

**HARRY DEWOLF CLASS TOWING GEAR**

The HDW Class Towing arrangement is as shown in *Figure 1*.

| <b>Description</b>                    | <b>Specification</b>         | <b>Approximate Dimensions</b> | <b>Reference</b> |
|---------------------------------------|------------------------------|-------------------------------|------------------|
| <b>Item Name: SHACKLE, TOWING</b>     | SWL: 691 kN<br>MBL: 1680 kN  | 200mm x 300mm x 400mm         | <i>Figure 2</i>  |
| <b>Item Name: SENHOUSE SLIP</b>       | SWL: 691 kN<br>MBL: 1680 kN  | 800mm x 200mm x 300mm         | <i>Figure 3</i>  |
| <b>Item Name: SHACKLE, BALDT ANCH</b> | SWL: 1422 kN<br>MBL: 2035 kN | 100mm x 300mm x 400mm         | <i>Figure 7</i>  |
| <b>Item Name: LINK, NATO</b>          | SWL: 1246 kN<br>MBL: 3114 kN | 100mm x 300mm x 465mm         | <i>Figure 9</i>  |
| <b>Item Name: BLAKE SLIP, CENTRE</b>  | SWL: 691 kN<br>MBL: 1680 kN  | 2900mm x 200mm x 150mm        | <i>Figure 10</i> |
| <b>Item Name: SHACKLE KENTER</b>      | SWL: 1422 kN<br>MBL: 2035 kN | 150mm x 110mm x 70mm          | <i>Figure 11</i> |
| <b>Item Name: TOWING PENDANT</b>      | MBL: 814 kN                  | 12500mm x 36mm                | <i>Figure 12</i> |

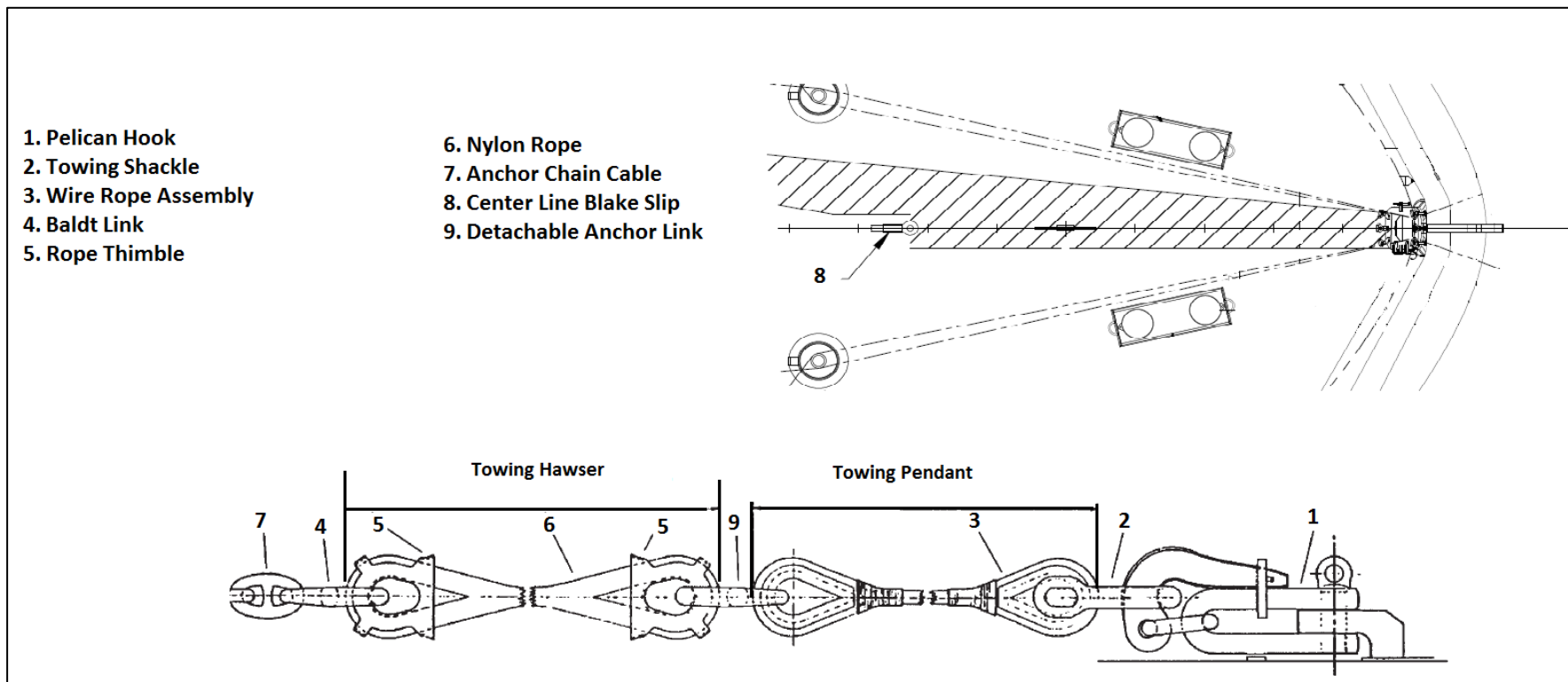
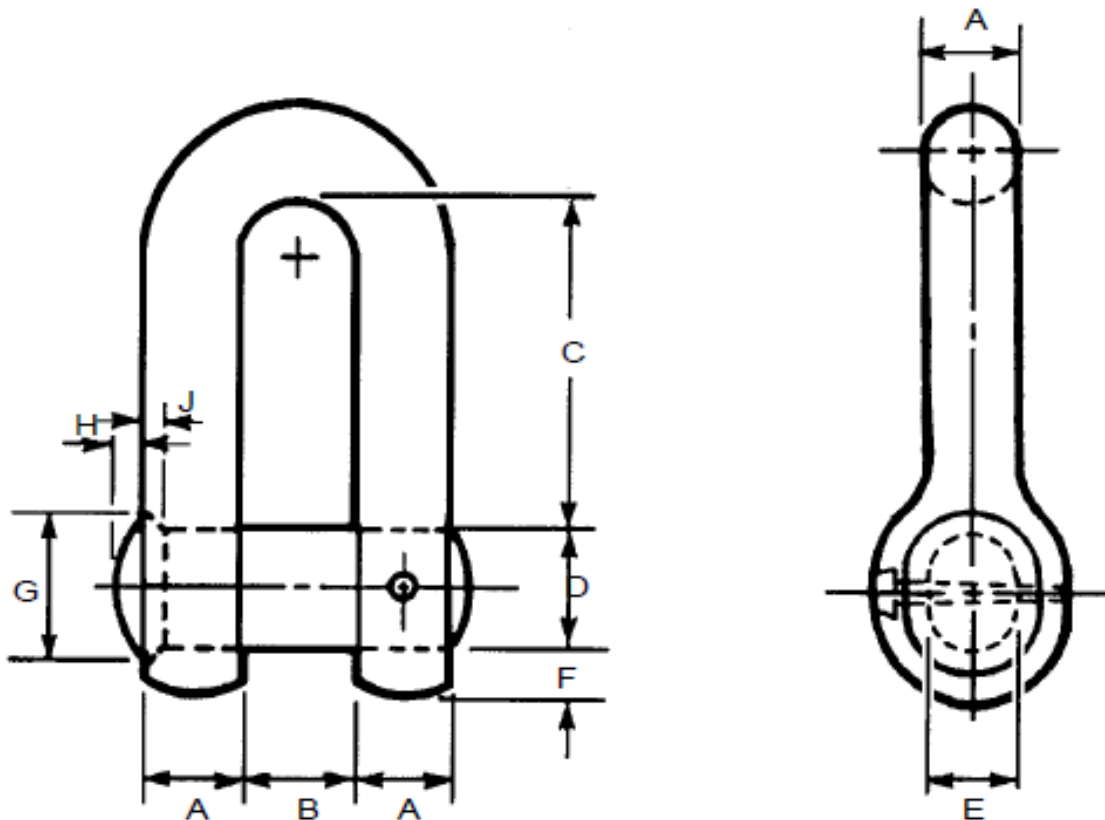
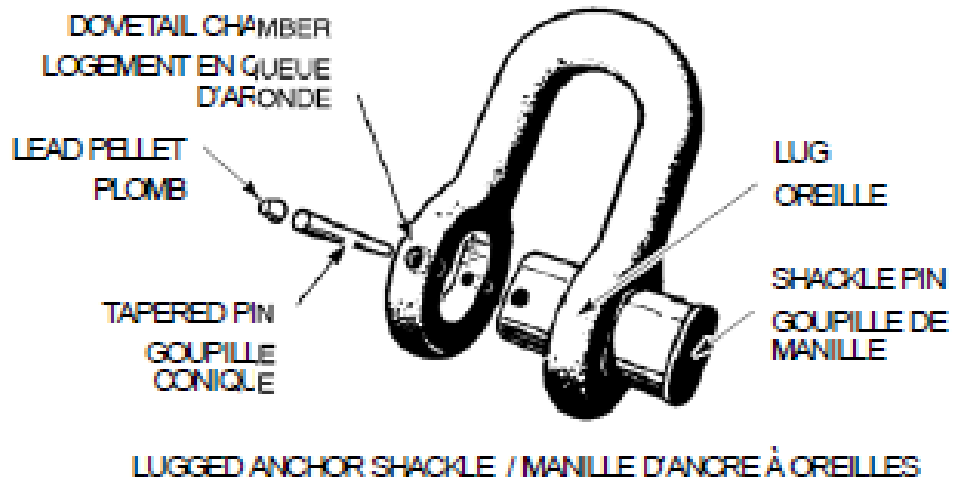


Figure 1: HDW Class Aft Towing Arrangement (Ref. B)



See **Figure 4**, **Figure 5**, and **Figure 6** for Dimensions of Pin, Lead Pellet and Dovetail

| A      | B      | C       | D  | E      | F      | G  | H    | J    | Dia. Pin at Point | Appropriate Size of Slip |
|--------|--------|---------|----|--------|--------|----|------|------|-------------------|--------------------------|
| 2 3/4" | 3 3/4" | 11 1/2" | 4" | 2 3/8" | 1 1/2" | 5" | 1/2" | 1/2" | 1/2"              | 2-1/8" - 2-1/4"          |

*Figure 2: Towing Shackle (Ref. A)*

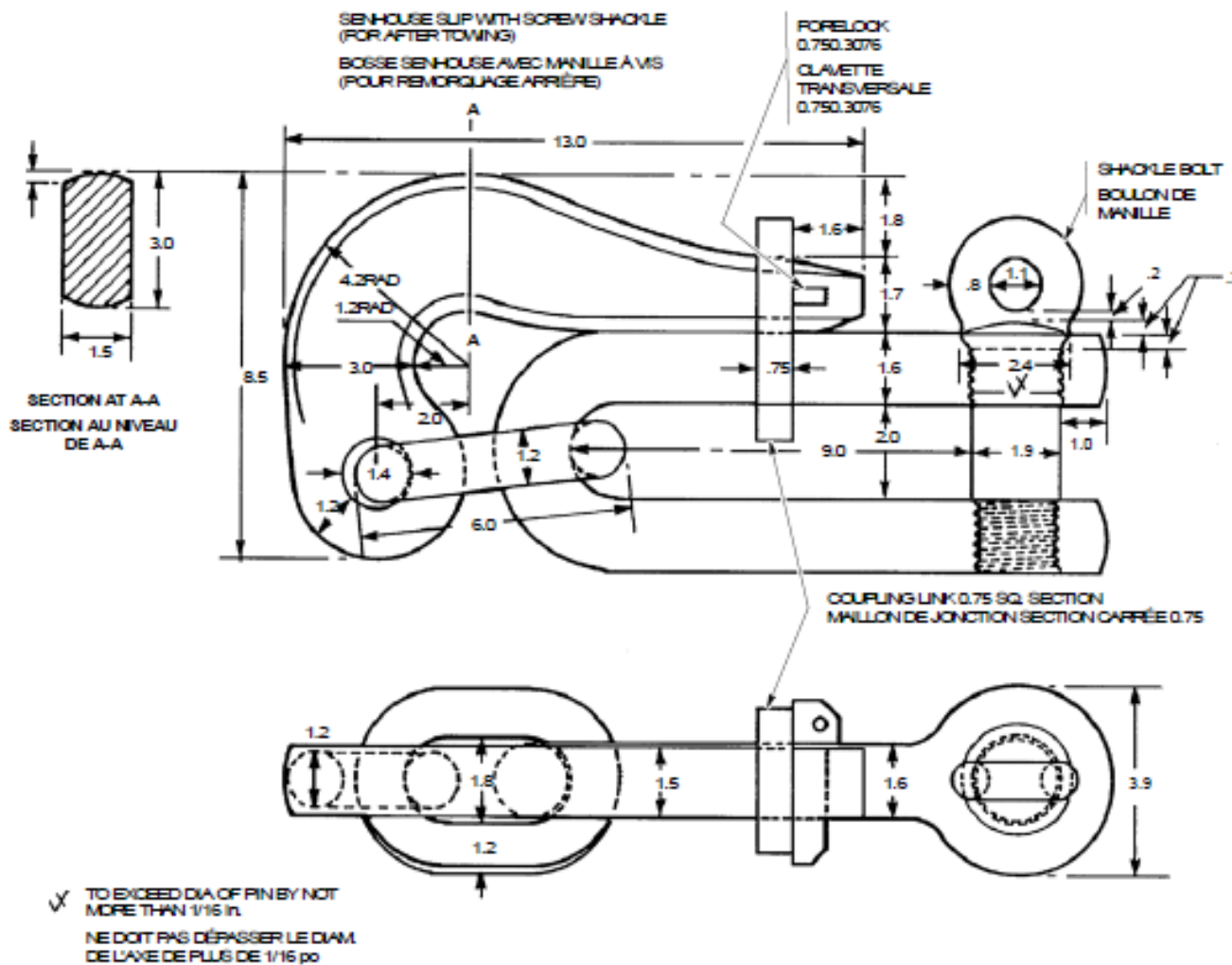


Figure 3: Senhouse Slip With Screw Shackle for After Towing (Ref. A) (Dimensions shown are Nominal Multipliers based on the chain cable for which item is intended to be used for (i.e. 46 mm))

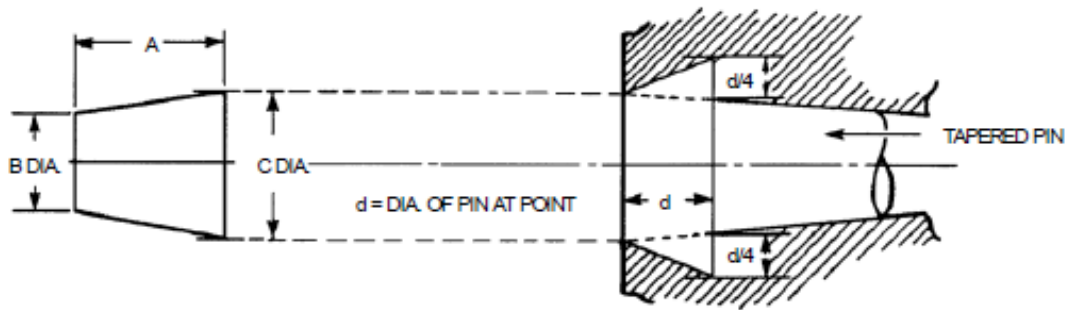


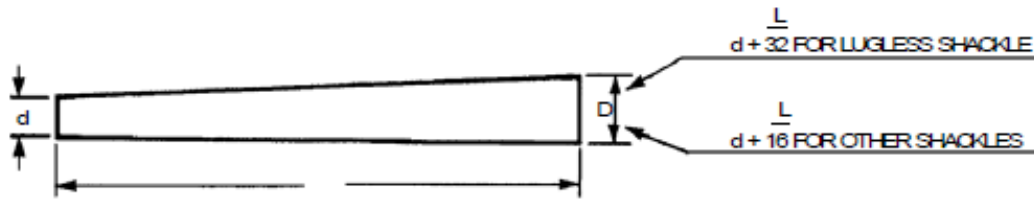
DIAGRAM OF TYPICAL LEAD PELLETT – SEE TABLES BELOW

ENLARGED DETAIL OF DOVETAIL CHAMBER IN ALL TYPES OF SHACKLES

LEAD PELLETT SHOULD BE ENTERED LARGE END FIRST AND WELL CAULKED IN

| LEAD PELLETT FOR LUGLESS, ANCHOR AND JOINING SHACKLES |           |         |         |        |      | PELLETT FOR CLENCH SHACKLES, BUOY SHACKLES AND ALL LUGGED TYPE |    |         |        |        |      |
|---|-----------|---------|---------|--------|------|--|----|---------|--------|--------|------|
| NOM. SIZE OF CABLE                                    |           |         | INCHES  |        |      | NOM. SIZE OF CABLE   |    |         | INCHES |        |      |
|   |           |         | A       | B      | C    |  |    |         | A      | B      | C    |
| 1   | AND UNDER | 1-1/4   | 15/16   | 3/8    | 0.47 | 3/8  | TO | 5/8     | 3/8    | 5/32   | 0.15 |
| 1-1/4   | AND UNDER | 1-1/2   | 1       | 1/2    | 0.58 | 11/16  | TO | 1       | 9/16   | 5/16   | 0.35 |
| 1-1/2   | AND UNDER | 1-3/4   | 1-1/16  | 5/8    | 0.70 | 1-1/16   | TO | 1-5/16  | 21/32  | 3/8    | 0.42 |
| 1-3/4   | AND UNDER | 2       | 1-5/16  | 11/16  | 0.82 | 1-3/8  | TO | 1-3/4   | 7/8    | 17/32  | 0.59 |
| 2   | AND UNDER | 2-1/4   | 1-13/32 | 13/16  | 0.93 | 1-7/8  | TO | 2-3/16  | 1-1/32 | 11/16  | 0.79 |
| 2-1/4   | AND UNDER | 2-1/2   | 1-1/2   | 15/16  | 1.05 | 2-1/4  | TO | 2-7/16  | 1-1/8  | 3/4    | 0.86 |
| 2-1/2   | AND UNDER | 2-3/4   | 1-23/32 | 1      | 1.17 | 2-1/2  | TO | 2-15/16 | 1-3/8  | 29/32  | 1.02 |
| 2-3/4   | AND UNDER | 2-15/16 | 1-25/32 | 1-1/8  | 1.29 | 3  | TO | 3-1/2   | 1-3/8  | 31/32  | 1.10 |
| 2-15/16   | AND UNDER | 3-1/8   | 1-7/8   | 1-7/32 | 1.37 | 3-3/4  | TO | 4       | 1-1/2  | 1-3/16 | 1.35 |
| 3-1/8   | AND UNDER | 3-3/8   | 1-29/32 | 1-5/16 | 1.46 |  |    |         |        |        |      |
| 3-3/8   | AND UNDER | 3-5/8   | 2-1/8   | 1-3/8  | 1.58 |  |    |         |        |        |      |

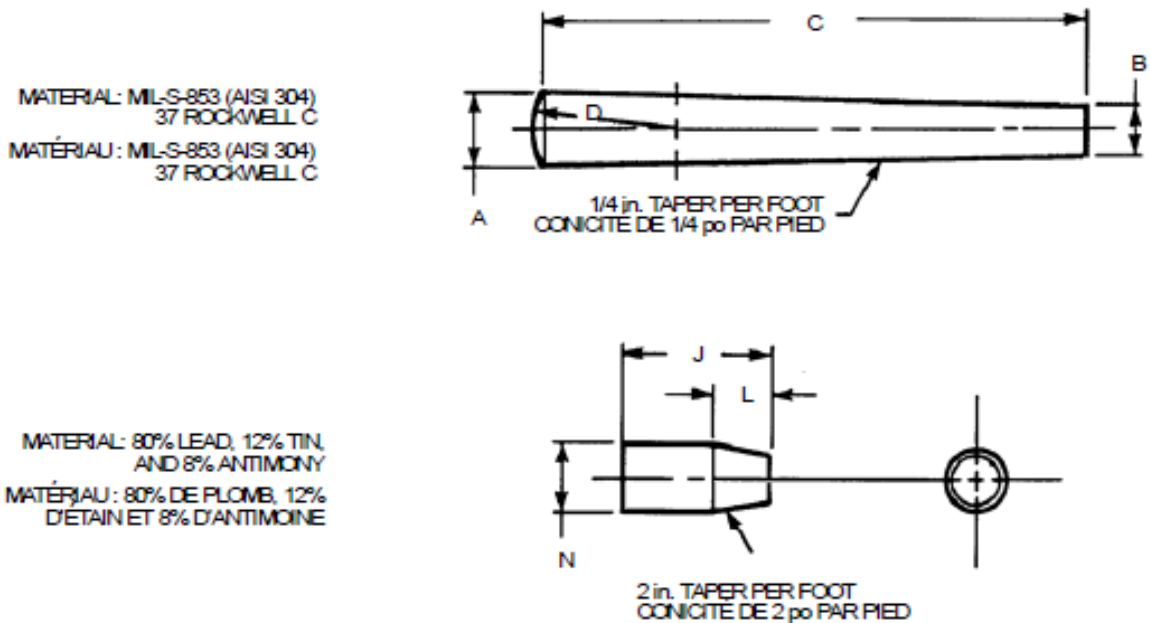
Figure 4: Dimensions of Lead Pellets and Proportions of Dovetail Chambers (Ref. A)



d = DIA. AT POINT OF PIN  
 L = LENGTH OF PIN  
 D = NOMINAL SIZE OF CABLE FOR WHICH SHACKLE IS INTENDED

| PROPORTIONS OF RETAINING TAPERED PINS (INCHES)  |                |            |          |                   |
|---|----------------|------------|----------|-------------------|
| FOR USE WITH  | d              | L          |          | TAPER             |
| LUGLESS JOINING SHACKLE   | 0.35D          | 3.40D      |          | 1 IN 32           |
| LUGLESS ANCHOR SHACKLE  | 0.35D          | 5.0 D      |          | 1 IN 32           |
| BLAKE STOPPERS, SCREW STOPPERS, SHACKLES SECURING TO BUOY   | AS SHOWN BELOW | 2.51D - 2d |          | 1 IN 16           |
| CABLE CLENCH SHACKLE  |                | 2.8D - 2d  |          | 1 IN 16           |
| BUOY SHACKLE  |                | 3.45D - 2d |          | 1 IN 16           |
| LUGGED ANCHOR SHACKLE   |                | 2.9D - 2d  |          | 1 IN 16           |
| DIMENSIONS OF TAPERED PINS FOR BLAKE STOPPERS, SCREW STOPPERS, SHACKLES SECURING TO BUOY, CABLE CLENCH, BUOY SHACKLE, LUGGED ANCHOR SHACKLE |                |            |          |                   |
| NOMINAL SIZE OF CABLE - D (INCHES)  |                |            |          | DIA. AT POINT - d |
| INCLUDING   | 3/8            | BUT UNDER  | 11/16    | 1/8               |
|   | 11/16          |            | 1-3/8    | 1/4               |
|   | 1-3/8          |            | 1-7/8    | 3/8               |
|   | 1-7/8          |            | 2-1/2    | 1/2               |
|   | 2-1/2          |            | 3-3/4    | 5/8               |
|   | 3-3/4          |            | 4 (INCL) | 3/4               |
| DIMENSIONS OF TAPERED PINS FOR TOWING SHACKLES (INCHES)   |                |            |          |                   |
| SHACKLES FOR USE WITH   | d              | L          | TAPER    |                   |
| 3-1/2 AND 5 in. HAWSERS   | 1/2            | 4-1/2      | 1 IN 16  |                   |
| 5-1/2 AND 6-1/2 in. HAWSERS   | 1/2            | 5-1/8      | 1 IN 16  |                   |

Figure 5: Dimensions of Tapered Pins (Ref. A)



| LINK SIZE<br>DIMENSION DU MAILLON | A       | B     | C        | D       | J     | L      | N       |
|-----------------------------------|---------|-------|----------|---------|-------|--------|---------|
| 3/4                               | 5/16    | 0.261 | 2-1/2    | 7/16    | 5/8   | 1/4    | 9/32    |
| 7/8                               | 11/32   | 0.281 | 3        | 1/2     | 5/8   | 1/4    | 5/16    |
| 1                                 | 13/32   | 0.336 | 3-3/8    | 5/8     | 13/16 | 5/16   | 3/8     |
| 1-1/8                             | 15/32   | 0.389 | 3-13/16  | 3/4     | 1     | 11/32  | 7/16    |
| 1-1/4                             | 1/2     | 0.413 | 4-3/16   | 15/16   | 1     | 3/8    | 31/64   |
| 1-3/8                             | 9/16    | 0.466 | 4-21/32  | 7/8     | 1     | 5/16   | 17/32   |
| 1-1/2                             | 5/8     | 0.517 | 5-3/16   | 7/8     | 1-3/8 | 1/2    | 9/16    |
| 1-5/8                             | 21/32   | 0.540 | 5-9/16   | 15/16   | 1-3/8 | 1/2    | 5/8     |
| 1-3/4                             | 11/16   | 0.562 | 6        | 1-1/8   | 1-3/8 | 1/2    | 11/16   |
| 1-7/8                             | 3/4     | 0.614 | 6-1/2    | 1-3/16  | 1-3/8 | 9/16   | 3/4     |
| 2                                 | 13/16   | 0.672 | 6-3/4    | 1-1/4   | 1-3/8 | 9/16   | 3/4     |
| 2-1/8                             | 7/8     | 0.724 | 7-1/8    | 1-5/16  | 1-3/8 | 5/8    | 13/16   |
| 2-1/4                             | 15/16   | 0.781 | 7-1/2    | 1-3/8   | 1-3/8 | 5/8    | 29/32   |
| 2-3/8                             | 1       | 0.828 | 8-1/4    | 1-1/2   | 1-5/8 | 3/4    | 7/8     |
| 2-1/2                             | 1       | 0.823 | 8-3/8    | 1-1/2   | 2     | 3/4    | 31/32   |
| 2-5/8                             | 1-1/8   | 0.875 | 9        | 1-5/8   | 2-1/8 | 3/4    | 1-1/16  |
| 2-3/4                             | 1-1/8   | 0.932 | 9-9/32   | 1-11/16 | 2-1/8 | 3/4    | 1-3/32  |
| 2-7/8                             | 1-11/64 | 0.970 | 9-11/16  | 1-13/16 | 2-1/8 | 13/16  | 1-5/32  |
| 3                                 | 1-7/32  | 1.007 | 10-1/8   | 1-7/8   | 2-1/8 | 7/8    | 1-3/16  |
| 3-1/8                             | 1-17/64 | 1.046 | 10-9/16  | 2       | 2-3/8 | 15/16  | 1-9/32  |
| 3-1/4                             | 1-5/16  | 1.083 | 11       | 2       | 2-1/2 | 1      | 1-3/8   |
| 3-3/8                             | 1-7/16  | 1.192 | 11-3/4   | 2-1/2   | 2-3/8 | 1      | 1-11/32 |
| 3-1/2                             | 1-1/2   | 1.250 | 12       | 2-3/16  | 2-7/8 | 1-1/8  | 1-3/8   |
| 3-3/4                             | 1-33/64 | 1.259 | 12-21/32 | 2-1/4   | 2-7/8 | 1-3/16 | 1-7/16  |

Figure 6: Dimensions of Tapered Pins and Lead Pellets for Baldt Chain Connecting Links (Ref. A) (Dimensions shown are in inches)

See **Figure 8** for proportions of Tapered Pin and Lead pellet.

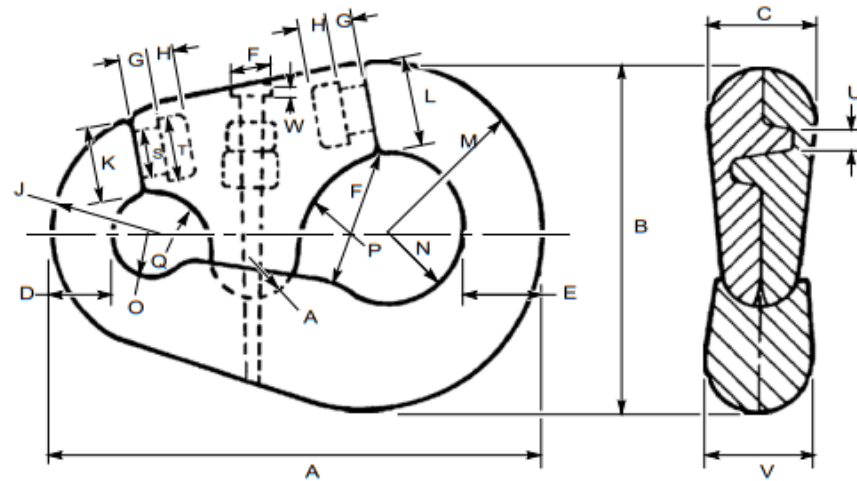


TABLE OF DIMENSIONS IN INCHES / TABLEAU DES DIMENSIONS EN POUCES

| Size Chain<br>Dimension<br>de la chaîne | A       | B        | C       | D       | E       | F       | G      | H      | J       | K       | L       | M       |
|---|---------|----------|---------|---------|---------|---------|--------|--------|---------|---------|---------|---------|
| 1/2-11/16                               | 5-1/2   | 3-13/16  | 1-1/8   | 5/8     | 15/16   | 1       | 5/16   | 5/16   | 1-7/16  | 5/8     | 1       | 1-29/32 |
| 3/4-15/16                               | 7-5/8   | 5-3/16   | 1-1/2   | 15/16   | 1-1/4   | 2-1/4   | 3/8    | 3/8    | 1-19/32 | 15/16   | 1-3/8   | 2-5/8   |
| 1-1-3/16                                | 9-3/8   | 6-9/16   | 1-13/32 | 1-3/16  | 1-1/2   | 2-19/32 | 15/32  | 15/32  | 2-1/8   | 1-1/4   | 1-13/16 | 3-1/8   |
| 1-1/4-1-9/16                            | 11-3/4  | 8-1/8    | 2-5/16  | 1-9/16  | 1-7/8   | 3-1/4   | 5/8    | 5/8    | 2-27/32 | 1-9/16  | 2-1/4   | 4-1/16  |
| 1-5/8-2                                 | 15      | 10-1/4   | 3       | 2       | 2-1/2   | 3-15/16 | 7/8    | 27/32  | 3-3/4   | 2-15/16 | 3       | 4-15/16 |
| 2-1/16-2-3/8                            | 17-7/8  | 12-5/16  | 3-5/8   | 2-3/8   | 3       | 4-3/4   | 1      | 1-1/16 | 4-1/2   | 2-7/16  | 3-1/2   | 5-15/16 |
| 2-7/16-3-1/8                            | 22      | 14-13/16 | 4-5/8   | 3-1/8   | 3-3/4   | 5-7/8   | 1-1/8  | 1-1/8  | 5-3/8   | 3-1/8   | 4-3/8   | 7-5/16  |
| 3-3/16-3-5/8                            | 25      | 16-1/2   | 5-1/4   | 3-5/8   | 4-7/8   | 5-7/8   | 1-1/2  | 1-1/2  | 6-3/4   | 4-3/8   | 5-1/8   | 8-1/4   |
| 3-11/16-3-3/4                           | 27-1/4  | 17-1/8   | 5-3/4   | 3-7/8   | 5-1/8   | 6-1/4   | 1-1/2  | 1-3/4  | 7       | 4-7/8   | 5-9/16  | 8-9/16  |
|   | N       | O        | P       | Q       | R       | S       | T      | U      | V       | W       | X       |         |
| 1/2-11/16                               | 3/4     | 1/2      | 1-1/8   | 7/8     | 1/2     | 9/16    | 13/16  | 1/4    | 1-1/8   | 3/16    | 3/8     |         |
| 3/4-15/16                               | 13/16   | 2-1/32   | 1-5/8   | 1-3/32  | 5/8     | 11/16   | 15/16  | 11/32  | 1-5/8   | 1/4     | 1/2     |         |
| 1-1-3/16                                | 1-3/8   | 3/4      | 2       | 1-1/4   | 3/4     | 13/16   | 1-3/16 | 5/16   | 2       | 1/4     | 3/4     |         |
| 1-1/4-1-9/16                            | 1-11/16 | 1-1/32   | 2-1/8   | 1-11/16 | 15/16   | 13/16   | 1-9/16 | 9/16   | 2-3/8   | 3/8     | 13/16   |         |
| 1-5/8-2                                 | 2-1/16  | 1-1/4    | 2-5/8   | 2       | 1-1/4   | 1-1/2   | 2      | 23/32  | 3-1/8   | 1/2     | 7/8     |         |
| 2-1/16-2-3/8                            | 2-17/32 | 1-15/32  | 3-1/4   | 2-7/16  | 1-1/2   | 1-3/4   | 2-3/8  | 7/8    | 3-7/8   | 9/16    | 1-1/4   |         |
| 2-7/16-3-1/8                            | 3       | 1-29/32  | 2-15/16 | 3-5/8   | 1-7/8   | 2-1/4   | 3      | 1      | 4-3/4   | 5/8     | 1-5/16  |         |
| 3-3/16-3-5/8                            | 3-1/8   | 2-1/8    | 3-3/4   | 2-15/16 | 1-15/16 | 2-3/4   | 3-3/4  | 1-7/16 | 5-3/8   | 3/4     | 1-9/16  |         |
| 3-11/16-3-3/4                           | 3-1/4   | 2-1/4    | 4       | 2-3/4   | 2       | 3       | 4      | 2      | 6-1/8   | 3/4     | 1-13/16 |         |

Figure 7: Baldt Anchor Shackle (Ref. A). Will be used on 46mm Chain Cable.



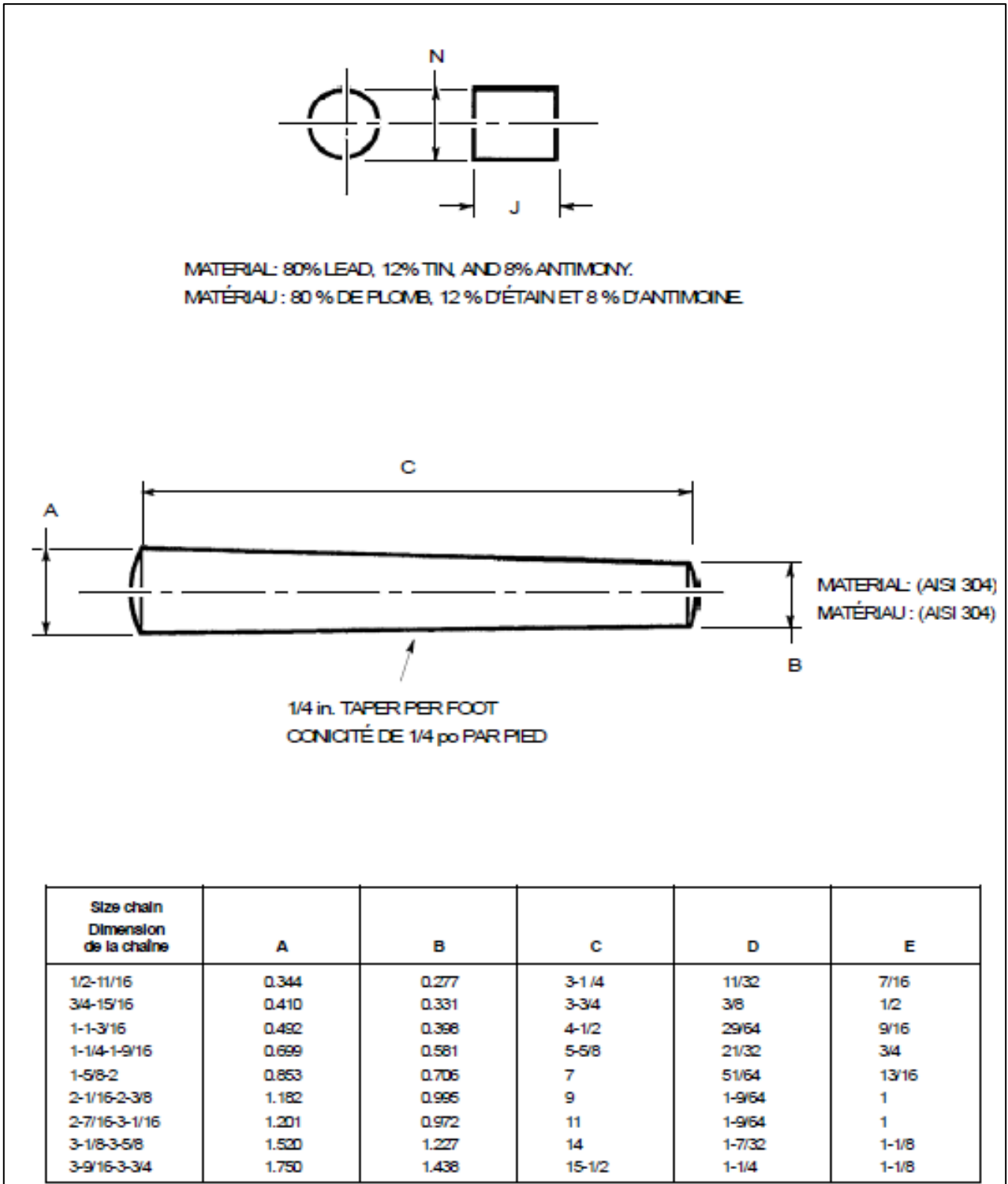
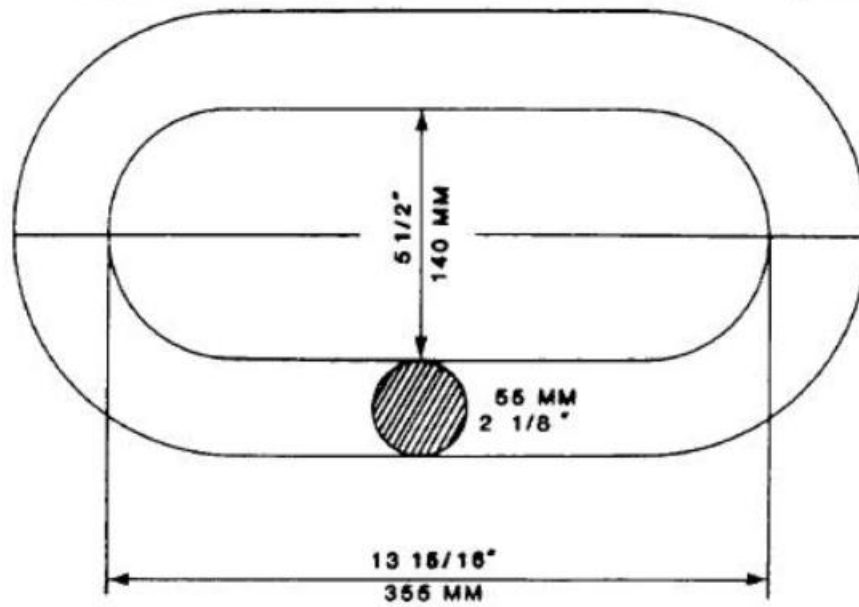


Figure 8: Dimensions of Tapered Pins and Lead Pellets for Baldt Detachable Anchor Connection Link (Ref. A) (Dimensions shown are in inches)



*Figure 9: NATO Link*

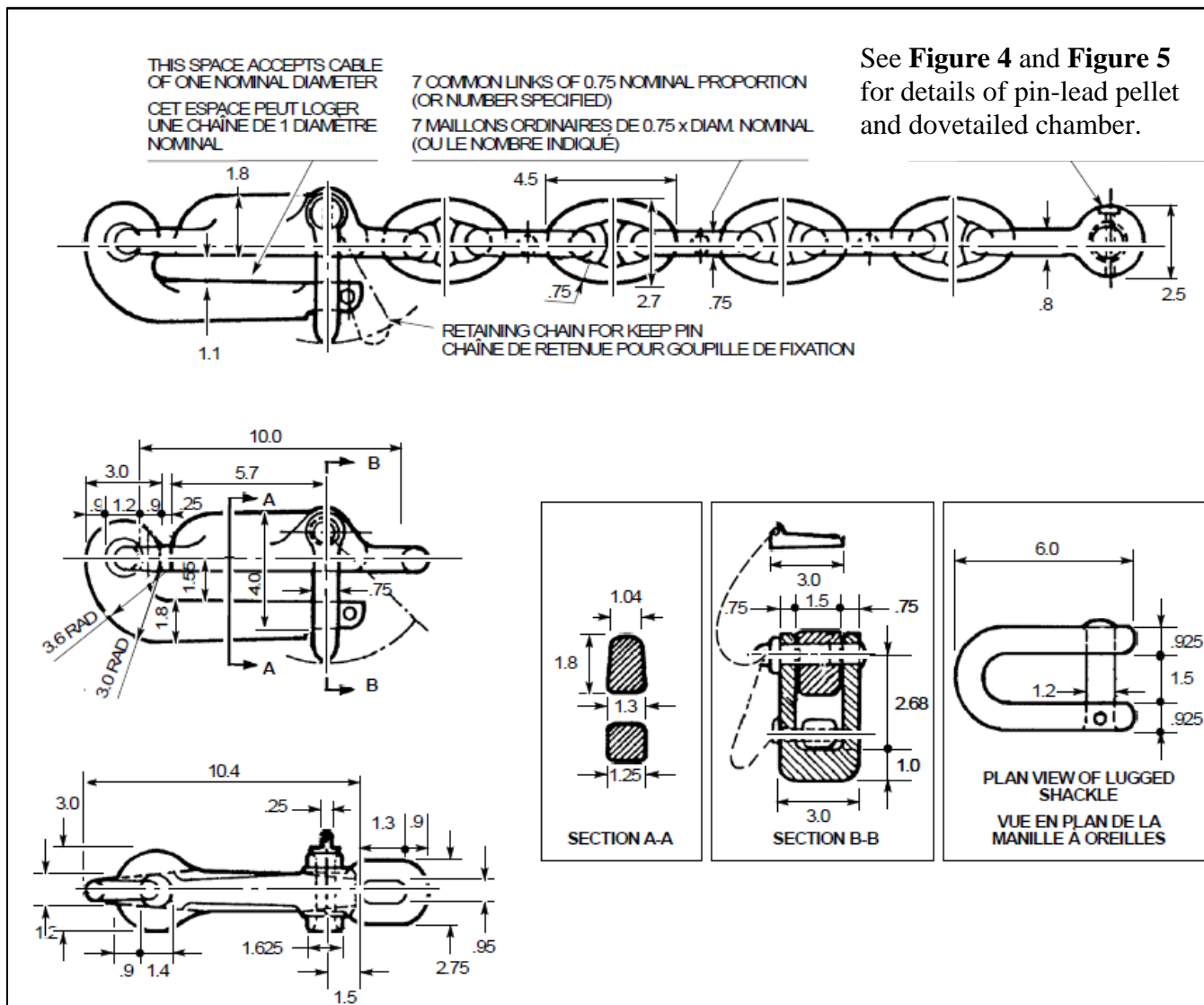
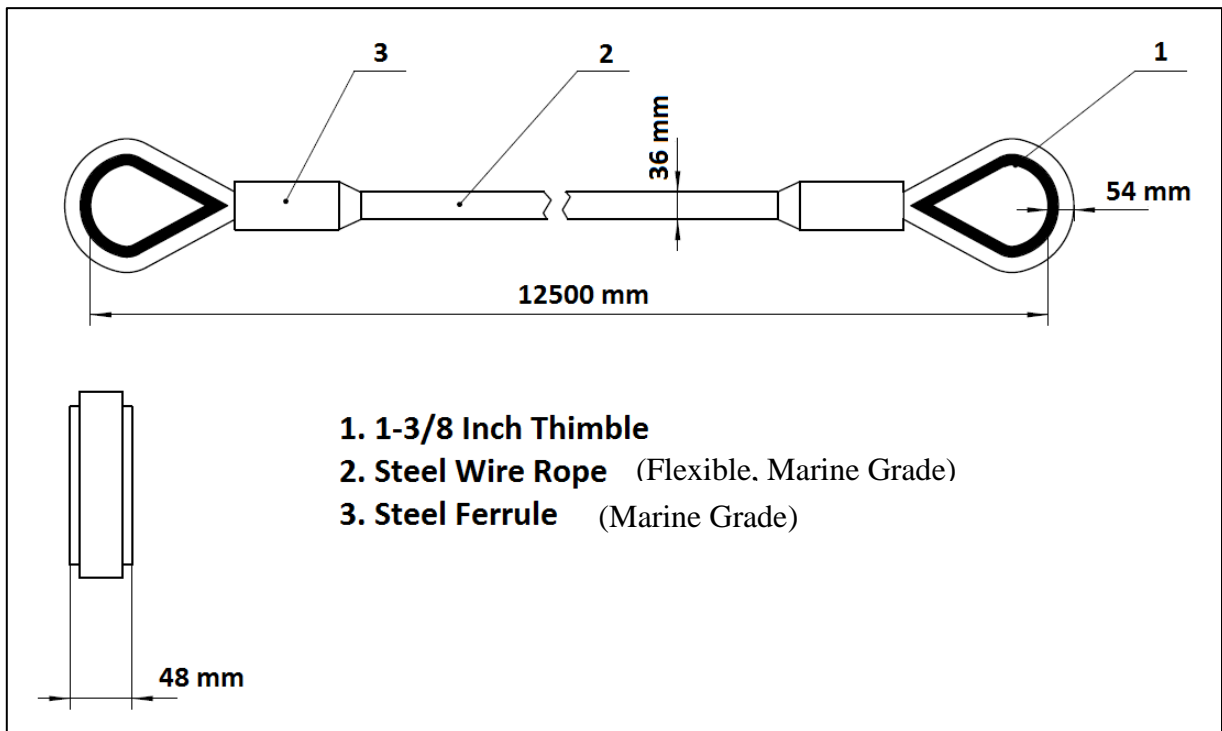


Figure 10: Centreline Blake Slip (Ref. A) (Dimensions shown are Nominal Multipliers based on the chain cable for which item is intended to be used for (i.e. 46 mm))





*Figure 12: Towing Pendant (Ref. B)*

**REFERENCES**

- A. C-28-010-024-MS-001 Anchors Chain Cables and Associated Articles (2022-06-17)
- B. C-28-898-000-MS-001 HDW Class Mooring and Towing Operation and Maintenance Instructions With Parts Lists