



TREE FASTENERS W/SUPPORT ASS'Y TYPICAL HIGH LOAD CONFIGURATION

VIEW ABOVE SHOWS TRIPLE UPPER "XL" TREE FASTENERS SPACED 120 DEGREES APART AROUND HOST TREE; TRIPLE LOWER "XL" FASTENERS ARE STAGGERED AND SPACED 30" MIN. VERT. BELOW UPPER RING. ROLLED RING SHOWN IS 6" CHANNEL, 10.5 POUNDS PER FOOT, ASTM A36 OR BETTER. HEAVIER FLANGE AND WEB COMBINATIONS MAY BE USED WITH 48" DIAMETER RINGS. DO NOT USE LIGHTER SECTIONS.

LOWER CINCH BRACKETS ARE NOT SHOWN IN THIS VIEW (SEE DETAILS ELSEWHERE). PAIRS OF STRUT ROD ENDS ATTACH TO CINCH BRACKETS WHICH MAY BE ADJUSTED OUTWARD TO COMPENSATE FOR DIAMETRICAL GROWTH AND FOR NATURAL TREE BOLSTERING GROWTH AT LOAD POINTS.

THE ABOVE CONFIGURATION IS CAPABLE OF SUPPORTING COLLECTED LOADS UP TO 50 KIPS VERTICALLY WITH COMP. STRENGTH SPECIFIED. HORIZONTAL LOADS MUST BE RESTRICTED TO < 10 KIPS. ALL COMPONENTS ARE TYPICALLY PROVIDE PARTIALLY RESTRAINED LATERAL SLIDING OF BEAMS AND GIRDERS TO AVOID OVERLOAD.



TREE FASTENERS W/SUPPORT ASS'Y TYPICAL MEDIUM LOAD INSTALLATION

VIEW ABOVE SHOWS SINGLE TREE MOUNTING SYSTEM WITH FOUR UPPER "XL" FASTENERS SPACED 90 DEGREES APART INTERFACED DIRECTLY TO STEEL DECK FRAME.

LOWER CINCH BRACKETS (SHOWN IN PHOTO BELOW, SPACED 180 DEGREES) EACH SUPPORT PAIRS OF STRUTS + ROD ENDS. ADJUSTMENT IS PROVIDED TO COMPENSATE FOR DIAMETRICAL GROWTH PLUS NATURAL BOLSTERING GROWTH AT LOAD POINTS.

FRAME SHOWN IS 6" CHANNEL, 10.5 POUNDS PER FOOT, ASTM A36 OR BETTER STEEL; HEAVIER FLANGE AND WEB COMBINATIONS MAY BE USED; STANDARD "I" AND "H" BEAM MAY ALSO BE USED.

THE ABOVE CONFIGURATION IS CAPABLE OF SUPPORTING COLLECTED LOADS UP TO 30 KIPS VERTICALLY WITH COMP. STRENGTH SPECIFIED. HORIZONTAL LOADS MUST BE RESTRICTED TO < 10 KIPS. ALL COMPONENTS ARE TYPICALLY PARTIALLY RESTRAINED TO ALLOW LATERAL SLIDING OF BEAMS AND GIRDERS TO AVOID OVERLOAD.



TREE FASTENERS + SUPPORT ASS'Y FOR TYPICAL SMALL TREE INSTALLATION

VIEW ABOVE SHOWS SINGLE TREE MOUNTING SYSTEM WITH ONE UPPER "XL THRU" FASTENER INTERFACED DIRECTLY TO STEEL SUPPORT FRAME.

LOWER FASTENERS ARE ROTATED 90 DEGREES AND PLACED AT LEAST 30" BELOW UPPER FASTENER. CINCH BRACKETS ARE USED TO SUPPORT PAIRS OF STRUT ROD ENDS AND MAY BE ADJUSTED OUTWARD TO COMPENSATE FOR DIAMETRICAL GROWTH AND FOR NATURAL TREE BOLSTERING GROWTH AT LOAD POINTS.

FRAME SHOWN IS 6" CHANNEL, 10.5 POUNDS PER FOOT, ASTM A36 OR BETTER STEEL; HEAVIER FLANGE AND WEB COMBINATIONS MAY BE USED; STANDARD "I" AND "H" BEAM MAY ALSO BE USED.

THE ABOVE CONFIGURATION IS CAPABLE OF SUPPORTING COLLECTED LOADS UP TO 12 KIPS VERTICALLY WITH COMP. STRENGTH SPECIFIED. HORIZONTAL LOADS MUST BE RESTRICTED TO < 2 KIPS. ALL COMPONENTS ARE TYPICALLY PARTIALLY RESTRAINED TO ALLOW LATERAL SLIDING OF BEAMS AND GIRDERS TO AVOID OVERLOAD.

GENERAL SPECIFICATIONS FOR LIVE TREES:

VERTICAL LOAD LIMIT ASSUMES PARALLEL-TO-GRAIN COMPRESSIVE STRENGTH OF 3,500 PSI MIN. AT THE INSERTION POINT OF EACH FASTENERS IN EACH HOST TREE.

HORIZONTAL LOAD LIMIT ASSUMES PERPENDICULAR-TO-GRAIN COMPRESSIVE STRENGTH OF 350 PSI AT EACH OF THE FASTENERS INSTALLED IN THE HOST TREE.

TF 1

TREE FASTENER
ASSEMBLY
DETAILS

GREENWOOD ENGINEERING
(541) 592 4100, gnwendg@gmail.com
PO 1571, CAVE JUNCTION, OREGON 97523

DESIGNED BY C.S. GREENWOOD

TREE HOUSE PROJECT
TREEHOUSE VINEYARDS 301 BAY STREET
MONROE, NORTH CAROLINA 28112