



ZIPLINE GEAR



INSTALLATION & SAFETY

HANDBOOK

DISCLAIMERS

ACTIVITIES INVOLVING THE INSTALLATION AND USE OF ZIP LINES, TROLLEYS, HARNESSSES, BRAKING SYSTEMS AND OTHER RELATED GEAR ARE POTENTIALLY HAZARDOUS BY THEIR VERY NATURE.

ALL INSTRUCTIONS IN THIS MATERIAL ARE EXTREMELY IMPORTANT. OVERLOOKING OR IGNORING ANY OF THE FOLLOWING INSTRUCTIONS COULD RESULT IN RIDER INJURY OR DEATH. PLEASE TAKE ALL THESE INSTRUCTIONS SERIOUSLY.

ANYONE PURCHASING, INSTALLING OR USING EQUIPMENT FROM ZIPLINEGEAR MUST:
READ ALL INSTRUCTIONS REGARDING ITS CORRECT INSTALLATION AND SAFE USE;
ENSURE PROPER OVERSIGHT, SUPERVISION AND INSTRUCTION (INCLUDING THE USE OF APPROPRIATE SAFETY EQUIPMENT) FOR THEMSELVES AND OTHERS USING THE EQUIPMENT;
ENSURE ALL EQUIPMENT IS PROPERLY MAINTAINED AND INSPECTED FOR DAMAGE OR WEAR PRIOR TO EACH USE;
ASSUME ALL RISKS AND ACCEPT FULL RESPONSIBILITY FOR ANY DAMAGE OR INJURY, INCLUDING DEATH, THAT MAY ARISE FROM ITS USE.

***!! WARNING !!
DO NOT ATTEMPT TO RIDE YOUR ZIP LINE WITHOUT FIRST TESTING.***

***!! WARNING !!
DO NOT ATTEMPT INSTALLATION OR USE OF ZIP LINE EQUIPMENT WHILE UNDER THE INFLUENCE OF INTOXICANTS OR WHILE DRINKING ALCOHOL, SINCE THESE IMPAIR JUDGMENT AND REASONING, THEREBY MAKING INSTALLATION MISTAKES MORE LIKELY.***

CONTACT

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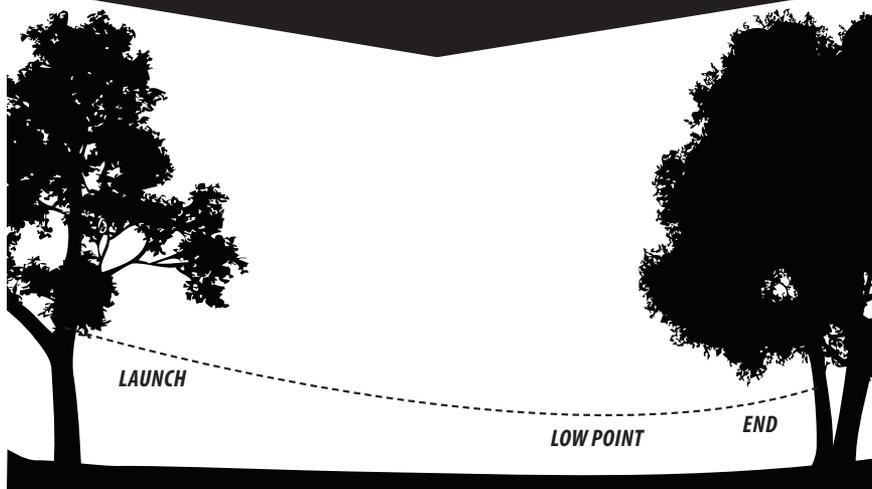
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ZIPLINE GEAR

CONCEPTS



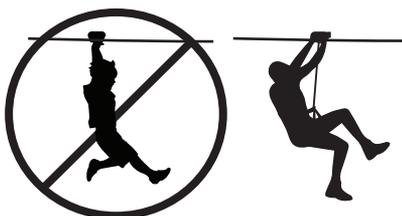
SITE SELECTION

THE SITE SELECTION PROCESS MUST BE PERFORMED BY A COMPETENT ADULT AFTER ALL INSTRUCTIONAL MATERIAL HAS BEEN COMPLETELY REVIEWED AND UNDERSTOOD.

DETERMINE THE MOST ACCESSIBLE LOCATIONS FOR YOUR RIDER TO **LAUNCH** AND **DISMOUNT**. THIS WILL DICTATE THE INSTALLATION OF YOUR ZIP LINE. DEPENDING ON THE TERRAIN, THE DISMOUNT LOCATION MAY BE AT THE END OF THE ZIP LINE RATHER THAN THE LOW POINT OF THE CABLE. A PLATFORM MAY BE REQUIRED FOR ACCESS.



CLEAR THE ZIP LINE AVENUE OF OBSTRUCTIONS AT LEAST 7 FT. BELOW AND 5 FT. ON BOTH SIDES OF THE ZIP LINE. REMOVE LARGE ROCKS, LOGS, BRANCHES, SHARP OBJECTS, AND OTHER POTENTIAL HAZARDS.



SAFETY RIDING GEAR IS REQUIRED FOR ANY HEIGHT AND TERRAIN WHERE A FALL COULD RESULT IN INJURY.

ANCHORS

DID YOU KNOW?

A TYPICAL ZIP LINE CABLE CAN APPLY 800 TO 3,000 POUNDS OF HORIZONTAL FORCE TO AN ANCHOR WHEN LOADED.



DO NOT USE

BUILDINGS OR PLAYGROUND STRUCTURES (UNLESS SPECIFICALLY BUILT FOR ZIP LINES), LIVE POWER/ TELEPHONE POLES, DEAD TREES OR STUMPS, TREES WITH ROT, DISEASE, STRUCTURAL CRACKS, EXCESSIVE LEAN, EXPOSED ROOTS, OR TREES IN BOGGY, WET, SANDY, LOOSE SOIL. THIS IS ONLY A PARTIAL LIST. YOU MUST USE YOUR GOOD JUDGMENT IN DETERMINING WHAT IS NOT AN APPROPRIATE ANCHOR POINT. IF IN DOUBT, CALL US TO DISCUSS.

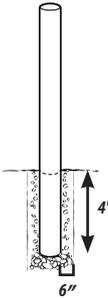


TREES

TREE TRUNKS MUST HAVE A **12-INCH DIAMETER**, MINIMUM, AT THE ATTACHMENT POINT. DO NOT ATTACH TO ANY LIMBS/BRANCHES OTHER THAN A CENTRAL TRUNK.

POSTS

WOOD POSTS MUST BE **12" DIAMETER**, MINIMUM.

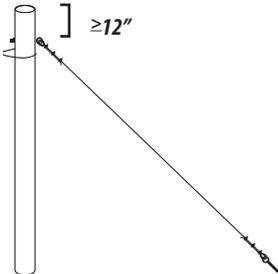


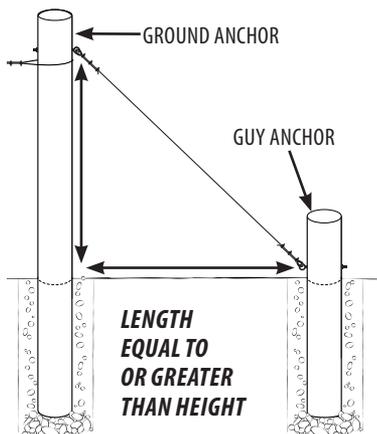
POSTS MUST BE SUNK **4 FT. IN GROUND, OR 10% OF POST LENGTH PLUS 2 FT.** (WHICHEVER IS GREATER). SECURE WITH CONCRETE **6 INCHES** THICK AROUND POST. SOIL MEDIA SUCH AS SAND, ROCK OR HIGH GROUND WATER ENVIRONMENTS MAY REQUIRE ALTERNATIVE INSTALLATION TECHNIQUES AND CONSULTATION WITH AN ENGINEER.

GUY CABLES AND GROUND ANCHORS

POSTS WITH GUY CABLES AND GROUND ANCHOR POSTS MUST BE **8 INCHES DIAMETER, MINIMUM.**

CABLE ATTACHMENT MUST BE **12 INCHES** FROM TOP OF POLE, MINIMUM, AND AS CLOSE AS POSSIBLE TO ZIP LINE ATTACHMENT POINT.





INSTALL GUY ANCHOR POST AT A DISTANCE EQUAL TO OR GREATER THAN ATTACHMENT HEIGHT.

GROUND ANCHOR POSTS MUST BE SUNK **4 FT. IN GROUND, OR 10% OF POST LENGTH PLUS 2 FT.** (WHICHEVER IS GREATER). SECURE WITH CONCRETE **6 INCHES** THICK AROUND POST. SOIL MEDIA SUCH AS SAND, ROCK OR HIGH GROUND WATER ENVIRONMENTS MAY REQUIRE ALTERNATIVE INSTALLATION TECHNIQUES AND CONSULTATION WITH AN ENGINEER.

CLEARANCE

IT IS RECOMMENDED THAT THE ZIP LINE MAINTAIN AT LEAST A **7 FT. CLEARANCE** OVER THE ENTIRETY OF THE ZIP LINE AVENUE WHILE SUPPORTING THE HEAVIEST RIDERS.

THE FOLLOWING TOOLS ARE RECOMMENDED FOR MEASURING **ELEVATION CHANGE** OF YOUR ZIP LINE SITE.



MEASURING TAPE



LASER OR SIGHT LEVEL



LADDER

HELPFUL HINT: WE RECOMMEND FINDING A LANDSCAPE WITH A NATURAL SLOPE OF 3% TO 6%, (A 3 FT. TO 6 FT. OF DROP PER 100 FT.).

CABLE SLOPE & SAG

CABLE SLOPE

THE MAXIMUM ALLOWABLE SLOPE IS 3% (3 FT. DROP PER 100 FT. OF DISTANCE) FOR ZIP LINES THAT WILL NOT UTILIZE A BUNGEE BRAKE (A STOP BLOCK IS NOT A BRAKING SYSTEM). THE MAXIMUM ALLOWABLE SLOPE IS 6% (6 FT. DROP PER 100 FT. OF DISTANCE) FOR ZIPLINES THAT UTILIZE A BUNGEE BRAKE.

!! WARNING !!

ZIP LINE MUST NEVER EXCEED 6% (6 FT. DROP PER 100 FT. OF DISTANCE) RIDING SLOPE. HIGH SPEED COLLISION WITH END POINT MAY CAUSE INJURY OR DEATH.

CABLE SAG

CABLE TENSION IS MEASURED BY CABLE SAG:

- THE CABLE, **WHEN BEARING A TEST WEIGHT**, SHOULD SAG BELOW THE END WHERE CABLE IS ATTACHED.
- THE SAG NEEDS TO BE APPROXIMATELY 2% OF ZIP LINE'S TOTAL LENGTH. **(2 FT. PER 100 FT. OF CABLE)**
- THE SAG IS MEASURED AT THE CABLE'S **LOWEST POINT**.

!! WARNING !!

DO NOT ATTEMPT TO RIDE YOUR ZIP LINE WITHOUT FIRST TESTING.

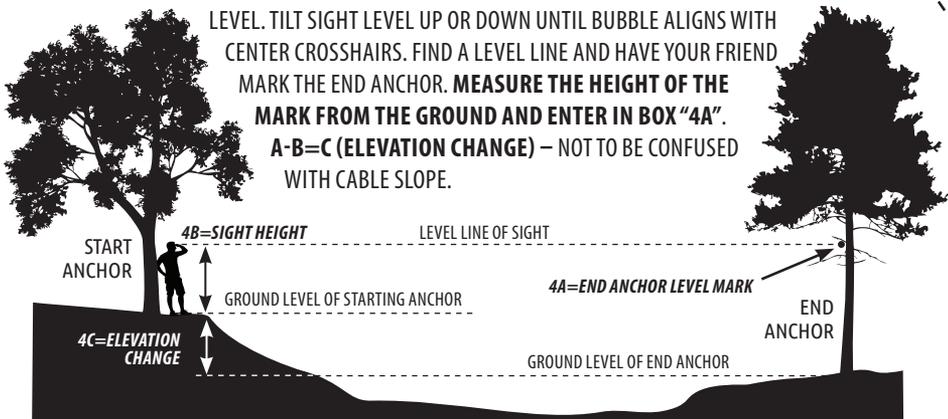
CABLE SLOPE & SAG WORKSHEET

USE THIS WORKSHEET TO HELP SET UP YOUR ZIPLINE. BY USING THESE STEPS YOU WILL BE ABLE TO DETERMINE THE LENGTH, SLOPE, SAG, ELEVATION CHANGE (IF ANY) IN YOUR LANDSCAPE AND YOUR STARTING AND ENDING ANCHOR.

1. MEASURE THE DISTANCE BETWEEN START AND END ANCHORS. USING “FEET” ENTER YOUR MEASUREMENT IN **BOX 1**. THIS WILL BE YOUR **LENGTH**. (ROUND UP TO NEAREST FT.)
2. CALCULATE THE SLOPE OF THE ZIP LINE AND ENTER IN **BOX 2**.
 - a. MULTIPLY **BOX 1** BY **.03** IF YOU ONLY HAVE A **STOP BLOCK**
 - b. MULTIPLY **BOX 1** BY **.06** IF YOU HAVE A **BUNGEE BRAKE**
3. CALCULATE THE SAG.
 - a. MULTIPLY **BOX 1** BY **.02** AND ENTER THE ANSWER IN **BOX 3**.
4. MEASURE AND CALCULATE ELEVATION CHANGE. **IF GROUND IS LEVEL, ENTER “0” IN BOX 4C.** IF NOT, USE A SIGHT LEVEL AND HAVE A FRIEND ASSIST IN MEASURING.

DETERMINE YOUR SIGHTING HEIGHT AND ENTER IT IN BOX “4B”.

SIGHT A LEVEL LINE TO YOUR END ANCHOR THROUGH YOUR SIGHT LEVEL. TILT SIGHT LEVEL UP OR DOWN UNTIL BUBBLE ALIGNS WITH CENTER CROSSHAIRS. FIND A LEVEL LINE AND HAVE YOUR FRIEND MARK THE END ANCHOR. **MEASURE THE HEIGHT OF THE MARK FROM THE GROUND AND ENTER IN BOX “4A”.**
A-B=C (ELEVATION CHANGE) – NOT TO BE CONFUSED WITH CABLE SLOPE.



HELPFUL HINT: AS AN ALTERNATIVE TO A SIGHT LEVEL YOU CAN USE AN ALTIMETER APP.

5. DETERMINE YOUR **ENDING ANCHOR POINT HEIGHT** BY ADDING **BOX 3** PLUS **7 FT.** AND ENTER THE ANSWER IN **BOX 5**. THIS IS THE HEIGHT OF YOUR ENDING ANCHOR POINT.
6. TO DETERMINE THE **HEIGHT OF YOUR STARTING ANCHOR POINT**, ADD **BOX 2** AND **BOX 5** TOGETHER THEN **SUBTRACT BOX 4C**. ENTER THE ANSWER IN **BOX 6**. THIS IS THE HEIGHT OF YOUR STARTING ANCHOR POINT.

BOX 1

LENGTH =

BOX 1

DISTANCE BETWEEN ANCHORS IN FEET

THE DISTANCE FROM START TO END ANCHORS = LENGTH

BOX 2

ZIP LINE SLOPE =

BOX 1 X .03 OR .06

THE AMOUNT OF DROP FROM YOUR START ANCHOR TO YOUR END ANCHOR = SLOPE

BOX 3

ZIP LINE SAG =

BOX 1 X .02

THE AMOUNT THE ZIPLINE DROPS WHEN A RIDER'S WEIGHT IS ADDED = SAG

SAG

BOX 4

ELEVATION CHANGE =

A

END LEVEL MARK

- B

START SIGHT HEIGHT

= C

A-B= CHANGE

BOX 4C

ENDING ANCHOR HEIGHT

BOX 5

BOX 3

+ 7 FEET =

END ANCHOR HEIGHT

BOX 5

STARTING ANCHOR HEIGHT

BOX 6

BOX 2

+

BOX 5

-

BOX 4C

=

START ANCHOR HEIGHT

BOX 6

INSTALLATION EXAMPLE

BROCK'S BACKYARD IS PERFECT FOR A ZIP LINE. HE ORDERED A **200-FT LINE** AND IN ORDER TO INSTALL IT, HE NEEDS TO FIGURE OUT WHERE TO ANCHOR THE CABLE ON EACH OF HIS TWO TREES. SO HERE'S WHAT HE DID. FIRST, BROCK **READ THROUGH THE ENTIRE MANUAL** THE EVENING BEFORE HE PLANNED ON SETTING UP HIS ZIP LINE.

BOX 1 THE NEXT DAY HE PACED OFF THE DISTANCE TO MAKE SURE HE KNOWS THE EXACT DISTANCE. THE DISTANCE IS **180-FT**. HE FILLS IN **BOX 1 = 180**.

BOX 2 NEXT, HE FIGURED OUT THE AMOUNT OF SLOPE HE WILL NEED. SINCE HE PURCHASED A ZIP LINE THAT ONLY INCLUDED A **STOP BLOCK**, HIS CALCULATIONS WILL BE FOR A **3% SLOPE**. WHIPPING OUT HIS SMART PHONE HE MULTIPLIES **180 X 0.03** AND GETS **5.4**, WHICH HE ROUNDS TO THE NEAREST WHOLE NUMBER AND ENTERS **5** IN **BOX 2**.

BOX 3 USING HIS **LENGTH OF 180 FROM BOX 1 HE MULTIPLIES IT BY 0.02**. HIS ANSWER WAS **3.6** WHICH HE ROUNDS TO THE NEAREST WHOLE NUMBER **4** AND ENTERS IT INTO **BOX 3**.

BOX 4 TO FIGURE OUT HOW MUCH HIS YARD ELEVATION CHANGE IS BETWEEN THE TWO ANCHOR POINTS HE ORDERED A SIGHT LEVEL. HE IS **SIX FEET TALL**, SO HE PENCILS **6** IN **BOX 4B**, NEXT HE LOOKS THROUGH THE SITE LEVEL UNTIL THE BUBBLE LINES UP WITH THE CENTER CROSSHAIRS ON THE END ANCHOR TREE. THERE HAPPENS TO BE A NICE BRANCH THAT HE CAN IDENTIFY EASILY WHICH WILL BE WHAT HE WILL USE FOR A MARK. HE HIKES TO THE END ANCHOR TREE, SETS A LADDER AGAINST THE TREE AND CLIMBS UP THE LADDER WITH A TAPE MEASURE. HE MEASURES FROM THE GROUND TO HIS MARK, WHICH WAS A NICE BRANCH. **THE TAPE MEASURES 14-FT**. HE PENCILS IN **14** IN **BOX 4A** AND THEN CALCULATES WHAT BOX 4C IS. [**14 - 6 = 8**] AND HE PENCILS **8** IN **BOX 4C**.

JUST FOR THE FUN OF DOUBLE CHECKING HIS FIGURES, HE DOWNLOADS AN **ALTIMETER APP** ON HIS SMART PHONE. STANDING AT THE BASE OF THE **START ANCHOR TREE** HE TAKES THE FIRST MEASUREMENT WHICH IS **1743 FT. FROM SEA LEVEL**. HE JOTS DOWN THAT NUMBER WHILE STRIDING OVER TO THE END ANCHOR TREE. TAKING ANOTHER MEASUREMENT ON HIS APP AT THE BASE OF THE **END ANCHOR TREE**, THE READING SHOWS **1735 FT. FROM SEA LEVEL** WHICH HE PENCILS BELOW THE FIRST FIGURE. CALCULATING **THE DIFFERENCE BETWEEN THESE TWO MEASUREMENTS WILL BE THE ELEVATION CHANGE** BETWEEN HIS TWO ANCHOR POINTS AND THIS CAN BE ENTERED INTO **BOX 4C**.

$$1743 \text{ ft.} - 1735 \text{ ft.} = 8 \text{ ft.}$$

WITH ALL OF HIS PHYSICAL MEASUREMENTS COMPLETED, HE SITS DOWN ON HIS BACKYARD DECK AND FILLS OUT THE REST OF HIS WORKSHEET.

BOX 5 TO CALCULATE HIS ENDING ANCHOR HEIGHT [**BOX 3 + 7 FEET = BOX 5**]
4 + 7 FEET = 11 FOR THE END ANCHOR HEIGHT.

BOX 6 TO CALCULATE HIS STARTING ANCHOR HEIGHT [**BOX 2 + BOX 5**] - [**BOX 4C**] = [**BOX 6**]
[5 + 11 = 16] - [8] = 8 FOR THE START ANCHOR HEIGHT.

NOW BROCK IS READY TO MOVE ON TO HIS NEXT STEP.

2 GO TO NEXT STEPS
**CABLE
INSTALLATION**

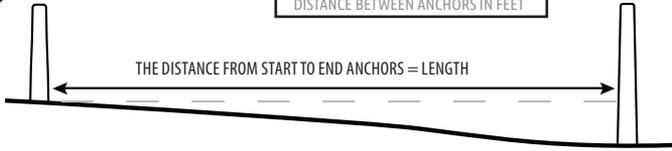
SAMPLE WORKSHEET

BOX 1

LENGTH =

180

DISTANCE BETWEEN ANCHORS IN FEET

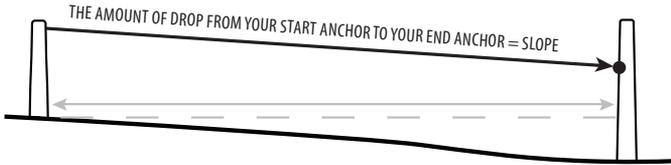


BOX 2

ZIP LINE SLOPE =

5

BOX 1 X .03 OR .06

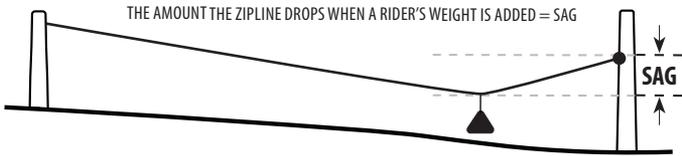


BOX 3

ZIP LINE SAG =

4

BOX 1 X .02



BOX 4

ELEVATION CHANGE =

A 14

END LEVEL MARK

- B 6

START SIGHT HEIGHT

= C 8

A-B= CHANGE

BOX 4C

ENDING ANCHOR HEIGHT

BOX 5

4

BOX 3

+ 7 FEET =

11

ENDING ANCHOR HEIGHT

BOX 5

STARTING ANCHOR HEIGHT

BOX 6

5

BOX 2

+

11

BOX 5

-

8

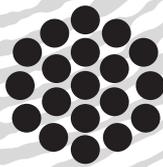
BOX 4C

=

8

START ANCHOR HEIGHT

BOX 6



ZIPLINEGEAR

CABLE INSTALLATION

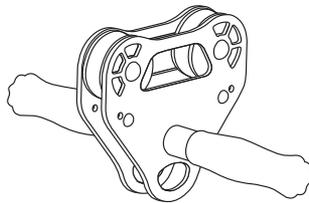
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!! WARNING !!

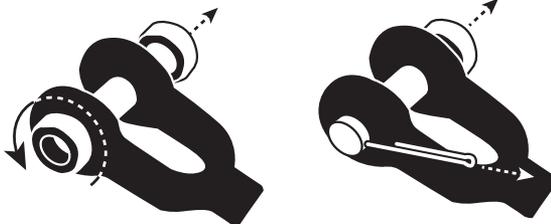
ZIP LINE MUST NEVER EXCEED 6% RIDING SLOPE. HIGH SPEED COLLISION WITH END POINT MAY CAUSE INJURY OR DEATH.

2-CABLE INSTALLATION

CHETCO & 1/4" CABLE KITS



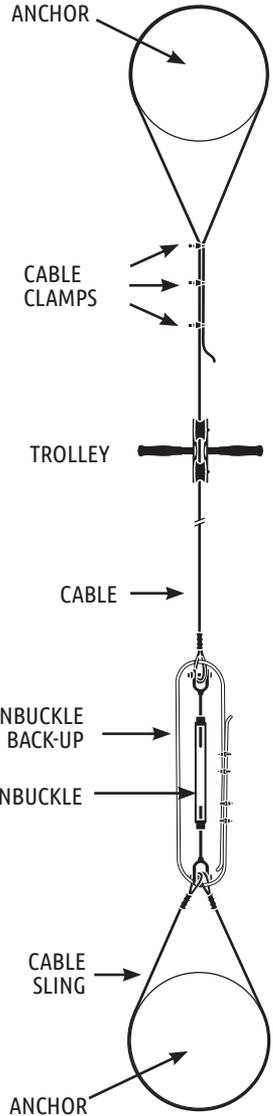
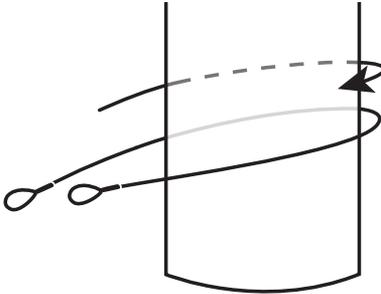
1 UNSCREW NUTS OR PULL COTTER PINS FROM BOLTS. DRAW BOLTS FROM TURNBUCKLE JAWS.



2 ASSEMBLE TURNBUCKLE BY SCREWING SHAFTS UNTIL EXTENDED AS SHOWN. R WITH R, L WITH L (REVERSE THREADS).

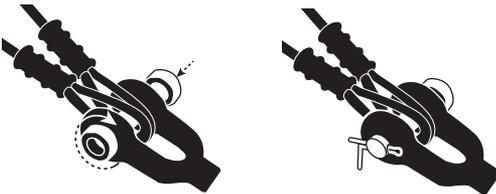


3 WRAP CABLE SLING AROUND ANCHOR (FOR TREE SAVERS SEE SECTION 3).



2-CABLE INSTALLATION

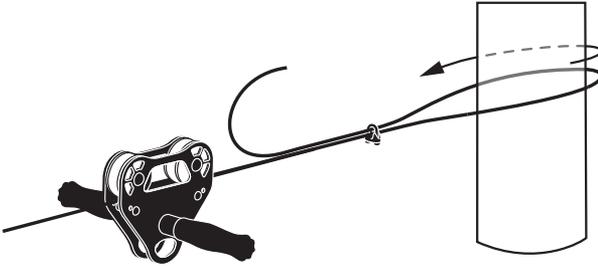
4 PLACE LOOP ENDS OF SLING INTO TURNBUCKLE JAW. SECURE BOLT WITH NUT OR COTTER PIN. USE A WRENCH TO TIGHTEN NUT. USE PLIERS TO BEND COTTER PIN.



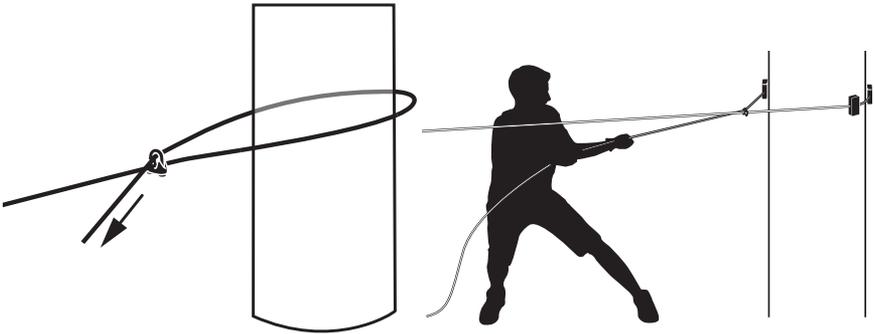
5 PLACE THIMBLE END OF MAIN CABLE INTO OTHER TURNBUCKLE JAW. SECURE BOLT WITH NUT OR COTTER PIN. USE A WRENCH TO TIGHTEN NUT. USE PLIERS TO BEND COTTER PIN.



6 THREAD CABLE THROUGH CHETCO TROLLEY AND A CABLE CLAMP. WRAP CABLE AROUND ANCHOR AND THREAD BACK THROUGH CLAMP.

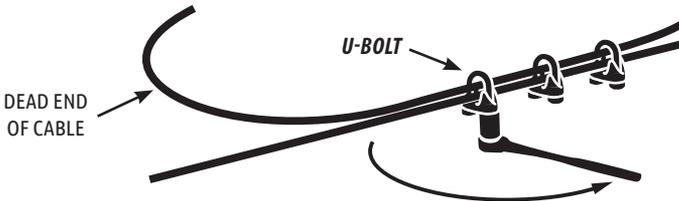


7 TENSION ZIP LINE CABLE BY PULLING ON DEAD END OF CABLE OR BY USING TENSIONER KIT (ADD-ON ITEM).



2-CABLE INSTALLATION

8 PULL CABLE TAUT. U-BOLT PORTION OF CLAMPS MUST PRESS AGAINST DEAD END OF CABLE. TIGHTEN CABLE CLAMPS MODERATELY PAST SNUG (\approx 15 FT. LBS) 1-2 INCHES APART.

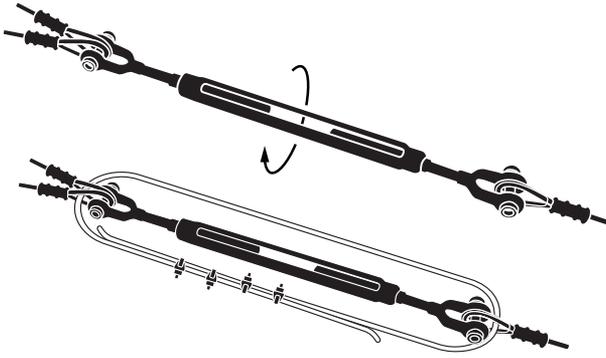


!! WARNING !!

NEVER ATTEMPT TO RIDE OR APPLY WEIGHT TO ZIP LINE BEFORE WEIGHT TEST OR WHILE TENSION REMAINS ON TENSIONING WINCH.

9 CRANK TURNBUCKLE IF CABLE NEEDS MORE TENSION.

10 INSTALL TURNBUCKLE BACK-UP CABLES. THREAD BOTH ENDS OF CABLE SECTION THROUGH CABLE EYES AND SECURE WITH CABLE CLAMPS.



2-CABLE INSTALLATION

HELPFUL HINT: IN CHETCO KIT, THE TURNBUCKLE BACK-UP CABLES ARE 5/16", TORQUE THE CABLE CLAMPS ON THE BACK-UP CABLES TO 30 FT.LBS.

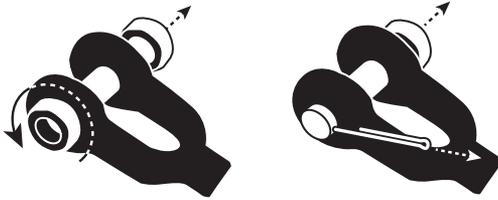
<i>ZIP LINE LENGTH</i>	<i>RECCOMENDED CABLE SIZE</i>	<i>CLAMP TORQUE</i>
<i>UP TO 200'</i>	<i>1/4 "</i>	<i>15 LBS.</i>
<i>UP TO 500'</i>	<i>5/16 "</i>	<i>30 LBS.</i>
<i>UP TO 1000'</i>	<i>3/8 "</i>	<i>45 LBS.</i>

3 GO TO NEXT STEPS
COMPONENT ASSEMBLY

ROGUE SERIES OR – 5/16" & 3/8" CABLE KITS



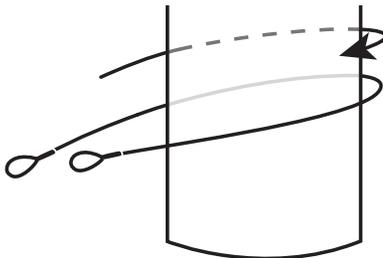
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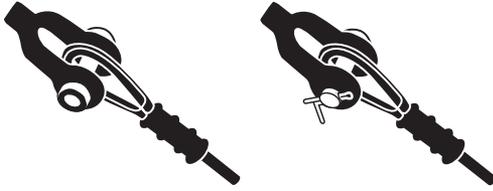
3 WRAP CABLE SLING AROUND ANCHOR (FOR TREE SAVERS SEE SECTION 3).



4 PLACE LOOP ENDS OF SLING INTO TURNBUCKLE JAW. SECURE BOLT WITH NUT OR COTTER PIN. USE A WRENCH TO TIGHTEN NUT. USE PLIERS TO BEND COTTER PIN.

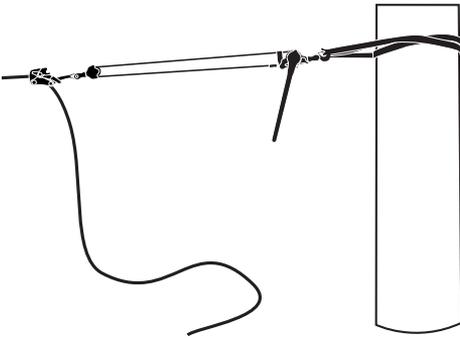


5 PLACE THIMBLE-END OF MAIN CABLE INTO OTHER TURNBUCKLE JAW. SECURE BOLT WITH NUT OR COTTER PIN. USE A WRENCH TO TIGHTEN NUT. USE PLIERS TO BEND COTTER PIN.

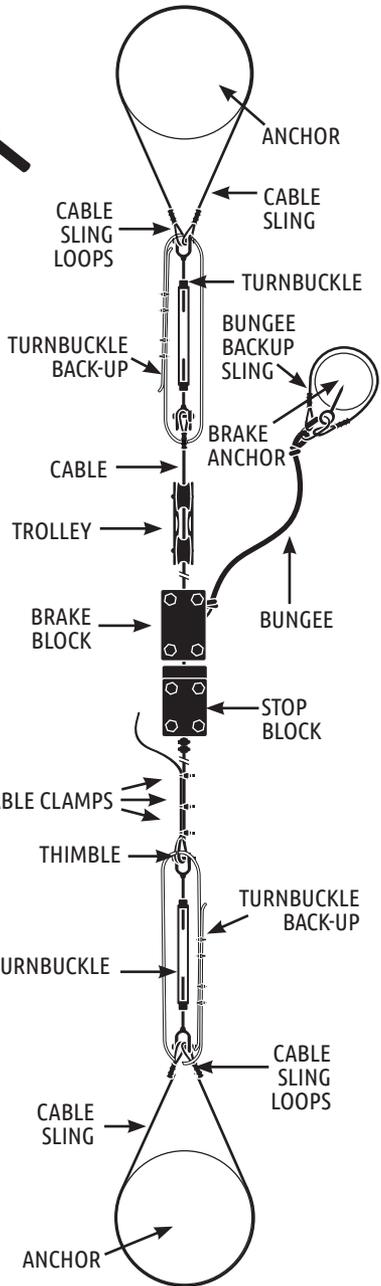
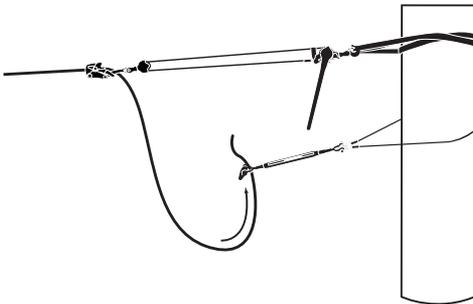


2-CABLE INSTALLATION

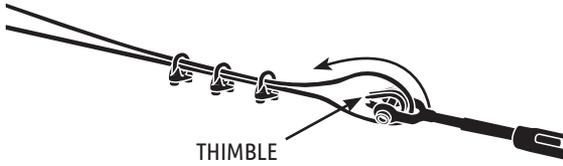
6 ATTACH WINCH TO SECOND ANCHOR WITH LANYARD AND CABLE GRAB TO CABLE. TENSION ZIP LINE. (FOR TENSIONING KIT FLIP TO ROGUE-PRO INSTRUCTIONS)



7 WRAP CABLE SLING AROUND ANCHOR AT CALCULATED HEIGHT, CONNECT TURNBUCKLE TO CABLE SLING LOOPS AND SECURE WITH NUT OR COTTER PIN. USE A WRENCH TO TIGHTEN NUT. USE PLIERS TO BEND COTTER PIN.

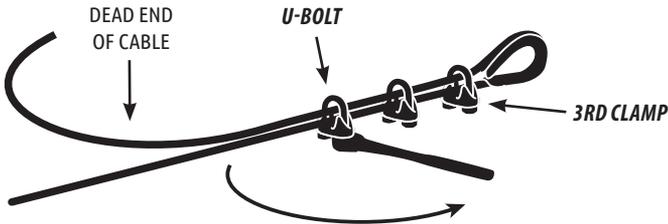


8 AFTER BOLTING THIMBLE INTO TURNBUCKLE, SECURE BOLT WITH NUT OR COTTER PIN. USE A WRENCH TO TIGHTEN NUT. USE PLIERS TO BEND COTTER PIN. THREAD MAIN CABLE FIRST THROUGH THREE CABLE CLAMPS, AROUND THIMBLE AND BACK THROUGH CABLE CLAMPS.

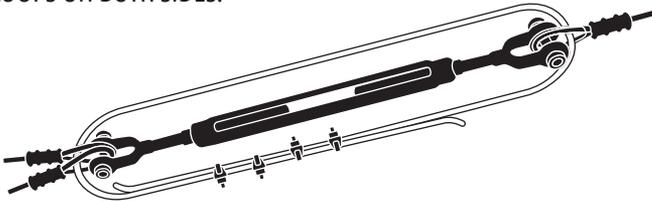


!! WARNING !!
NEVER ATTEMPT TO RIDE OR APPLY WEIGHT TO ZIP LINE WHILE TENSION REMAINS ON WINCH.

9 PULL CABLE TAUT. U-BOLT PORTION OF CLAMPS MUST PRESS AGAINST DEAD END OF CABLE. TIGHTEN CABLE CLAMPS MODERATELY PAST SNUG, FOR ROGUE SERIES OR 5/16" CABLE (\approx 30 FT. LBS), FOR 3/8" CABLE (\approx 45 FT. LBS) AT 1-2 INCHES APART.



10 INSTALL TURNBUCKLE BACK-UP CABLES. BACK-UP CABLE MUST THREAD THROUGH CABLE LOOPS ON BOTH SIDES.



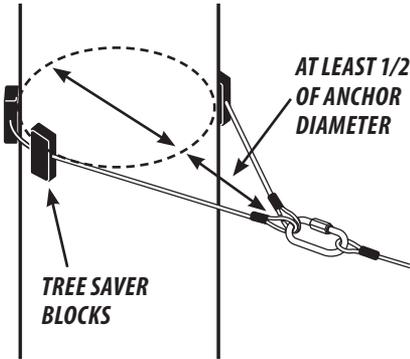
11 IF USING A TENSIONING KIT, RELEASE TENSION AND TRANSFER LOAD TO MAIN ZIP LINE.

3 GO TO NEXT STEPS
**COMPONENT
ASSEMBLY**

2-CABLE INSTALLATION

ROGUE PRO KIT

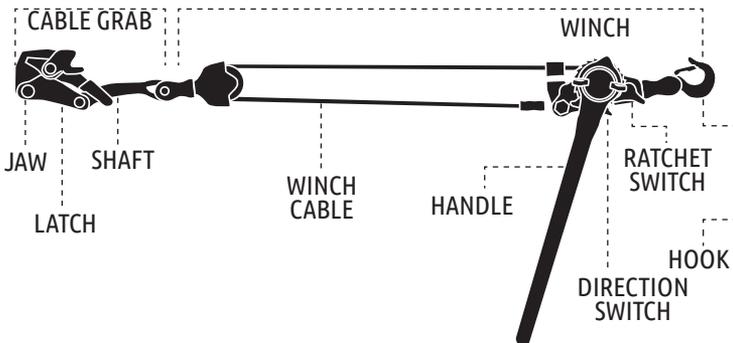
1 WRAP **CABLE SLING** AROUND **ANCHOR**. PULL UP TO DESIGNATED HEIGHT.



CONNECT **LOOPS** OF **CABLE SLING** TO **9/16 QUICK LINK** AT CALCULATED HEIGHT, CONNECT **QUICKLINK** TO **LOOP** OF **MAIN CABLE**. TIGHTEN **QUICKLINK** WITH WRENCH.

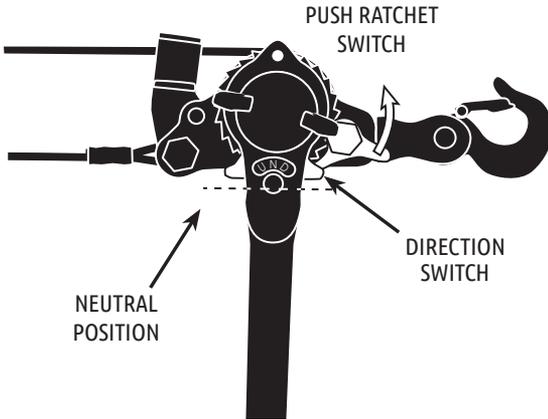
DISTANCE BETWEEN QUICK LINK AND TREE MUST BE AT LEAST HALF THE TREE'S DIAMETER. IF THE CABLE SLING ISN'T LONG ENOUGH, CALL US AND ASK FOR A CUSTOM CABLE SLING.

2 UNROLL CABLE ACROSS CABLE AVENUE TO OPPOSITE **ANCHOR**.



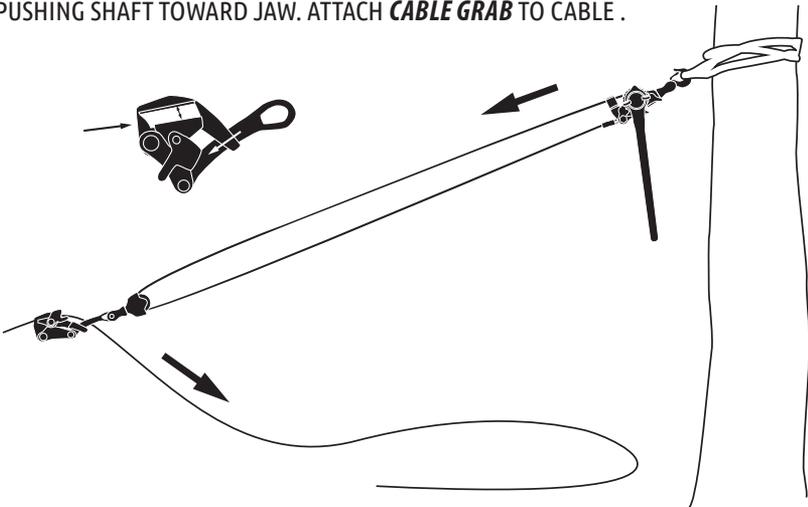
TENSIONING KIT

3 TO EXTEND TENSIONING KIT: PUT **DIRECTION SWITCH** INTO NEUTRAL. PUSH **RATCHET SWITCH** TO DISENGAGE GEAR WHILE PULLING OUT **CABLE** TO UNWIND.

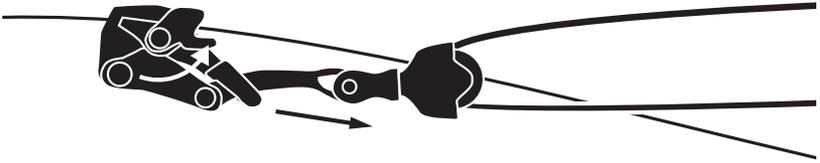


2-CABLE INSTALLATION

4 WRAP **TENSIONER STRAP** AROUND SECOND **ANCHOR**, ABOUT A FOOT OVER CALCULATED ZIP LINE HEIGHT, AND HOOK **TENSIONER** IN **STRAP LOOPS**. OPEN **GRAB** BY PUSHING SHAFT TOWARD JAW. ATTACH **CABLE GRAB** TO CABLE .

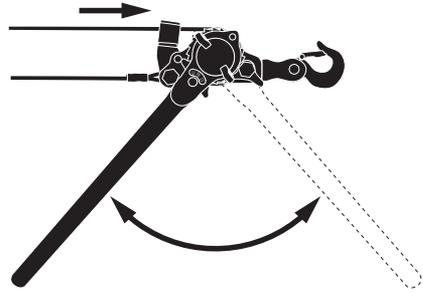
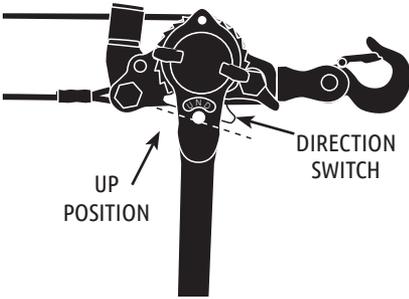


5 CLOSE **LATCH** TO LOCK **CABLE** IN PLACE.



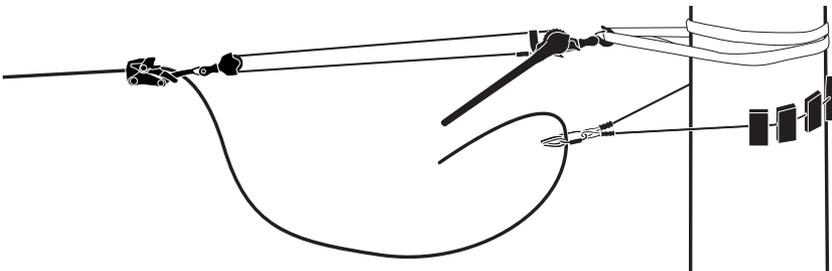
6 SWITCH **DIRECTION SWITCH** TO “UP” (U). CRANK **HANDLE** TO TENSION UNTIL ZIP LINE **CABLE** IS LIFTED OFF GROUND TO APPROPRIATE HEIGHT.

2-CABLE INSTALLATION

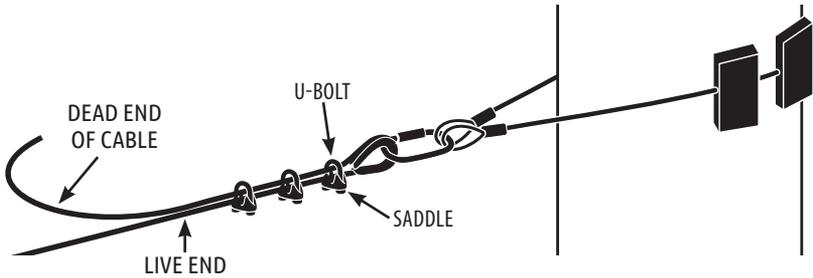


!! WARNING !!
NEVER ATTEMPT TO TENSION ZIP LINE WHILE WINCH IS SWITCHED TO “DOWN” (D) POSITION.

7 WRAP SECOND **CABLE SLING** AROUND **ANCHOR** AT CALCULATED HEIGHT, CONNECT TO **THIMBLE** AND **9/16 QUICK LINK**. TIGHTEN **QUICK LINK** WITH WRENCH.



8 THREAD **CABLE** THROUGH **QUICK LINK**, AROUND **THIMBLE** AND BACK ON ITSELF, PULLING TAUT. SECURE WITH **CABLE CLAMPS**. **U-BOLT** PORTION OF **CLAMPS** MUST PRESS AGAINST **DEAD END** OF CABLE AND THE **SADDLE** PRESS AGAINST **LIVE END** OF THE CABLE.

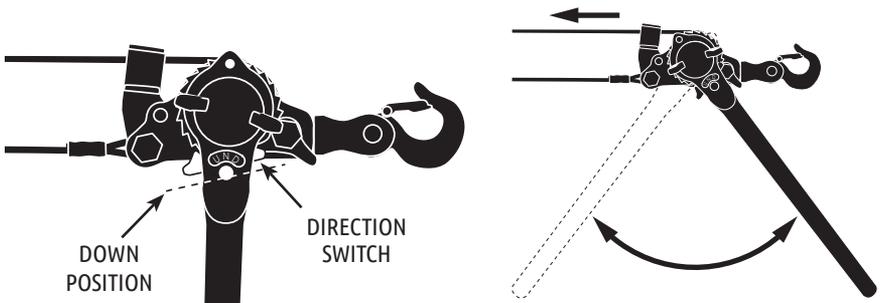


9 **CLAMPS** SHOULD BE SPACED **1 TO 2 INCHES** APART AND MUST BE TIGHTENED WITH A WRENCH MODERATELY PAST SNUG (≈ 30 FT. LBS).

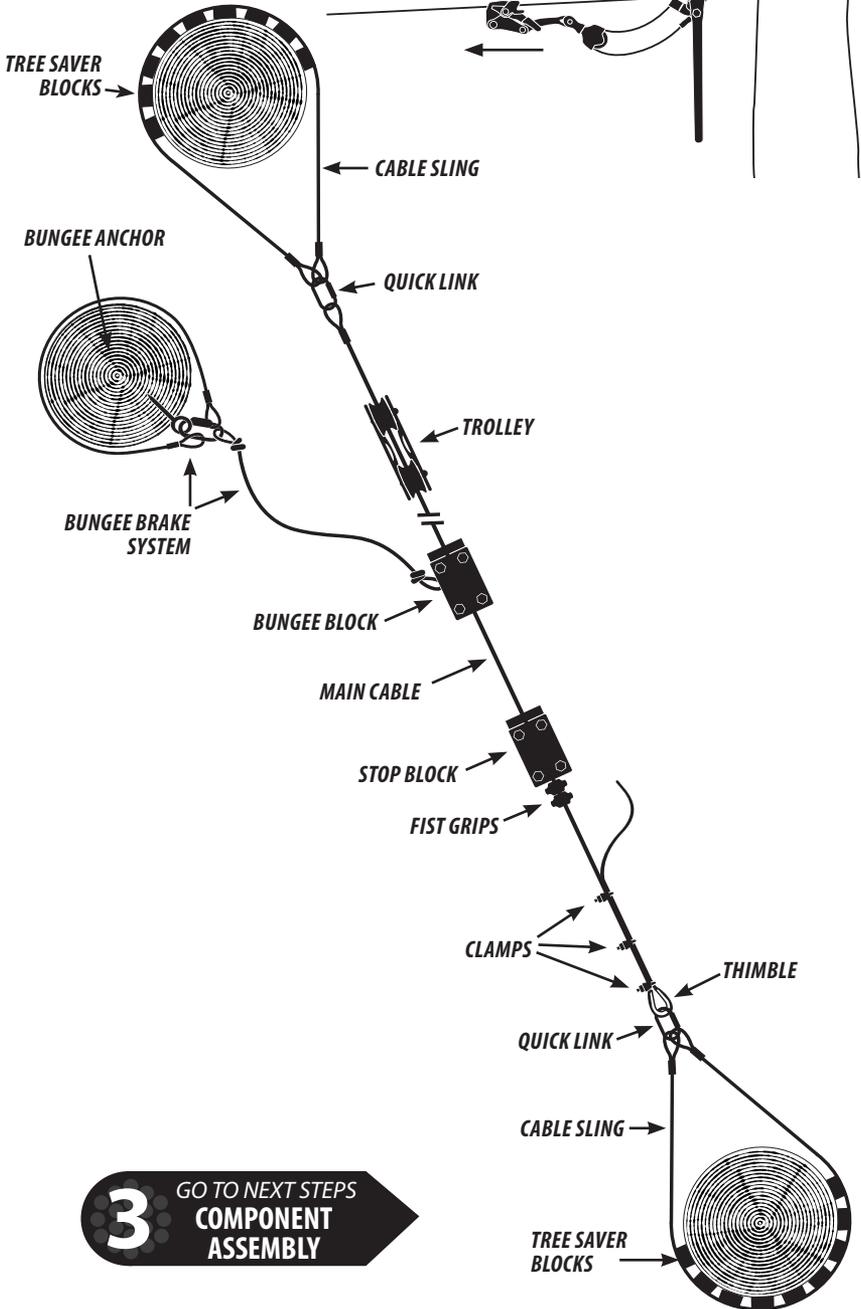
2-CABLE INSTALLATION

!! WARNING !!
NEVER ATTEMPT TO RIDE OR APPLY WEIGHT TO ZIP LINE WHILE TENSION REMAINS ON WINCH.

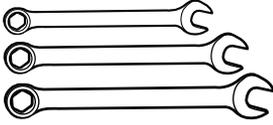
10 RELEASE **WINCH** TENSION BY FLIPPING **SWITCH** TO "**DOWN**" (**D**) AND CRANKING THE HANDLE.



TENSION WILL TRANSFER TO **MAIN CABLE** AND **TENSIONING KIT** WILL HANG SLACK. REMOVE **GRAB** BY PUSHING FORWARD. REMOVE TENSIONING KIT AND STRAP.



SLEADD KITS



**1/2", 11/16" AND 7/8"
WRENCHES (INCLUDED)**



**3/16" HEX KEY
(INCLUDED)**



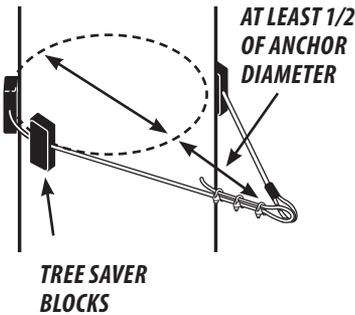
**GLOVES
(NOT INCLUDED)**

THE **CABLE SLING**, **TRI-LINK™** AND **WINCH** CAN BE INSTALLED ON EITHER END OF THE ZIP LINE. BE AWARE THAT THESE COMPONENTS WILL TAKE UP 3-4 FT. OF LENGTH; DECIDE WHICH END WILL BE MOST PRACTICAL FOR YOUR RIDERS.

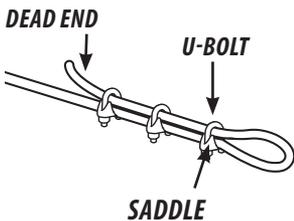
150LX AND 250LX KITS

THREAD **CABLE SLING** THROUGH CENTER HOLES OF **8 TREE-SAVER BLOCKS**.

WRAP **CABLE SLING** AROUND **ANCHOR**. PULL UP TO DESIGNATED HEIGHT. CREATE LOOP AT OPEN END OF **CABLE SLING** AND ADJUST SO LOOPS OF SLING MEET AT A DISTANCE HALF OF THE ANCHOR'S DIAMETER.

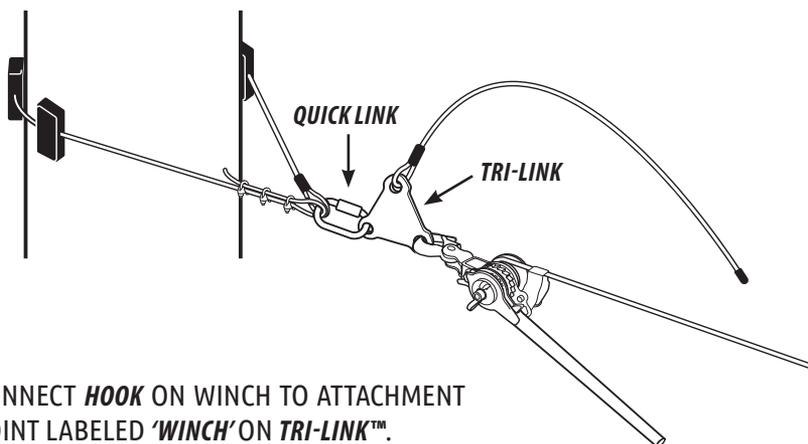


CLAMP END OF **CABLE SLING** INTO SMALL LOOP USING **THREE CABLE CLAMPS**. CLAMPS SHOULD BE SPACED **1 TO 2 INCHES** APART AND MUST BE TIGHTENED WITH A WRENCH MODERATELY PAST SNUG (≈ 30 FT. LBS).



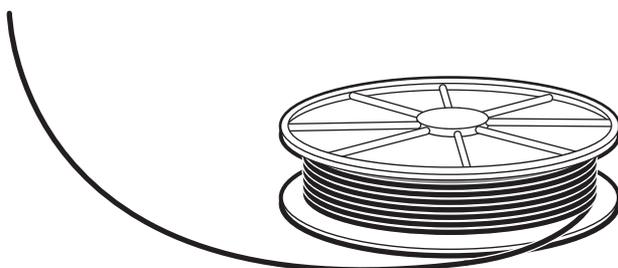
U-BOLT OF CLAMPS MUST PRESS AGAINST **DEAD END** OF CABLE AND THE **SADDLE** PRESS AGAINST **LIVE END** OF THE CABLE.

2-CABLE INSTALLATION



CONNECT **HOOK** ON WINCH TO ATTACHMENT POINT LABELED '**WINCH**' ON **TRI-LINK™**.

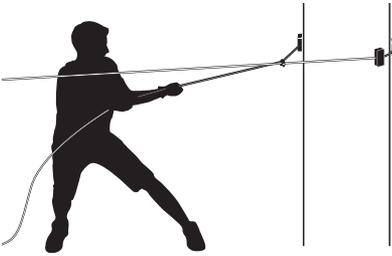
CONNECT **CABLE SLING LOOPS** USING A **9/16 QUICK LINK** TO ATTACHMENT POINT LABELED '**ANCHOR**' ON **TRI-LINK™** MAKING SURE TO ORIENT **TRI-LINK™** WITH ATTACHMENT POINT LABELED '**MAIN**' ON TOP. TIGHTEN **9/16 QUICK LINK** USING COMBINATION **WRENCH**.



UNROLL CABLE ACROSS CABLE AVENUE TO OPPOSITE **ANCHOR**.

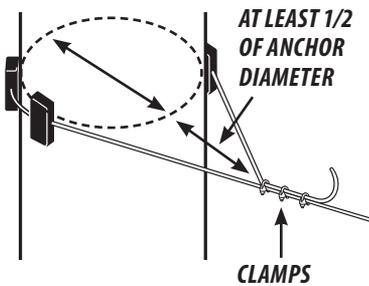
HELPFUL HINT: USE PIPE OR BROOM HANDLE IN CENTER HOLE OF SPOOL TO MAKE UNWINDING EASIER.

THREAD **CABLE** THROUGH CENTER HOLES OF **8 TREE-SAVER BLOCKS**.



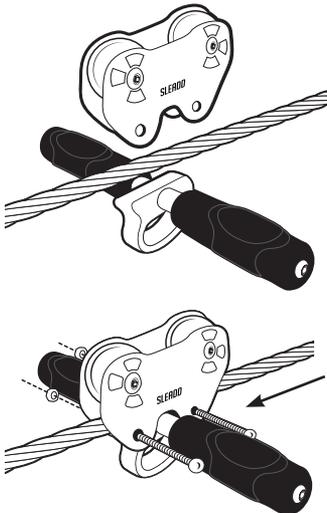
WRAP **CABLE** AROUND **OPPOSITE ANCHOR** AT DESIGNATED HEIGHT.

PULL AS TIGHT AS POSSIBLE BY HAND, IDEALLY UNTIL THE ENTIRE LENGTH OF CABLE IS OFF THE GROUND. BE SURE TO WEAR **GLOVES**. HAVE A FRIEND SECURE CABLE IN PLACE AROUND ANCHOR WITH **THREE CABLE CLAMPS**.



CLAMPS SHOULD BE SPACED **1 TO 2 INCHES** APART AND MUST BE TIGHTENED WITH A WRENCH MODERATELY PAST SNUG (≈ 30 FT. LBS).

U-BOLT PORTION OF CLAMPS MUST PRESS AGAINST **DEAD END** OF CABLE AND THE **SADDLE** PORTION MUST PRESS AGAINST THE **LIVE END** OF THE CABLE.



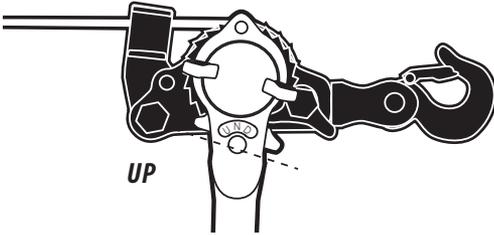
TROLLEY ASSEMBLY

PLACE WHEELED PORTION OF **TROLLEY** OVER **CABLE**. SLIDE **HANDLEBAR COLLAR** UP INTO **SIDE PLATES**.

INSERT TWO **BOLTS** THROUGH **TROLLEY** AND **HANDLEBAR COLLAR**. SECURE WITH **NUTS**. TIGHTEN **HEX BOLTS** MODERATELY TIGHT (≈ 20 FT. LBS) WITH PROVIDED **WRENCHES**.

TENSIONING SLEADD KITS

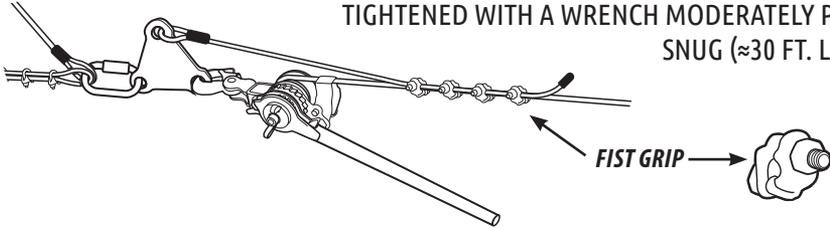
SWITCH **DIRECTION SWITCH** TO “UP” (U) POSITION. CRANK TO TENSION CABLE.



!! WARNING !!
NEVER ATTEMPT TO TENSION ZIP LINE WHILE WINCH IS SWITCHED TO “DOWN” (D) POSITION.

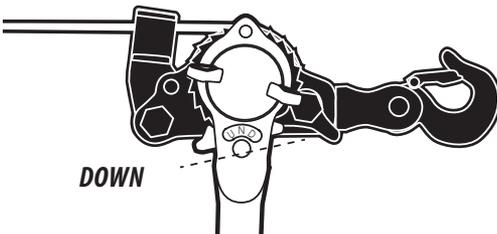
WHEN ZIP LINE IS TIGHTENED TO DESIRED TENSION, CLAMP **SHORT TRI-LINK™ CABLE** TO **MAIN CABLE** IN FRONT OF **WINCH** USING FOUR **FIST GRIPS**.

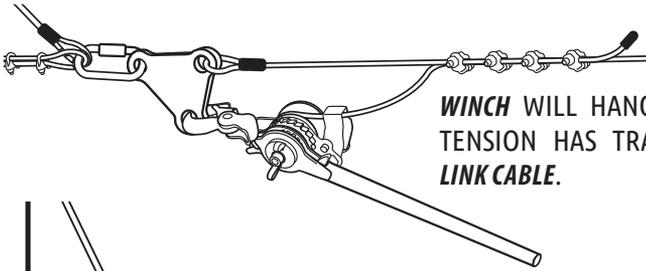
FIST GRIPS MUST BE SPACED **1 TO 2 INCHES** APART AND TIGHTENED WITH A WRENCH MODERATELY PAST SNUG (≈30 FT. LBS).



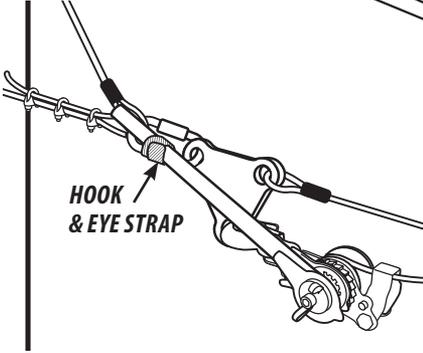
!! WARNING !!
NEVER ATTEMPT TO RIDE OR APPLY WEIGHT TO ZIP LINE WHILE TENSION REMAINS ON WINCH.

SWITCH **DIRECTION SWITCH** TO “DOWN” (D) POSITION. CRANK TO DETENSION WINCH.





WINCH WILL HANG LOOSE WHEN ALL TENSION HAS TRANSFERRED TO **TRI-LINK CABLE**.



**HOOK
& EYE STRAP**

OPTIONAL: USE INCLUDED **HOOK-AND-EYE STRAP** TO FASTEN **WINCH HANDLE** TO **QUICK LINK**. THIS WILL SECURE THE HANDLE FROM JOSTLING DURING ZIP LINE RIDES.

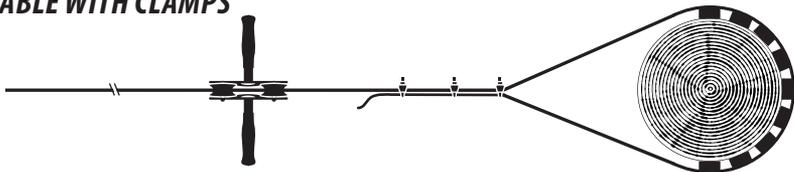
3 GO TO NEXT STEPS
**COMPONENT
ASSEMBLY**

2-CABLE INSTALLATION

ALTERNATE TERMINATION STYLES

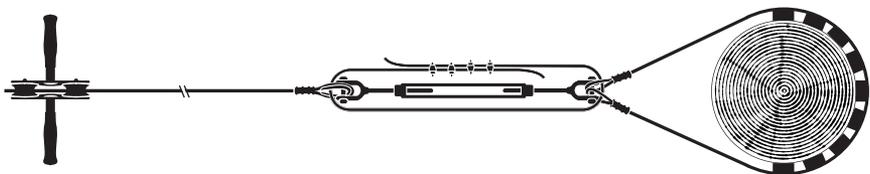
ATTENTION CHETCO TROLLEY OWNERS - HELPFUL HINT: WE RECOMMEND PULLING THE CABLE THROUGH THE CHETCO TROLLEY BEFORE TERMINATING THE CABLE ON BOTH ENDS.

RAW CABLE WITH CLAMPS



ONE OF THE MOST SIMPLE CONNECTIONS IS JUST A LENGTH OF RAW CABLE TERMINATED WITH AT LEAST 3 CABLE CLAMPS PER SIDE. THIS TERMINATION METHOD IS IDEAL WHEN USING TREES.

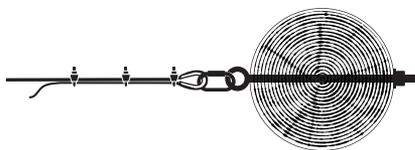
TURNBUCKLES AND SLINGS



TURNBUCKLES CAN BE UTILIZED FOR FINER CABLE TENSION ADJUSTMENTS. WHEN USING A TURNBUCKLE, ATTACH IT TO A CABLE SLING WRAPPED AROUND THE ANCHOR, OR TO AN EYEBOLT.

ALWAYS INSTALL TURNBUCKLE BACK-UP CABLES. BACK-UP CABLE MUST THREAD THROUGH CABLE LOOPS ON BOTH SIDES.

EYEBOLTS & QUICK LINKS



EYEBOLTS ARE IDEAL FOR WOOD OR METAL POLES. THE EYEBOLT MUST BE LONG ENOUGH TO HAVE THREADS PROTRUDE THROUGH POLE, WASHER AND NUT, AND HAVE A PROPER STRENGTH RATING. A THIMBLE MUST BE USED TO CREATE THE TIGHT CONNECTION LOOP ON THE ZIPLINE CABLE. THE QUICK LINK IS OPTIONAL, BUT MUST HAVE THE STRENGTH RATING EQUAL TO OR GREATER THAN THE ZIPLINE CABLE. A QUICK LINK MAY ALSO BE USED TO CONNECT THE CABLE TO THE SLING INSTEAD OF TURNBUCKLE.

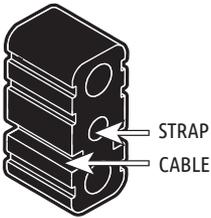
3 GO TO NEXT STEPS
COMPONENT
ASSEMBLY

COMPONENT ASSEMBLY

TREE SAVER KIT

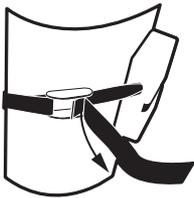
(AVAILABLE AS ADD-ON IF NOT INCLUDED IN THE KIT)

WITH CAM STRAP



THREAD STRAP THROUGH CENTER HOLE IN EACH BLOCK.

WRAP BLOCKS, STRAP AROUND BASE OF TREE OR POLE. LIFT STRAP TO DESIRED ATTACHMENT HEIGHT.

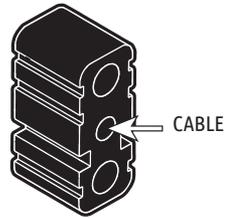


THREAD END OF STRAP THROUGH CAM, PRESS TAB TO PULL STRAP THROUGH, RELEASE IT TO SECURE THE STRAP IN PLACE.

WRAP CABLE AROUND BLOCKS, SECURING CABLE INTO BLOCK GROOVES.

TERMINATE CABLE WITH DESIGNATED HARDWARE.

WITH CABLE

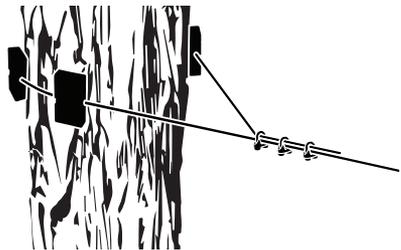
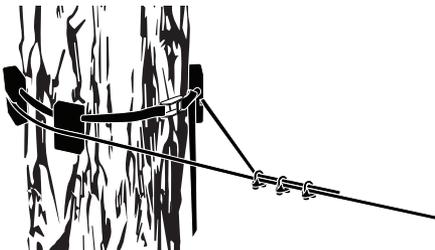


THREAD CABLE SLING OR ZIP LINE CABLE THROUGH BLOCKS.

WRAP CABLE, BLOCKS AROUND TREE OR POLE. LIFT CABLE TO DESIRED ATTACHMENT HEIGHT.

TERMINATE CABLE WITH DESIGNATED HARDWARE.

HELPFUL HINT: DO NOT PUT CABLE DIRECTLY ON THE TREE. IF YOU DO NOT HAVE THE TREE SAVER KIT, PLACE WOOD BLOCKS UNDER THE CABLE TO PROTECT YOUR TREES.



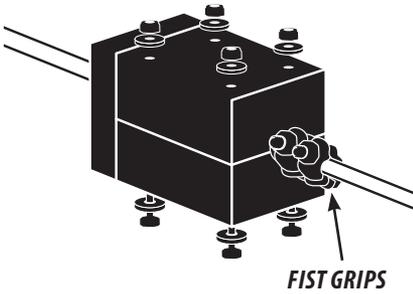
3-COMPONENT ASSEMBLY

STOP BLOCK

!! WARNING !!

THE STOP BLOCK IS A SAFETY BACK-UP AT THE VERY END OF THE RIDE AND IS NOT A BRAKING SYSTEM. RIDERS SHOULD HAVE LITTLE TO NO SPEED WHEN THEIR TROLLEY MAKES CONTACT WITH THE STOP BLOCK.

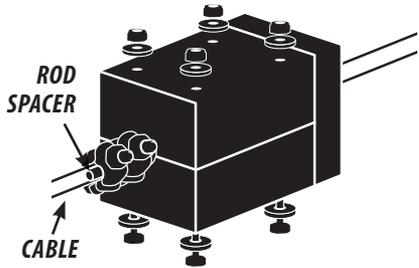
STOP BLOCK MUST BE PLACED 5 FT. FROM END ANCHOR



MOUNT **STOP BLOCK** ONTO **CABLE** WITH **RUBBER BUMPER** FACING TOWARD MAIN LINE AND AT LEAST 5 FT. FROM THE ENDING ANCHOR. INSERT **BOLTS** THROUGH **BLOCK** AND **WASHERS**. TIGHTEN **NUTS** WITH A **WRENCH**. MOUNT **FIST GRIPS** TO **CABLE** SNUGLY AGAINST **STOP BLOCK** AS SHOWN. TIGHTEN WITH A **WRENCH** TO THE PROPER SPECIFICATIONS (SEE CHART BELOW).

3-COMPONENT ASSEMBLY

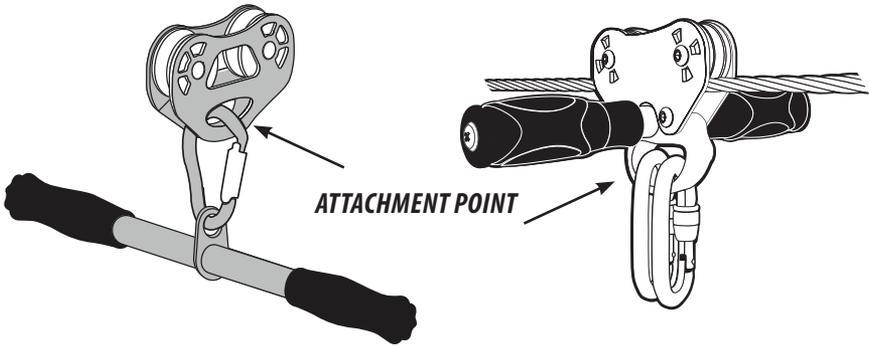
FOR 1/4" CABLE, CLAMP A **ROD SPACER** TO CABLE WITH FIST GRIPS.



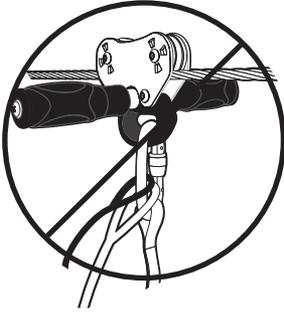
FIST GRIP TORQUE CHART (FOR STOP BLOCK ONLY)

1/4" STOP BLOCK	30 FT. LBS.
5/16" STOP BLOCK	30 FT. LBS.
3/8" STOP BLOCK	30 FT. LBS.
1/2" STOP BLOCK	45 FT. LBS.

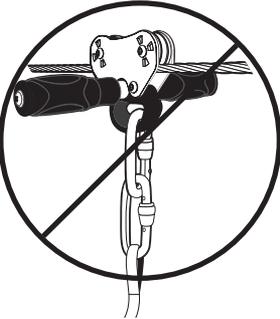
RIDING GEAR



ONLY ATTACH **CARABINERS** TO THE ATTACHMENT POINT OF TROLLEY.

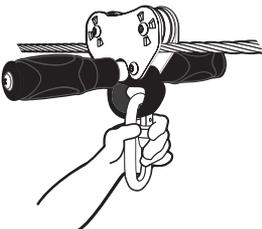


EACH RIDING GEAR ACCESSORY (E.G. HARNESS, SEAT, HANDLEBAR) MUST USE ITS OWN DEDICATED **CARABINER** ATTACHED DIRECTLY TO THE TROLLEY.



!! WARNING !!

DO NOT CHAIN-LINK CARABINERS OR ATTACH MULTIPLE ACCESSORIES INTO ONE CARABINER.



BEFORE EACH RIDE, SQUEEZE-TEST **CARABINERS** TO ENSURE **LOCKING GATE** IS FULLY ENGAGED.

SEAT

(AVAILABLE AS ADD-ON)

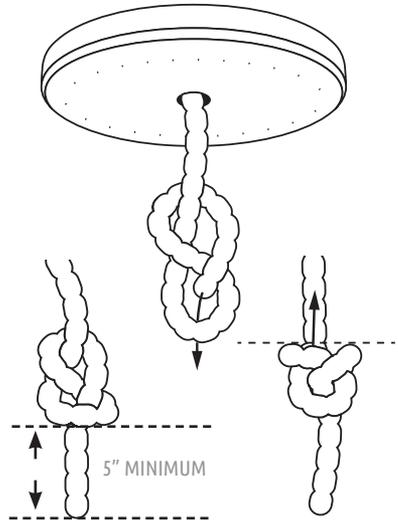
THE KNOT

THREAD THE ROPE THROUGH SEAT AND
TWIST INTO A FIGURE-EIGHT.

THREAD ROPE THROUGH ITSELF, PULLING
5-INCHES OF ROPE, MINIMUM.

PULL UPPER HALF OF ROPE WHILE PUSHING
DOWN ON KNOT TO CREATE A FLAT TOP.

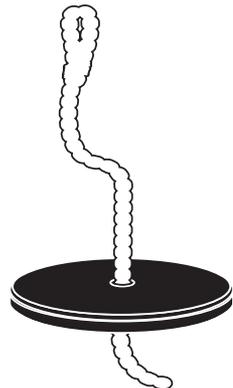
DO NOT USE SEAT WITH LESS THAN 5" OF
ROPE FOLLOWING THE KNOT.



HELPFUL HINT: A FRESH COAT OF OUTDOOR WOOD STAIN ONCE A YEAR AND KEEP-
ING THE SEAT INDOORS WHILE NOT IN USE IS RECOMMENDED TO EXTEND SEAT
LIFETIME.

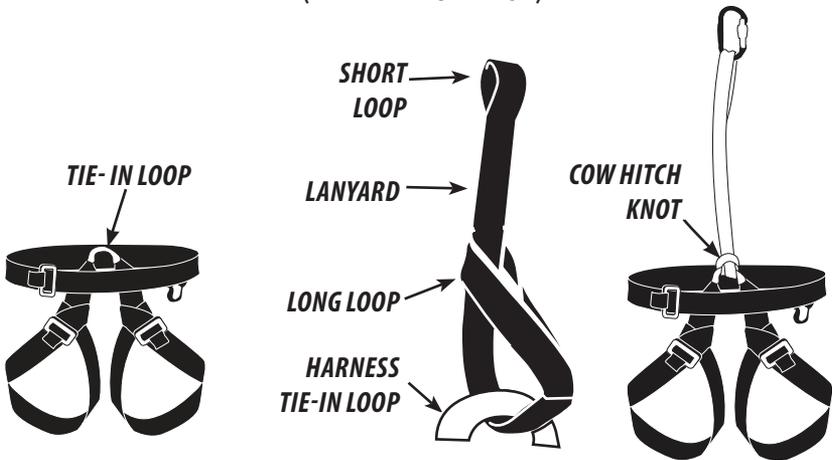
!! WARNING !!

ACCESSORIES SUCH AS HANDLEBAR OR HARNESS SHOULD NEVER BE AT-
TACHED TO THE SPLICED EYE OR THROUGH OPEN STRANDS ON THE ROPE.
ACCESSORIES MUST ALWAYS BE CLIPPED DIRECTLY TO THE TROLLEY.



HARNESS

(AVAILABLE AS ADD-ON)



BEFORE EACH RIDE, SQUEEZE-TEST **CARABINERS** TO ENSURE **LOCKING GATE** IS FULLY ENGAGED.

THREAD **LONG LOOP** OF **LANYARD** THROUGH **HARNESS TIE-IN LOOP** THEN THREAD **LANYARD SHORT LOOP** THROUGH ITS **LONG LOOP** TO CREATE **COW-HITCH KNOT**.

ATTACH **SHORT LOOP** OF **LANYARD** TO **TROLLEY** WITH ONE **CARABINER**.

!! WARNING !!

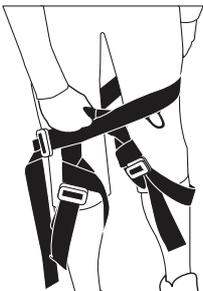
ALWAYS USE RIDING GEAR THAT IS DESIGNED FOR SAFETY-CRITICAL APPLICATIONS AND APPROVED FOR ZIP LINE USE.

ALWAYS USE A **HARNESS** FOR ZIP LINES WHERE A FALL COULD RESULT IN INJURY.

HARNESSES MUST BE CORRECTLY SIZED AND FITTED BASED ON THE AGE, SIZE AND BODY TYPE OF PARTICIPANT.

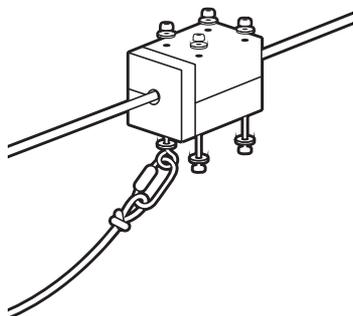
WITH TIE-IN LOOP IN FRONT, STEP THROUGH **WAIST LOOP**, THEN **LEG LOOPS** OF HARNESS, AND PULL HARNESS UP TO WAIST. STRAIGHTEN CLOTHING UNDER HARNESS.

TIGHTEN **STRAPS** FOR FIRM (NOT TIGHT) FIT.

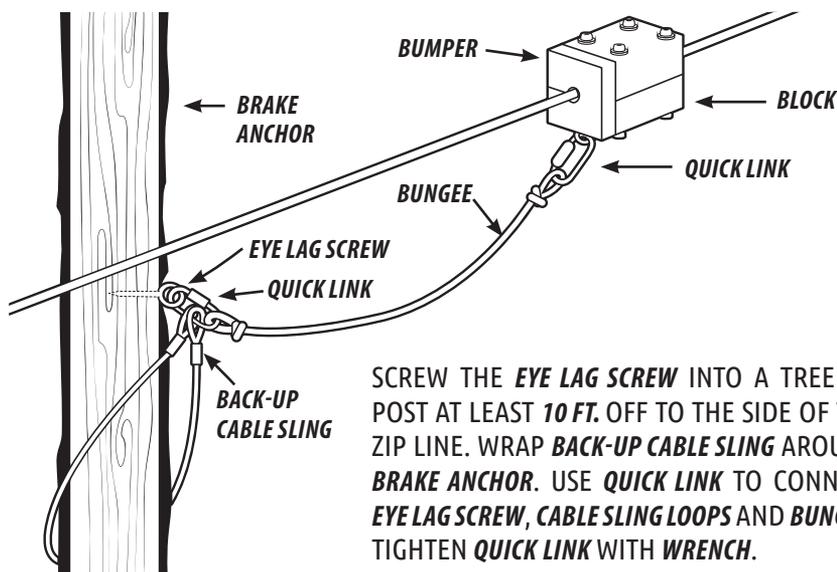


BUNGEE BRAKE SYSTEM

(AVAILABLE AS ADD-ON IF NOT INCLUDED IN THE KIT)



MOUNT ON CABLE WITH **RUBBER BUMPER** FACING TOWARD MAIN LINE. INSERT **BOLTS** THROUGH **BLOCK** AND **WASHERS**. TIGHTEN **NUTS** WITH A WRENCH. ATTACH **BUNGEE** TO **BRAKE BLOCK** WITH **QUICK LINK**. TIGHTEN **QUICK LINK** WITH **WRENCH**.



SCREW THE **EYE LAG SCREW** INTO A TREE OR POST AT LEAST **10 FT.** OFF TO THE SIDE OF THE ZIP LINE. WRAP **BACK-UP CABLE SLING** AROUND **BRAKE ANCHOR**. USE **QUICK LINK** TO CONNECT **EYE LAG SCREW**, **CABLE SLING LOOPS** AND **BUNGEE**. TIGHTEN **QUICK LINK** WITH **WRENCH**.

HELPFUL HINT: DRILLING A 1/4" PILOT HOLE CAN BE HELPFUL FOR SCREWING **EYE LAG SCREW** INTO **BRAKE ANCHOR** TREE OR POST.

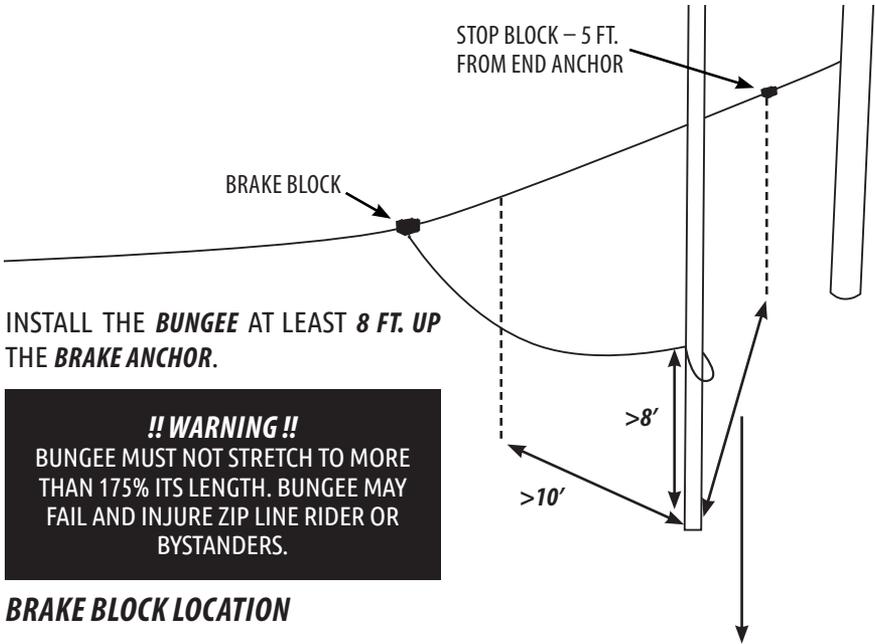
!! WARNING !!

EYE-LAG SCREW MUST EMBED TO FULL DEPTH IN SOLID WOOD. SCRAPE AWAY ANY BARK THAT PREVENTS THE SCREW FROM EMBEDDING FULLY INTO WOOD.

!! WARNING !!

NEVER USE A BUNGEE BRAKE WITHOUT A BACK-UP CABLE SLING.

!! WARNING !!
DO NOT ATTEMPT TO RIDE YOUR ZIP LINE WITHOUT FIRST TESTING.



INSTALL THE **BUNGEE** AT LEAST **8 FT. UP** THE **BRAKE ANCHOR**.

!! WARNING !!
BUNGEE MUST NOT STRETCH TO MORE THAN 175% ITS LENGTH. BUNGEE MAY FAIL AND INJURE ZIP LINE RIDER OR BYSTANDERS.

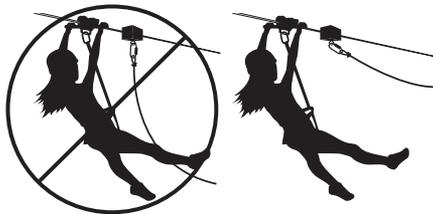
BRAKE BLOCK LOCATION

20-FT. BUNGEE BRAKE - 29.5 FT. AWAY FROM THE ENDING ANCHOR OR STOP BLOCK
30-FT. BUNGEE BRAKE - 47 FT. AWAY FROM THE ENDING ANCHOR OR STOP BLOCK.

LENGTH OF BUNGEE MINUS 3 FT. X 1.75 = DISTANCE FROM BUNGEE ANCHOR TO STOP BLOCK, 3 FT. TO ACCOUNT FOR KNOTS.

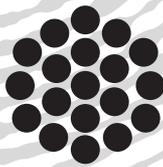
EXAMPLE: 20 FT. BUNGEE - 3 = 17 X 1.75 = 29.5 FT. **OR** 30 FT. BUNGEE - 3 = 27 FT. X 1.75 = 47 FT.

!! WARNING !!
DO NOT ALLOW BUNGEE TO SAG INTO THE RIDER'S WAY, IT CAN ENTANGLE THE RIDER.



4 GO TO NEXT STEPS
INSPECTION

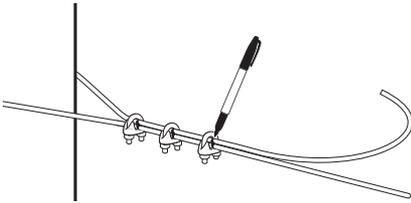
3-COMPONENT ASSEMBLY



ZIPLINEGEAR

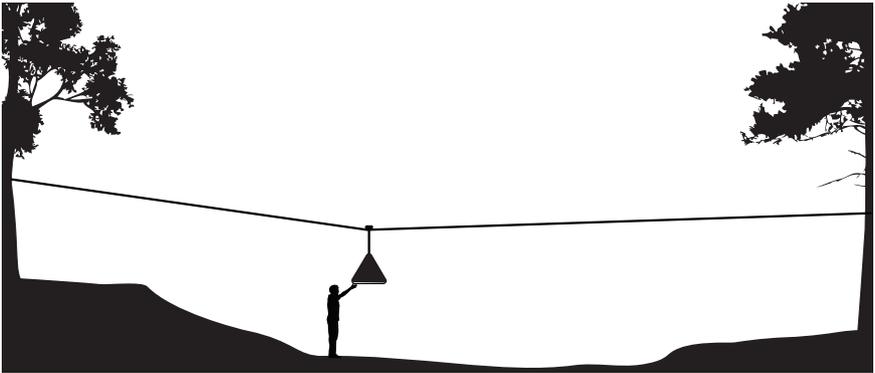
INSPECTION

CABLE WEIGHT TEST



MARK CABLE AT EACH **CABLE CLAMP** AND **FIST GRIP**. AFTER USING TEST WEIGHT TO TEST ZIP LINE, INSPECT MARKS FOR INDICATION OF CLAMP SLIPPAGE.

ATTACH A **TEST WEIGHT**, EQUAL TO WEIGHT OF HEAVIEST PARTICIPANT, TO TROLLEY MOUNTED ON CABLE.



!! WARNING !!

NEVER PLACE MORE THAN 350 POUNDS ON ZIP LINE.

!! WARNING !!

NEVER USE A PERSON AS A TEST WEIGHT WHEN PERFORMING THE WEIGHT TEST.

BOUNCE **TEST WEIGHT** UP AND DOWN. OBSERVE **ANCHORS** AT EITHER END OF CABLE FOR EXCESSIVE MOVEMENT.

ALLOW **TEST WEIGHT** TO SETTLE AT THE LOWEST POINT OF THE CABLE.

CABLE SAG IS MEASURED FROM THE LOWEST POINT ON THE CABLE TO THE ATTACHMENT HEIGHT OF THE CABLE ON THE ENDING ANCHOR.

DETACH TEST WEIGHT AND INSPECT TERMINATION **HARDWARE** AND **ANCHORS** FOR PROPER CONFIGURATION AND STRENGTH.

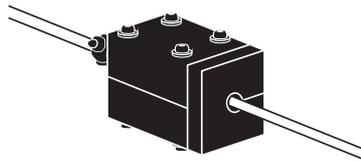
CHECK FOR SLIPPAGE OF CABLE THROUGH **CABLE CLAMPS** AND **FIST GRIPS** TO VERIFY THEY ARE ADEQUATELY TIGHTENED. CHECK ANCHORS FOR DEFORMATION.

!! WARNING !!

DO NOT USE ZIP LINE IF ANY SLIPPAGE, DEFORMATION, MISCONFIGURATION, INADEQUATE CABLE SAG OR OTHER POTENTIALLY HAZARDOUS CONDITION IS FOUND WHEN PERFORMING THE ABOVE TEST. THE CLAMPS OR FIST GRIPS MUST BE RE-TIGHTENED, EQUIPMENT REPLACED OR RECONFIGURED, CABLE SAG INCREASED, ANCHORS REINFORCED WITH GUY CABLES OR DIFFERENT ANCHORS CHOSEN, OR FURTHER PROFESSIONAL ADVICE SOUGHT AS APPROPRIATE FOR THE SITUATION BEFORE A PARTICIPANT IS ALLOWED ON THE ZIP LINE.

STOP BLOCK

INSPECT **STOP BLOCK** TO CONFIRM NUTS AND BOLTS ARE TIGHTLY SECURING THE TWO HALVES TOGETHER. BLOCK MUST BE SNUG AROUND THE CABLE. CONFIRM **FIST GRIPS** ARE PROPERLY TIGHTENED AND NOT SLIPPING CLOSER TO THE END ANCHOR. STOP BLOCK MUST MAINTAIN 5 FT. MINIMUM DISTANCE FROM END ANCHOR. CONFIRM THERE ARE NO CRACKS IN THE BLOCK OR OTHER OBSERVABLE DAMAGE.



!! WARNING !!

DO NOT USE ZIP LINE IF THERE IS DAMAGE TO THE STOP BLOCK. RETIRE AND REPLACE IMMEDIATELY.

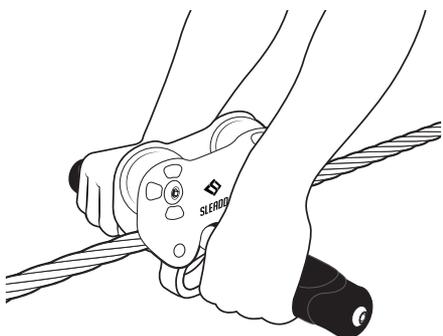
RIDING GEAR

INSPECT **RIDING GEAR** FOR IMPROPER CONFIGURATION, DAMAGE, FRAYING, BENDING, TEARING, CRACKING, SLIPPING OR ANY OTHER CHARACTERISTIC THAT WOULD INDICATE EQUIPMENT'S PERFORMANCE AND/OR STRENGTH HAVE BEEN COMPROMISED.

!! WARNING !!

DO NOT USE ZIP LINE IF THERE IS DAMAGE TO THE RIDING GEAR. RETIRE AND REPLACE IMMEDIATELY.

INSPECT ALL RIDING GEAR BEFORE EACH RIDE.



TROLLEY – SPIN **WHEELS** TO CHECK FOR EXCESSIVE FRICTION OR ROUGHNESS. CHECK FOR LOOSE HARDWARE AND INSIDE OF HOUSING FOR EXCESSIVE WEAR FROM CABLE ABRASION. THE SIDE PLATES MUST NOT RUB AGAINST THE CABLE OR WHEELS. RETIRE AND REPLACE TROLLEY IF SIDE PLATES HAVE EXCESSIVE FRICTION MARKS FROM CABLE OR WHEELS.

TWIST **HANDLEBAR GRIPS** IN BOTH HANDS TO CHECK FOR ROTATION OR SLIPPING. (IF APPLICABLE)

!! WARNING !!

DO NOT USE ZIP LINE IF THERE IS DAMAGE TO THE TROLLEY, LOOSE OR MISSING GRIPS. RETIRE AND REPLACE IMMEDIATELY.

CARABINERS – CHECK THAT GATE PROPERLY CLOSES AND LOCKING MECHANISM OPERATES WITHOUT FAULT. CHECK FOR EXCESSIVE WEAR AT POINTS OF CONTACT BETWEEN CARABINER AND LANYARD, AND BETWEEN CARABINER AND TROLLEY.

!! WARNING !!
RETIRE CARABINER IF LOCKING MECHANISM IS NOT CLOSING PROPERLY.

LANYARDS – INSPECT FOR EXCESSIVE WEAR OR LOOSE STITCHING.

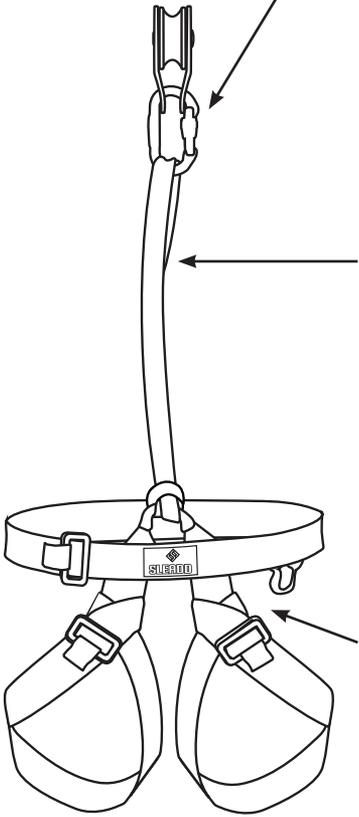
!! WARNING !!
WEIGHT SUPPORTING EQUIPMENT SUCH AS LANYARDS OR CARABINERS MUST BE ATTACHED ONLY TO FULL STRENGTH TIE-IN LOOPS ON HARNESS.

HARNESSES – EXAMINE ALL STRAPS, TIE-IN POINTS AND SEAMS FOR LOOSE STITCHING, ABRASION OR UNRAVELING. CHECK METAL BUCKLES FOR BENDS, CRACKS OR SHARP SPOTS.

!! WARNING !!
IF ANY DAMAGE, FAULT, EXCESSIVE WEAR OR OTHER POTENTIALLY HAZARDOUS CONDITION IS OBSERVED, THE EQUIPMENT MUST IMMEDIATELY BE RETIRED AND REPLACED.

IF YOUR ZIPLINE DOES NOT HAVE A BUNGEE BRAKE SYSTEM.

5 GO TO NEXT STEPS
OPERATION



BUNGEE BRAKE TEST

SEND **TEST WEIGHT** FROM VERY BEGINNING OF ZIP LINE TO TEST **BUNGEE BRAKE SYSTEM**.

!! WARNING !!

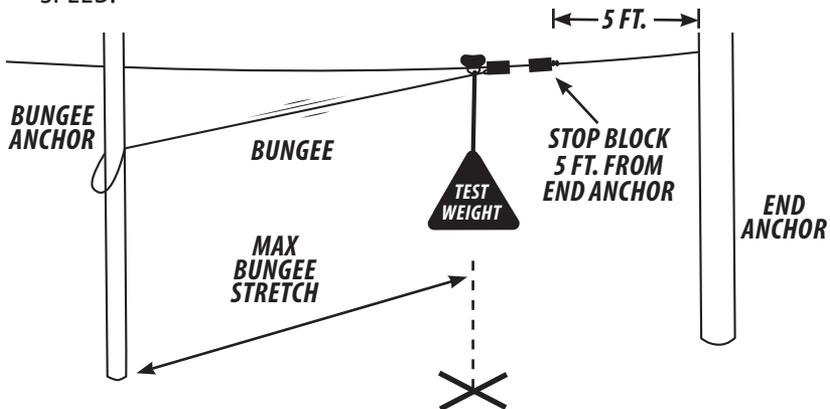
DO NOT ALLOW BUNGEE TO STRETCH TO MORE THAN 175% THE BUNGEE'S LENGTH. BUNGEE MAY FAIL AND INJURE ZIP LINE RIDER OR BYSTANDERS.

MEASURE TO AVOID OVERSTRETCH

WHEN THE BUNGEE STRETCHES TO ITS MAX, DROP A **VISUAL MARKER** ON THE GROUND BELOW THE TEST WEIGHT AT THAT POINT. MEASURE FROM THIS MARKER TO THE BUNGEE ANCHOR POINT.

IF THE BUNGEE IS OVERSTRETCHING OR IMPACTING THE STOP BLOCK WITH TOO MUCH FORCE:

- DOUBLE UP THE BUNGEE'S STRENGTH BY ADDING A SECOND BUNGEE CORD PARALLEL TO THE ORIGINAL CORD.
-OR-
- REDUCE CABLE SLOPE AND/OR INCREASE CABLE SAG TO SLOW THE RIDER'S SPEED.



LENGTH OF BUNGEE MINUS 3 FT. X 1.75 = DISTANCE FROM BUNGEE ANCHOR TO STOP BLOCK. 3 FT. TO ACCOUNT FOR KNOTS.

EXAMPLE: 20 FT. BUNGEE - 3 = 17 X 1.75 = 29.5 FT. **OR** 30 FT. BUNGEE - 3 = 27 FT. X 1.75 = 47 FT.

BUNGEE BRAKE INSPECTION & MAINTENANCE

INSPECTING YOUR BUNGEE BRAKE PRIOR TO EACH USE IS A GOOD PRACTICE.

THE BUNGEE BLOCK IS MADE OF NYLON AND THE FRONT BUMPER IS MADE OF RUBBER. THE BUMPER TAKES ALL THE HITS FROM YOUR TROLLEY. IF YOUR TROLLEY IS NO LONGER CUSHIONED BY THE RUBBER BUMPER AND IS HITTING THE NYLON BLOCK, THE BLOCK MUST BE RETIRED AND REPLACED.

THE BUNGEE CORD HAS A BLACK SHEATH THAT SURROUNDS DOZENS OF WHITE ELASTIC CORDS. WITH USE AND EXPOSURE TO THE ELEMENTS, THE BUNGEE WILL EVENTUALLY SHOW SIGNS OF WEAR. IF ANY OF THE FOLLOWING IS OBSERVED DURING INSPECTION, YOUR BUNGEE CORD MUST IMMEDIATELY BE RETIRED AND REPLACED:

- FRAYING, EXPOSED WHITE ELASTIC ALONG THE LENGTH OF THE BUNGEE CORD.
- A NOTICEABLY SMALLER DIAMETER OR BULGING ALONG THE LENGTH OF BUNGEE CORD (A SIGN OF INTERNAL STRANDS BREAKING).
- STRETCHED OUT BUNGEE THAT DOESN'T RETRACT WHEN PULLED.

CONFIRM BOTH QUICK-LINK GATES ARE TIGHTENED WITH A WRENCH.

AS A BACKUP TO PREVENT SLIPPAGE OF THE EYE-LAG SCREW, A CABLE SLING MUST BE WRAPPED AROUND THE BACK SIDE OF THE SAME ANCHOR AND THE TWO LOOPS CONNECTED TO THE QUICK LINK HOLDING THE EYE-LAG SCREW.

BUNGEE CORDS MAY LAST UP TO ONE YEAR, HOWEVER WITH MORE USE AND EXPOSURE TO THE ELEMENTS, IT MAY WEAR OUT SOONER. TO EXTEND THE LIFE OF THE BUNGEE CORD, DISCONNECT BUNGEE AT EACH QUICK-LINK AND BRING INDOORS WHEN ZIP LINE IS NOT IN USE.

!! WARNING !!

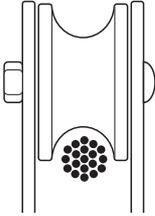
DO NOT RIDE ZIP LINE BEFORE INSPECTION OF BUNGEE SYSTEM HAS BEEN COMPLETED.

5

GO TO NEXT STEPS

OPERATION

OPERATION



BEFORE EACH RIDE, CHECK TO ENSURE TROLLEY IS STRAIGHT UPRIGHT AND WHEELS ARE CENTERED ON CABLE.

!! WARNING !!

NEVER ALLOW CHILDREN TO USE ZIP LINE WITHOUT ADULT SUPERVISION.

!! WARNING !!

ALWAYS WEAR A HELMET WHEN RIDING ZIP LINE.



!! WARNING !!

KEEP HAIR AWAY FROM CABLE.

!! WARNING !!

DO NOT ATTEMPT TO SWITCH RIDING GEAR BETWEEN PARTICIPANTS OR PUT RIDING GEAR ON WHILE STANDING ON AN ELEVATED LAUNCH PLATFORM WHERE A FALL COULD RESULT IN INJURY.

!! WARNING !!

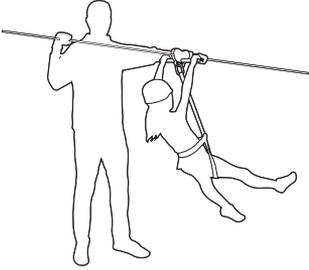
NEVER 'JUMP' FROM A LADDER OR PLATFORM ONTO ZIP LINE.

!! WARNING !!

DO NOT ALLOW RIDERS TO SPIN WHILE CONNECTED WITH A HARNESS OR DRIFTER SEAT. OPTIONAL SWIVEL EQUIPMENT IS OFFERED AT ZIPLINEGEAR.COM

!! WARNING !!

NEVER ATTACH A RIDER TO THE ZIPLINE UNTIL THE PREVIOUS RIDER HAS DISMOUNTED AND PROVIDES CLEARANCE!



A SECOND PERSON MAY BE REQUIRED TO HOLD PARTICIPANT IN PLACE TO PREVENT THEM FROM DESCENDING DOWN THE ZIP LINE BEFORE THEIR TURN TO RIDE.

IF NO HAZARDS ARE OBSERVED ALONG CABLE AVENUE AND IF RIDING GEAR SUCCESSFULLY HOLDS WEIGHT OF PARTICIPANT, THE PARTICIPANT MAY SLOWLY PUSH AWAY FROM PLATFORM AND ALLOW GRAVITY TO PROPEL THEM DOWN THE ZIP LINE.



!! WARNING !!

NEVER PLACE HANDS IN FRONT OF TROLLEY. DO NOT TOUCH CABLE WITH BARE HANDS.

IF BRAKING WITH **LEATHER GLOVES**, ONLY GRAB CABLE BEHIND TROLLEY, NEVER IN FRONT OF TROLLEY.



RETURNING THE TROLLEY BACK TO THE BEGINNING OF YOUR ZIP LINE CAN BE ACHIEVED BY USING A ROPE OR SIMILAR TOW LINE. THE TOW LINE MUST BE ATTACHED TO THE TROLLEY **AFTER COMPLETION OF THE RIDE**. DO NOT RIDE WITH THE TOW LINE ATTACHED TO THE TROLLEY, HARNESS OR RIDER.

!! WARNING !!

DO NOT COIL OR LOOP TOW ROPE DURING RIDE. IT MAY CAUSE ENTANGLEMENT AND STRANGULATION.

!! WARNING !!

DO NOT ALLOW TOW ROPE TO DRAG BEHIND PARTICIPANT DURING ZIP LINE RIDE. IT MAY CAUSE ENTANGLEMENT AND INJURY.

!! WARNING !!

PARTICIPANT MUST NOT DISMOUNT FROM ZIP LINE UNTIL THEY HAVE COME TO A COMPLETE STOP.

PARTICIPANT MUST DISMOUNT FROM ZIP LINE BY TRANSFERRING THEIR WEIGHT OFF CABLE AND ONTO A RAMP, PLATFORM, GROUND, ETC.

!! WARNING !!

NEVER PLACE MORE THAN 350 POUNDS ON ZIP LINE.

!! WARNING !!

BE AWARE THAT ZIP LINE CABLE MAY SPRING UPWARDS WHEN RIDER DISMOUNTS. BE SURE ANY EQUIPMENT STILL ATTACHED IS REMOVED OR RAISED UP SLOWLY TO AVOID INJURING PARTICIPANT OR OPERATOR.



ZIPLINEGEAR



CAUTION:
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