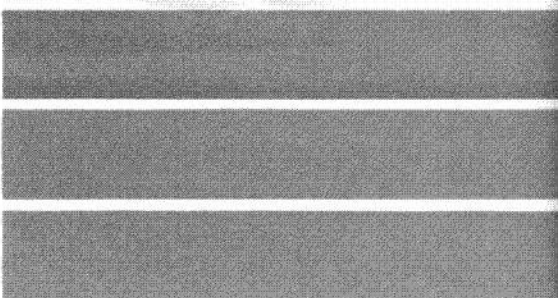


#2249 Pinlock Insulator



#1718 & #1724

* Use handle to measure tension spring. End of handle to second rivet equals 200/250 lbs.



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