A. Purchase Guidelines For Shackles

ONLY 2 BRANDS OF SHACKLES ARE UNIVERSALLY APPROVED FOR FUTURE PURCHASE BY NOOTER CONSTRUCTION: CROSBY ("RED PIN") AND VAN BEEST ("GREEN PIN") SHACKLES

(NOTE: SHACKLES MANUFACTURED BY CAMPBELL, BREWER-TITCHENER WHICH ARE IN CURRENT INVENTORY MAY STILL BE USED, BUT THEY ARE NOT APPROVED FOR FUTURE PURCHASE)

1. CROSBY & VAN BEEST shackles are the standard (preferred) shackles, and are approved for NEW PURCHASE in all sizes for Standard Steel (Screw Pin or Bolt Type), Alloy Steel, and Wide Body shackles. CROSBY & VAN BEEST shackles are rated in METRIC Tons, at a 6:1 design factor.

1.1 If available, self-colored shackles are preferred over Galvanized shackles. The Zinc coating associated with Galvanized shackles will make future NDE inspection more difficult and expensive. It is acknowledged galvanized shackles will be much more universally available in all sizes, and as such the purchase of Galvanized shackles is APPROVED, but just not preferred.

1.2 When "Wide Body" / Sling Shackles (CROSBY / VAN-BEEST Nomenclature) are purchased, only "SAFETY BOLT" shackles are APPROVED. When 125, 200, & 300 Ton "Wide Body" shackles are purchased, the Crosby "EASY-LOC" Bolt System is NOT APPROVED. When "Wide Body" shackles in the three specifically noted capacity ratings are to be purchased, they may need to be purchased specifically from VAN-BEEST. If CROSBY Wide Body shackles in these specific capacity ratings are still available with "SAFETY BOLTS" rather than the new "EASY-LOC" feature, they are APPROVED for purchase.

2. CAMPBELL, BREWER-TITCHENER screw pin and bolt type Standard Steel & Alloy Steel shackles in current inventory are ACCEPTABLE FOR USE, but are NOT ACCEPTABLE for NEW PURCHASE.

2.1 Even though shackles manufactured by CAMPBELL, BREWER-TITCHENER are dimensionally identical to CROSBY & VAN BEEST shackles, they are rated in Imperial Short Tons at a 6:1 design factor, and therefore only have 90 % of the corresponding available capacity of respective CROSBY & VAN BEEST shackles. In order to avoid increasing our inventory of shackles which do NOT have the same capacity as the corresponding shackles from our APPROVED suppliers, shackles manufactured by CAMPBELL, BREWER-TITCHENER are NOT approved for PURCHASE.

2.2 Since shackles manufactured by CAMPBELL, BREWER-TITCHENER will have the same dimensions as shackles manufactured by CROSBY or VAN BEEST, if the higher capacity associated with METRIC TON ratings is required in an Engineered lift situation, it will be necessary for the RIGGING ENGINEER to specify the use of either CROSBY or VAN-BEEST shackles.

3. Shackles manufactured by Columbus McKinnon Corporation ("CM") are NOT APPROVED for USE or PURCHASE. CM Shackles are NOT dimensionally compatible to shackles manufactured by CROSBY, VAN-BEEST, or CAMPBELL, BREWER-TITCHENER

4. "Alloy" steel shackles will also be allowed for PURCHASE and USE, but shackle dimensions must be considered, since they differ from those of Standard Steel shackles. Alloy steel shackles are of limited application and we have very few currently in our field service inventory. Field PURCHASE of Alloy Steel shackles must be APPROVED by both the Purchasing and Rigging Departments.

B. Purchase Guidelines for Slings

1. Single Part Wire Rope Slings

1.1 All wire rope slings shall be manufactured using 6 X 19 or 6 X 37 Classification Extra Improved Plow Steel (E.I.P.S) wire rope having an Independent Wire Rope Core (IWRC). Note; 6 X 37 Classification wire rope may be used for all single leg sling body diameters specified, but 6 X 19 classification should NOT be used for sling body diameters greater than 1 1/8".

1.2 Slings are to be fabricated with a Mechanically Spliced Flemish Eye of standard dimensions (the "Natural" Eye diameter and Eye length is to be 8 X & 16 X the body diameter respectively)

1.3 Sling capacities are to be as outlined in the WIRE ROPE SLING USER's MANUAL, LATEST EDITION, as published by the Wire Rope Technical Board.

1.4 All materials shall be of USA origin.

1.5 Unless specified otherwise on the purchase order, the required sling length is to be measured with the eyes in the as fabricated "natural" dimensions (as defined above in line 1.2) WITHOUT accounting for any additional length resulting from the sling potentially being utilized with connecting hardware having the minimum applicable interface pin diameter.

1.6 Wire Rope Slings shall be identified with tags, providing the information as indicated by ANSI Standards. In addition to the A.N.S.I. tagging standard, if slings are to receive proof testing and certification (as discussed later in line 1.8) a unique serial number is to be provided to relate the specific sling to the proof test certification. If multiple slings are proof tested at the same time, they shall be provided with unique proof test certificates corresponding to their specific serial number. A single certificate to cover multiple slings will NOT be allowed.

1.7 Identification tags shall be metal and affixed to BOTH ends of the sling. Additionally, both swaged fittings shall be stamped with an "X" in ¼" high lettering to further identify the sling having been fabricated from EIPS wire rope. This extra marking on the mechanical splice fitting will allow field service personnel to identify the grade of the wire rope in the event the sling needs to be re-tagged because the original tag has been damaged or removed in use.

1.8 Manufacturer's proof testing and certification is required for any single part mechanically spliced Flemish eye sling 2" or greater in diameter. Proof test loads shall be 2 X the single leg vertical hitch rated load. If proof testing and certification is required for wire rope slings having a body diameter less than 2" it will be stated as such on the purchase order. All wire rope slings to receive proof testing are to have unique serial numbers and corresponding test certificates.

2. Nylon & Polyester Web Slings

2.1 Two classes of webbing materials as indicated by the Web Sling & Tie Down Association (W.S.T.D.A.) Specification WS-1 are available for use in the fabrication of web slings: Class 5 & Class 7. Due to their relatively low cost, and high potential for damage, Nylon & Polyester web slings are essentially "consumable" tools on our job sites.

2.2 Due to variation in manufacturing techniques between potential manufacturers & suppliers it is NOT possible to develop a purchasing standard indicating a specified capacity for a corresponding sling width even with a material specification standard. Instead this standard will provide some general purchase guide lines.

2.2.1 Nylon web slings are available in One, Two, Three, and Four ply construction. For purchase of web slings for general inventory we will specify TWO PLY construction.

2.2.2 Slings will be constructed of webbing materials manufactured & tested in accordance with the Web Sling and Tie Down Association specification WSTDA-WB-1. Slings shall be constructed from Class 7 webbing materials having minimum Certified Tensile Strength of 9,800 lbs. per inch of webbing width. This grade of webbing often is referred to as "Heavy Duty" webbing.

2.2.3 The thread used in the fabrication of web slings shall be manufactured & tested in accordance with WSTDA-TH-1. The thread shall be the same yarn type as the sling webbing.

2.3 Nylon web slings may be ordered in a "Flat Eye", Type III configuration with loop eye opening in the same plane as the sling body or in the "Twisted Eye", Type IV configuration with the loop eyes turned at a right angle to the plane of the sling body with no change in the available sling capacity. The specific configuration of the sling will be stated in the purchase order.

2.4 Unless stated otherwise in the purchase order the eyes of all Type III & Type IV web slings are to be tapered (folded) to better accommodate rigging hardware and avoid damage to the edges of the sling due to the narrower point of contact with the folded eye.

2.5 The standard eye length of all Type III & Type IV web slings is to be as indicated in the WSTDA-WS-1 sling specification.

2.6 Synthetic Web Slings shall be identified with tags, providing the information as indicated by ANSI Standards. In addition to the A.N.S.I. tagging standard, a unique serial number is to be indicated for each sling. Tags are to be sewn in, and intended to be legible for the life of the sling.

2.7 If synthetic web slings are to be proof tested it shall be stated in the purchase order. If proof load testing is required the load shall be 2 X the single leg vertical hitch load. If multiple slings are proof tested at the same time, they shall be provided with unique proof test certificates corresponding to their specific serial number. A single certificate to cover multiple slings will NOT be allowed.

2.8 As stated in line 2.1 Synthetic (Nylon & Polyester) web slings are essentially consumable tools. They will be used in day to day work activities by trained and qualified craftsmen, and it will be their responsibility to insure the web slings are being used properly and within the capacity limitations as indicated on the identification tag discussed in line 2.1.

2.9 Since the specific "as inventoried" sling capacity as a function of width cannot be guaranteed ahead of time (see line 2.2), and the required proof load test certification documentation is typically not available, synthetic web slings in current inventory stock ARE NOT TO BE USED FOR ENGINEERED LIFTS. If synthetic web slings are proposed for an engineered lift it will be the responsibility of the rigging engineer to work with purchasing to order new slings with specific lift capacities, and proof load testing certification documentation as indicated in line 2.7

3 Guidelines for Wire Rope Clips

ONLY 2 BRANDS OF WIRE ROPE CLIPS ARE APPROVED FOR PURCHASE AND USE BY NOOTER CONSTRUCTION, CROSBY AND CM RIGGING PRODUCTS.

3.1 CROSBY clips incorporate the Red-U-Bolt®.

3.2 CM Rigging clips incorporate an orange U-bolt.