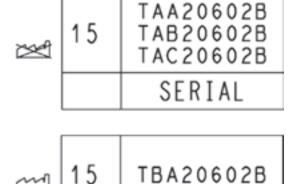




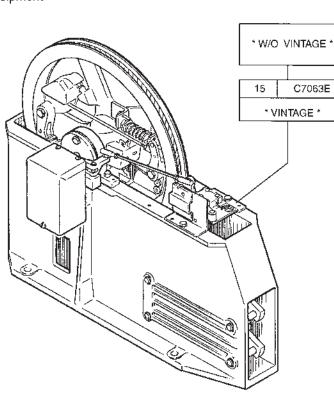


## **Notes About This Catalog Section** Terminology, Sizing Standards, and Use

- The primary measurements shown for parts are based upon their design drawings.
- Most measurements are provided in both Imperial units (for the United States) and metric units (for Canada, Mexico, etc.). If only one form of a measurement is provided, assume Imperial units (generally inches) unless otherwise stated.
- Most Imperial measurements are rounded to the nearest tenth or hundredth of an inch and most metric measurements are rounded to the nearest millimeter.
- The term "vintage" refers to the period of time in which the original equipment was manufactured. If installation records are not available, the vintage of a component may be determined from a vintage tag affixed to the component. Shown on the right are examples of vintage tags used on Otis equipment over the years.



SERIAL



# Wire Rope & Governors

### Wire Rope & Governors

## **Table of Contents**

|     | tes About This Catalog Section   | 1   |
|-----|--|---|
| Wiı | re Ropes and Belts   | 4   |
|     | Wire Rope Ordering Hints   | 4   |
|     | Traction and Extra High Strength (EHS) Wire Rope   | 5   |
|     | Traction–Regular Lay 8 Strand (8x19)   | 5   |
|     | Traction–Regular Lay 6 Strand (6x19)   | 7   |
|     | Traction–Lang Lay 8 Strand (8x19)  | 8   |
|     | Traction–Lang Lay 6 Strand (6x19)  |   |
|     | Extra High Strength (EHS)—Regular Lay  |   |
|     | Extra High Strength (EHS)—Lang Lay   | 12  |
|     | Iron Wire Rope   | 13  |
|     | Miscellaneous Special Ropes and Belts  | 15  |
|     | Bronze Tiller and Miscellaneous Ropes  |   |
|     | Coated Steel Belt (CSB)  | 15  |
|     |  |   |
| Roj | pe Termination Equipment   |   |
| Roj | pe Termination Equipment<br>Wedge Clamp Rope Shackle Assemblies  | 16  |
| Roj |  | <b>16</b><br>16   |
| Roj | Wedge Clamp Rope Shackle Assemblies  | <b>16</b><br>16<br>17                                     |
| Roj | Wedge Clamp Rope Shackle Assemblies<br>Compensation Wedge/Clamp Rope Sockets   | <b>16</b><br>16<br>17<br>18                               |
| Roj | Wedge Clamp Rope Shackle Assemblies<br>Compensation Wedge/Clamp Rope Sockets<br>Plain Wedge Socket without Seats   | <b>16</b><br>16<br>17<br>18<br>19                         |
| Roj | Wedge Clamp Rope Shackle Assemblies<br>Compensation Wedge/Clamp Rope Sockets<br>Plain Wedge Socket without Seats<br>Governor Wedge Rope Shackles   | <b>16</b><br>16<br>17<br>18<br>19<br>20                   |
| Roj | Wedge Clamp Rope Shackle Assemblies<br>Compensation Wedge/Clamp Rope Sockets<br>Plain Wedge Socket without Seats<br>Governor Wedge Rope Shackles<br>Governor Babbited Rope Shackles  | <b>16</b><br>16<br>17<br>18<br>19<br>20<br>21             |
| Roj | Wedge Clamp Rope Shackle Assemblies<br>Compensation Wedge/Clamp Rope Sockets<br>Plain Wedge Socket without Seats<br>Governor Wedge Rope Shackles<br>Governor Babbited Rope Shackles<br>Babbited Rope Shackles  | <b>16</b><br>16<br>17<br>18<br>19<br>20<br>21<br>23       |
| Roj | Wedge Clamp Rope Shackle Assemblies<br>Compensation Wedge/Clamp Rope Sockets<br>Plain Wedge Socket without Seats<br>Governor Wedge Rope Shackles<br>Governor Babbited Rope Shackles<br>Babbited Rope Shackles<br>Shackle Hitch Springs: Traditional                                | <b>16</b><br>16<br>17<br>18<br>19<br>20<br>21<br>23<br>24 |
| Roj | Wedge Clamp Rope Shackle Assemblies<br>Compensation Wedge/Clamp Rope Sockets<br>Plain Wedge Socket without Seats<br>Governor Wedge Rope Shackles<br>Governor Babbited Rope Shackles<br>Babbited Rope Shackles<br>Shackle Hitch Springs: Traditional<br>Shackle Hitch Springs: Gen2 | 16<br>17<br>18<br>19<br>20<br>21<br>23<br>24              |

## **Table of Contents**

| Sheave liners   |
|---|
| Liners for Machines and Deflector Sheaves                             |
| Rope Guides   |
| Tools and Tags for Rope   |
| Wire Rope Cutting and Seizing Material                                |
| Reeving Splices for Re-Roping   |
| Rope Lubricator Kit for Hoist Rope                                    |
| Rope Lubricator Kit for Compensation Rope                             |
| Wire Rope Data Plate40  |
| Governors and Related41   |
| Tension Frames42  |
| Early Bail Type and Flyball Governors48                               |
| R Type Governor   |
| EA and EAO Flyball Governors (400 FPM to ~600 FPM min)52              |
| FA, FAO, FSAO, Flyball Governors (general range: 90 FPM to 300 FPM)56 |
| Overspeed Switches Flyball Governors58                                |
| Early 7063A (produced ~ 1960–65) with Sliding Jaw62                   |
| A, B7063A 12-in. Sheave Governor with Aluminum Sloped Cover64         |
| A, B, C7063E 16-in. Sheave Governor with Aluminum Sloped Cover67      |
| A7063F 24-in. Sheave Governor with Aluminum Sloped Cover              |
| Apollo Governors 12-in. Sheave75                                      |
| Samson Governors 12-in. Sheave78                                      |
| Miscellaneous Governors Related80                                     |
| Illustration Index for Complete Governors                             |
| Appendix: Physical Characteristics of 6-Strand and 8-Strand Wire Rope |

## Wire Ropes and Belts

## Wire Rope Ordering Hints

Prior to contacting UNITEC, please secure the following information concerning your wire rope specification:

- Rope application (hoist, compensation, governor, drum, other)
- Rope diameter
- Rope lay and hand (e.g., right regular lay)
- Material of rope (steel, EH steel, iron, bronze)
- QTY of strands per rope (e.g., 6 or 8)
- Existing rope data tag info and rope info from top of car crosshead data plate
- Age of equipment (if Otis, provide the Otis sales/machine number)

Lang lay rope has the individual wires within the 6 or 8 strands, directed in the same hand orientation as the lay of the strands.

The result being the individual wires would make more of a crossing contact on the sheave groove rather than an "in-line" contact as in regular lay applications.

Lang lay rope is often (not always) found on Otis Jobs incorporating the use of sheave liners.

Present Otis policy is to use lang lay rope as the valid replacement rope on all sheave liner applications.

**DUAL-TENSILE ROPE NOTE:** Sheave hardness varies between elevator companies and sheave design, as well as with age of the equipment. Generally speaking, sheaves designed and cast in the early 1900s thru the 1970s and 1980s did not carry near the hardness as more contemporary machine, Comp, Overhead, Top Car/Counterweight, or Governor sheaves.

Accordingly, UNITEC does offer dual tensile rope. This rope is code compliant, carries the same ultimate breaking strength as the standard traction design rope, but carries softer outer wires on the strands. As a result, this Dual-Tensile rope is much more forgiving when installed on older softer sheaves. It must be noted that there is not a rope on the market that will resolve sheave wear problems which have not been corrected at the root of the problem. If sheave grooves are worn and or uneven, brand new rope will accelerate the wear even more. Be sure to consider UNITEC for a quote on new sheaves if older sheaves are worn beyond serviceable condition.



6 Strand-Right Regular Lay



8 Strand-Right Regular Lay

## Traction and Extra High Strength (EHS) Wire Rope

#### Traction-Regular Lay 8 Strand (8x19)

- Standard 8M
- Dual-Tensile (see **NOTE** on page 5)
- NP = Non-Preformed
- GALV = Galvanized



8 Strand Right Regular Lay

| Part No.        | Class | Dia. (in.) | Construction            | Material | Lay        |
|-----------------|-------|------------|-------------------------|----------|------------|
| AAA712Q26       | 8X19  | 1/4        | 8M Dual Tensile         | Traction | Regular    |
| AAA712Q27       | 8X19  | 5/16       | 8M Dual Tensile         | Traction | Regular    |
| AAA712Q28       | 8X19  | 3/8        | 8M Dual Tensile         | Traction | Regular    |
| AAA712Q29       | 8X19  | 7/16       | 8M Dual Tensile         | Traction | Regular    |
| AAA712Q30       | 8X19  | 1/2        | 8M Dual Tensile         | Traction | Regular    |
| AAA712Q31       | 8X19  | 9/16       | 8M Dual Tensile         | Traction | Regular    |
| AAA712Q32       | 8X19  | 5/8        | 8M Dual Tensile         | Traction | Regular    |
| AAA712Q33       | 8X19  | 11/16      | 8M Dual Tensile         | Traction | Regular    |
| AAA712Q34       | 8X19  | 3/4        | 8M Dual Tensile         | Traction | Regular    |
| AAA712Q35       | 8X19  | 13/16      | 8M Dual Tensile         | Traction | Regular    |
| AAA712Q36       | 8X19  | 7/8        | 8M Dual Tensile         | Traction | Regular    |
| AAA712Q37       | 8X19  | 15/16      | 8M Dual Tensile         | Traction | Regular    |
| AAA712Q38       | 8X19  | 1          | 8M Dual Tensile         | Traction | Regular    |
| A A A 71 00 400 | 01/10 | 0 /0       |                         | <b>T</b> | Regular    |
| AAA712Q428      | 8X19  | 3/8        | 8M Dual Tensile GALV    | Traction | Galvanized |
| A A A 7120420   | 8X19  | 1/2        | 8M Dual Tensile GALV    | Traction | Regular    |
| AAA712Q430      | 0/12  | 1/2        | OIVI DUAI TETISILE GALV | macuom   | Galvanized |

| Part No.          | Class      | Dia. (in.) | Construction            | Material  | Lay        |
|-------------------|------------|------------|-------------------------|---|------------|
| A A A 7100 400    | 0110       | г /o       | 8M Dual Tensile GALV    | Traction  | Regular    |
| AAA712Q432        | 8X19       | 5/8        | SIVI DUAI TENSILE GALV  | Hacuon  | Galvanized |
| A A A 71 00 4 F 0 | 0110       | 11/10      |                         | Treation  | Regular    |
| AAA712Q458        | 8X19       | 11/16      | 8M Dual Tensile GALV    | Traction  | Galvanized |
| AAA712Q111        | 8X19       | 5/16       | 8M Dual Tensile NP      | Traction  | Regular    |
| AAA712Q112        | 8X19       | 3/8        | 8M Dual Tensile NP      | Traction  | Regular    |
| AAA712Q113        | 8X19       | 1/2        | 8M Dual Tensile NP      | Traction  | Regular    |
| AAA712Q114        | 8X19       | 5/8        | 8M Dual Tensile NP      | Traction  | Regular    |
| AAA712Q115        | 8X19       | 11/16      | 8M Dual Tensile NP      | Traction  | Regular    |
| AAA712Q116        | 8X19       | 3/4        | 8M Dual Tensile NP      | Traction  | Regular    |
| A A A 7100F10     | 4.0 0.14.0 | 1/0        | 9M Duel Tensile ND CAIV | Tractico  | Regular    |
| AAA712Q513        | 8X19       | 1/2        | 8M Dual Tensile NP GALV | Traction  | Galvanized |
| AAA712W58         | 8x19       | 3/8        | 8M Dual-Tensile         | Traction, Poly<br>Core (no core<br>lubrication),<br>Apollo Governor<br>Applications | Regular    |
| AAA712W26         | 8x19       | 1/2        | 8M                      | Traction Steel  | Regular    |
| AAA712W12         | 8x19       | 5/8        | 8M                      | Traction Steel  | Regular    |
| AAA712Q112        | 8x19       | 3/8        | 8M                      | Traction Steel  | Regular    |
| AAA712W33         | 8x19       | 11/16      | 8M                      | Traction Steel  | Regular    |
| AAA712W7          | 8x19       | 5/16       | 8M                      | Traction Steel  | Regular    |
| AAA712W38         | 8x19       | 3/4        | 8M                      | Traction Steel  | Regular    |

#### Traction-Regular Lay 6 Strand (6x19)

- Standard
- Dual-Tensile (see **NOTE** on page 5)
- NP = Non-Preformed

| Part No.   | Class | Dia. (in.) | Construction       | Material       | Lay     |
|------------|-------|------------|--------------------|----------------|---------|
| AAA712P26  | 6X19  | 1/4        | 6M Dual Tensile    | Traction       | Regular |
| AAA712P27  | 6X19  | 5/16       | 6M Dual Tensile    | Traction       | Regular |
| AAA712P28  | 6X19  | 3/8        | 6M Dual Tensile    | Traction       | Regular |
| AAA712P29  | 6X19  | 7/16       | 6M Dual Tensile    | Traction       | Regular |
| AAA712P30  | 6X19  | 1/2        | 6M Dual Tensile    | Traction       | Regular |
| AAA712P31  | 6X19  | 9/16       | 6M Dual Tensile    | Traction       | Regular |
| AAA712P32  | 6X19  | 5/8        | 6M Dual Tensile    | Traction       | Regular |
| AAA712P33  | 6X19  | 11/16      | 6M Dual Tensile    | Traction       | Regular |
| AAA712P34  | 6X19  | 3/4        | 6M Dual Tensile    | Traction       | Regular |
| AAA712P35  | 6X19  | 13/16      | 6M Dual Tensile    | Traction       | Regular |
| AAA712P36  | 6X19  | 7/8        | 6M Dual Tensile    | Traction       | Regular |
| AAA712P37  | 6X19  | 15/16      | 6M Dual Tensile    | Traction       | Regular |
| AAA712P38  | 6X19  | 1          | 6M Dual Tensile    | Traction       | Regular |
| AAA712P39  | 6X19  | 1-1/16     | 6M Dual Tensile    | Traction       | Regular |
| AAA712P111 | 6X19  | 5/16       | 6M Dual Tensile NP | Traction       | Regular |
| AAA712P112 | 6X19  | 3/8        | 6M Dual Tensile NP | Traction       | Regular |
| AAA712P113 | 6X19  | 1/2        | 6M Dual Tensile NP | Traction       | Regular |
| AAA712P114 | 6X19  | 5/8        | 6M Dual Tensile NP | Traction       | Regular |
| AAA712P115 | 6X19  | 11/16      | 6M Dual Tensile NP | Traction       | Regular |
| AAA712P116 | 6X19  | 3/4        | 6M Dual Tensile NP | Traction       | Regular |
| AAA712W25  | 6x19  | 1/2        | 6M                 | Traction Steel | Regular |
|            |       |            |                    |                |         |



6 Strand Right Regular lay

#### Traction-Lang Lay 8 Strand (8x19)

- Standard
- Dual-Tensile (see **NOTE** on page 5)
- GALV = Galvanized

| _ | Part No.        | Class | Dia. (in.) | Construction         | Material       | Lay        |
|---|-----------------|-------|------------|----------------------|----------------|------------|
| _ | AAA712Q76       | 8X19  | 5/16       | 8M Dual Tensile      | Traction       | Lang       |
|   | AAA712Q77       | 8X19  | 3/8        | 8M Dual Tensile      | Traction       | Lang       |
|   | AAA712Q82       | 8X19  | 7/16       | 8M Dual Tensile      | Traction       | Lang       |
| _ | AAA712Q78       | 8X19  | 1/2        | 8M Dual Tensile      | Traction       | Lang       |
| _ | A A A 71 00 470 | 0110  | 1/0        | OM Dual Tassila CAUV | Tasatian       | Lang       |
|   | AAA712Q478      | 8X19  | 1/2        | 8M Dual Tensile GALV | Traction       | Galvanized |
|   | AAA712W27       | 8x19  | 1/2        | 8M                   | Traction Steel | Lang       |
| _ | AAA712Q83       | 8X19  | 9/16       | 8M Dual Tensile      | Traction       | Lang       |
| _ | AAA712Q79       | 8X19  | 5/8        | 8M Dual Tensile      | Traction       | Lang       |
|   | AAA712W31       | 8x19  | 5/8        | 8M                   | Traction Steel | Lang       |
| _ | AAA712Q80       | 8X19  | 11/16      | 8M Dual Tensile      | Traction       | Lang       |
| _ | AAA712W34       | 8x19  | 11/16      | 8M                   | Traction Steel | Lang       |
|   | AAA712Q81       | 8X19  | 3/4        | 8M Dual Tensile      | Traction       | Lang       |
| - |                 |       |            |                      |                |            |



Lang Lay Rope (note strand orientation)

#### Traction–Lang Lay 6 Strand (6x19)

- Standard
- Dual-Tensile (see **NOTE** on page 5)

| Part No.  | Class | Dia. (in.) | Construction    | Material | Lay  |
|-----------|-------|------------|-----------------|----------|------|
| AAA712P76 | 6X19  | 5/16       | 6M Dual Tensile | Traction | Lang |
| AAA712P77 | 6X19  | 3/8        | 6M Dual Tensile | Traction | Lang |
| AAA712P78 | 6X19  | 1/2        | 6M Dual Tensile | Traction | Lang |
| AAA712P79 | 6X19  | 5/8        | 6M Dual Tensile | Traction | Lang |
| AAA712P80 | 6X19  | 11/16      | 6M Dual Tensile | Traction | Lang |
| AAA712P81 | 6X19  | 3/4        | 6M Dual Tensile | Traction | Lang |
|           |       |            |                 |          |      |



Lang Lay Rope (note strand orientation)

#### Extra High Strength (EHS)-Regular Lay

- 6 EH
- 8 EH
- GALV = Galvanized

| Part No.  | Class | Dia. (in.) | Construction | Material   | Lay     |
|-----------|-------|------------|--------------|------------|---------|
| AAA712P52 | 6X19  | 5/16       | 6 EH         | Extra High | Regular |
| AAA712P53 | 6X19  | 3/8        | 6 EH         | Extra High | Regular |
| AAA712P54 | 6X19  | 7/16       | 6 EH         | Extra High | Regular |
| AAA712W47 | 6x19  | 1/2        | 6EH          | Extra High | Regular |
| AAA712P56 | 6X19  | 9/16       | 6 EH         | Extra High | Regular |
| AAA712W30 | 6x19  | 5/8        | 6EH          | Extra High | Regular |
| AAA712W32 | 6x19  | 11/16      | 6EH          | Extra High | Regular |
| AAA712P59 | 6X19  | 3/4        | 6 EH         | Extra High | Regular |
| AAA712P60 | 6X19  | 13/16      | 6 EH         | Extra High | Regular |
| AAA712P61 | 6X19  | 7/8        | 6 EH         | Extra High | Regular |
| AAA712P62 | 6X19  | 15/16      | 6 EH         | Extra High | Regular |
| AAA712P63 | 6X19  | 1          | 6 EH         | Extra High | Regular |
| AAA712P64 | 6X19  | 1-1/16     | 6 EH         | Extra High | Regular |
|           |       |            |              |            |         |



6 Strand Right Regular lay

| Part No.   | Class | Dia. (in.) | Construction | Material   | Lay     |
|------------|-------|------------|--------------|------------|---------|
| AAA712Q51  | 8X19  | 1/4        | 8 EH         | Extra High | Regular |
| AAA712Q52  | 8X19  | 5/16       | 8 EH         | Extra High | Regular |
| AAA712Q53  | 8X19  | 3/8        | 8 EH         | Extra High | Regular |
| AAA712Q453 | 8X19  | 3/8        | 8 EH GALV    | Extra High | Regular |
| AAA712Q54  | 8X19  | 7/16       | 8 EH         | Extra High | Regular |
| AAA712Q455 | 8X19  | 1/2        | 8 EH GALV    | Extra High | Regular |
| AAA712W28  | 8x19  | 1/2        | 8EH          | Extra High | Regular |
| AAA712Q56  | 8X19  | 9/16       | 8 EH         | Extra High | Regular |
| AAA712W13  | 8x19  | 5/8        | 8EH          | Extra High | Regular |
| AAA712Q60  | 8X19  | 13/16      | 8 EH         | Extra High | Regular |
| AAA712Q61  | 8X19  | 7/8        | 8 EH         | Extra High | Regular |
| AAA712Q62  | 8X19  | 15/16      | 8 EH         | Extra High | Regular |
| AAA712Q63  | 8X19  | 1          | 8 EH         | Extra High | Regular |
|            |       |            |              |            |         |

#### Extra High Strength (EHS)–Regular Lay (continued)



8 Strand Right Regular Lay

#### Extra High Strength (EHS)—Lang Lay

- 6 EH
- 8 EH

| Part No.  | Class | Dia. (in.) | Construction | Material   | Lay  |
|-----------|-------|------------|--------------|------------|------|
| AAA712P88 | 6X19  | 5/16       | 6 EH         | Extra High | Lang |
| AAA712P89 | 6X19  | 3/8        | 6 EH         | Extra High | Lang |
| AAA712P90 | 6X19  | 1/2        | 6 EH         | Extra High | Lang |
| AAA712P91 | 6X19  | 5/8        | 6 EH         | Extra High | Lang |
| AAA712P92 | 6X19  | 11/16      | 6 EH         | Extra High | Lang |
| AAA712P93 | 6X19  | 3/4        | 6 EH         | Extra High | Lang |
|           |       |            |              |            |      |
| AAA712Q88 | 8X19  | 5/16       | 8 EH         | Extra High | Lang |
| AAA712Q89 | 8X19  | 3/8        | 8 EH         | Extra High | Lang |
| AAA712Q94 | 8X19  | 7/16       | 8 EH         | Extra High | Lang |
| AAA712Q90 | 8X19  | 1/2        | 8 EH         | Extra High | Lang |
| AAA712Q95 | 8X19  | 9/16       | 8 EH         | Extra High | Lang |
| AAA712Q91 | 8X19  | 5/8        | 8 EH         | Extra High | Lang |
| AAA712Q92 | 8X19  | 11/16      | 8 EH         | Extra High | Lang |
| AAA712Q93 | 8X19  | 3/4        | 8 EH         | Extra High | Lang |



Lang Lay Rope (note strand orientation)

#### Iron Wire Rope

- 6 Strand Iron Wire Rope
- 8 Strand Iron Wire Rope
- NP = Non-Preformed

| Part No.   | Class | Dia. (in.) | Construction | Material | Lay     |
|------------|-------|------------|--------------|----------|---------|
| AAA712P1   | 6X19  | 1/4        | 6L           | Iron     | Regular |
| AAA712P2   | 6X19  | 5/16       | 6L           | Iron     | Regular |
| AAA712P101 | 6X19  | 5/16       | 6L NP        | Iron     | Regular |
| AAA712P3   | 6X19  | 3/8        | 6L           | Iron     | Regular |
| AAA712P102 | 6X19  | 3/8        | 6L NP        | Iron     | Regular |
| AAA712P4   | 6X19  | 7/16       | 6L           | Iron     | Regular |
| AAA712P5   | 6X19  | 1/2        | 6L           | Iron     | Regular |
| AAA712P103 | 6X19  | 1/2        | 6L NP        | Iron     | Regular |
| AAA712P6   | 6X19  | 9/16       | 6L           | Iron     | Regular |
| AAA712P7   | 6X19  | 5/8        | 6L           | Iron     | Regular |
| AAA712P104 | 6X19  | 5/8        | 6L NP        | Iron     | Regular |
| AAA712P8   | 6X19  | 11/16      | 6L           | Iron     | Regular |
| AAA712P9   | 6X19  | 3/4        | 6L           | Iron     | Regular |
| AAA712P106 | 6X19  | 3/4        | 6L NP        | Iron     | Regular |
| AAA712P10  | 6X19  | 13/16      | 6L           | Iron     | Regular |
| AAA712P107 | 6X19  | 13/16      | 6L NP        | Iron     | Regular |
| AAA712P11  | 6X19  | 7/8        | 6L           | Iron     | Regular |
| AAA712P12  | 6X19  | 15/16      | 6L           | Iron     | Regular |
| AAA712P13  | 6X19  | 1          | 6L           | Iron     | Regular |



6 Strand Right Regular lay

| Part No.   | Class | Dia. (in.) | Construction | Material | Lay     |
|------------|-------|------------|--------------|----------|---------|
| AAA712Q1   | 8X19  | 1/4        | 8L           | Iron     | Regular |
| AAA712Q2   | 8X19  | 5/16       | 8L           | Iron     | Regular |
| AAA712Q101 | 8X19  | 5/16       | 8L NP        | Iron     | Regular |
| AAA712Q3   | 8X19  | 3/8        | 8L           | Iron     | Regular |
| AAA712Q102 | 8X19  | 3/8        | 8L NP        | Iron     | Regular |
| AAA712Q4   | 8X19  | 7/16       | 8L           | Iron     | Regular |
| AAA712Q5   | 8X19  | 1/2        | 8L           | Iron     | Regular |
| AAA712Q103 | 8X19  | 1/2        | 8L NP        | Iron     | Regular |
| AAA712Q6   | 8X19  | 9/16       | 8L           | Iron     | Regular |
| AAA712Q7   | 8X19  | 5/8        | 8L           | Iron     | Regular |
| AAA712Q104 | 8X19  | 5/8        | 8L NP        | Iron     | Regular |
| AAA712Q8   | 8X19  | 11/16      | 8L           | Iron     | Regular |
| AAA712Q105 | 8X19  | 11/16      | 8L NP        | Iron     | Regular |
| AAA712Q9   | 8X19  | 3/4        | 8L           | Iron     | Regular |
| AAA712Q106 | 8X19  | 3/4        | 8L NP        | Iron     | Regular |
| AAA712Q10  | 8X19  | 13/16      | 8L           | Iron     | Regular |
| AAA712Q11  | 8X19  | 7/8        | 8L           | Iron     | Regular |
| AAA712Q12  | 8X19  | 15/16      | 8L           | Iron     | Regular |



8 Strand Right Regular Lay

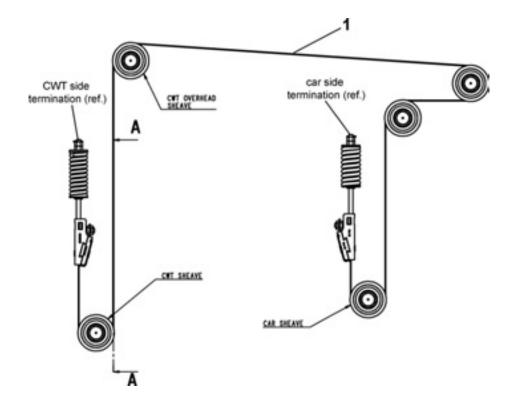
## **Miscellaneous Special Ropes and Belts**

#### **Bronze Tiller and Miscellaneous Ropes**

| Part No.  | Description   |
|-----------|---|
| VP-843600 | 3/16 in. Bronze Wire Rope, 8 x 19 Construction (special order only)   |
| VP-843650 | 7/16 in. Bronze Wire Rope, 8 X 19 Construction, Tail Rope (previously before Tiller) for Wedge Clamp Safety Drums |
| VP-844350 | 3/8 in. Iron Rope, Type 6LT   |
| VP-844400 | 1/2 in. Iron Pipe, Type 6LT (special order only)  |
| VP-844700 | 5/8 in. Hawser Laid Manila Rope   |

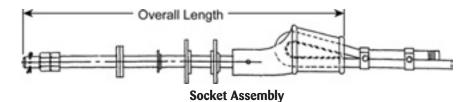
#### Coated Steel Belt (CSB)

| REF. No. | PART No.  | DESCRIPTION  |  |  |  |  |
|----------|-----------|--|--|--|--|--|
|          | AAA717X1  | CSB, 32kN Gen2 <sup>®</sup> Limited Duty, 30 mm, Approximate Weight: 0.14 lb./ft.  |  |  |  |  |
|          | AAA717AD1 | CSB, 64kN Gen2 Extended Duty, 60 mm, Approximate Weight: 0.27 lb./ft.  |  |  |  |  |
| 1        | AAA717AJ2 | CSB, 43kN Gen2, 30 mm, Approximate Weight: 0.16 lb./ft.<br>( <b>NOTE:</b> Distinguish this belt from AAA717X1 by max break load designation on the back side of belt = $43 \text{ kN}$ ) |  |  |  |  |



## **Rope Termination Equipment**

### Wedge Clamp Rope Shackle Assemblies



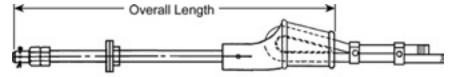
**NOTE:** The wedge clamp rope shackle assembly kit includes socket, wedge insert, washer seats, clips, nuts and cotter pins.

| Part No. | Rope Diameter<br>(in.) | Hitch      | Overall Length<br>(in.) |
|----------|------------------------|------------|-------------------------|
| 229Y1    | 1/2                    | 1:1 or 2:1 | 30.25                   |
| 229Y2    | 1/2                    | 1:1 or 2:1 | 36.25                   |
| 229Y13   | 1/2                    | 1:1 or 2:1 | 24.25                   |
| 229Y14   | 1/2                    | 1:1 or 2:1 | 18.25                   |
| 229Y5    | 5/8                    | 1:1 or 2:1 | 42.25                   |
| 229Y7    | 5/8                    | 1:1 or 2:1 | 24.25                   |
| 229Y3    | 5/8                    | 1:1 or 2:1 | 36.25                   |
| 229Y4    | 5/8                    | 1:1 or 2:1 | 30.25                   |
| 229Y6    | 5/8                    | 2:1        | 30.25                   |
| 229Y8    | 11/16, 3/4             | 1:1 or 2:1 | 30.25                   |
| 229Y9    | 11/16, 3/4             | 1:1 or 2:1 | 36.25                   |
| 229Y11   | 11/16, 3/4             | 1:1 or 2:1 | 24.25                   |
| 229Y10   | 11/16, 3/4             | 1:1        | 43.5                    |
| 229Y12   | 11/16, 3/4             | 1:1        | 31.25                   |

### Compensation Wedge/Clamp Rope Sockets

**NOTE:** The wedge clamp rope shackle assembly kit includes socket, wedge insert, washer seats, clips, nuts and cotter pins.

| _ | Part No.   | Rope Diameter (in.) | Overall Length (in.) | Application  |
|---|------------|---------------------|----------------------|--------------|
| - | AAA25880C1 | 1/2, 9/16, 5/8      | 26.25                | Composation  |
|   | AAA25880C2 | 1/2, 9/16, 5/8      | 21.25                | Compensation |

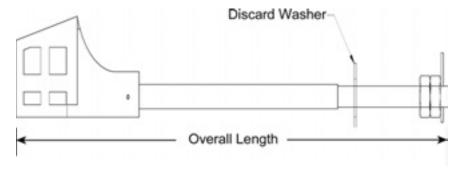


Socket Assembly

17

## Plain Wedge Socket without Seats

| Part No.  | Rope Diameter (in.) | Overall Length (in.) | Description                 |  |  |
|-----------|---------------------|----------------------|-----------------------------|--|--|
| AAA231U51 | 1/2, 9/16, 5/8      | 36.25                |                             |  |  |
| AAA231U52 | 1/2, 9/16, 5/8      | 42.25                | _                           |  |  |
| AAA231U53 | 1/2, 9/16, 5/8      | 24.25                | _                           |  |  |
| AAA231U54 | 1/2, 9/16, 5/8      | 30.25                | _                           |  |  |
| AAA231U55 | 1/2, 9/16, 5/8      | 18.25                |                             |  |  |
| AAA231U56 | 11/16, 3/4          | 31.50                | _                           |  |  |
| AAA231U57 | 11/16, 3/4          | 37.50                | -                           |  |  |
| AAA231U58 | 11/16, 3/4          | 43.50                | Socket, w/o Seats           |  |  |
| AAA231U59 | 11/16, 3/4          | 25.50                | _                           |  |  |
| AAA231U60 | 11/16, 3/4          | 31.50                | -                           |  |  |
| AAA231U61 | 7/8                 | 34.50                | -                           |  |  |
| AAA231U62 | 7/8                 | 40.50                | _                           |  |  |
| AAA231U63 | 7/8                 | 46.50                | -                           |  |  |
| AAA231U64 | 7/8                 | 52.50                | -                           |  |  |
| AAA231U65 | 3/8                 | 17.00                | _                           |  |  |
| AAA231U66 | 1/2, 9/16, 5/8      | 26.25                | Sacket Componentian Daga    |  |  |
| AAA231U67 | 1/2, 9/16, 5/8      | 21.25                | - Socket, Compensation Rope |  |  |



#### Wedge Socket Assembly

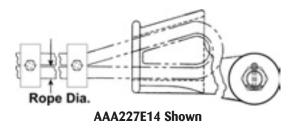
**NOTE:** Wedges for use with these sockets are found on page 26.

## **Governor Wedge Rope Shackles**

To order governor wedge rope shackles, you need to know the following:

- 1. Rope Diameter
- 2. Physical Configuration

| Part No.  | Rope Dia. (in.) |
|-----------|-----------------|
| AAA227E15 | 7/16, 1/2       |
| AAA227E14 | 3/8             |



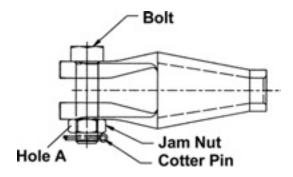
**NOTE:** Wedges for use with these sockets are found on page 26.

#### **Governor Babbited Rope Shackles**

To order governor babbitted rope shackles, you need to know the following:

- 1. Rope Diameter
- 2. Bolt Hole Diameter "A"

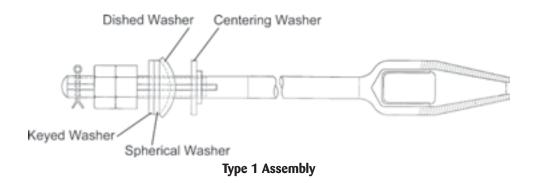
| Part No | Rope Diameter (in.) | Hole A (in.) |                        |
|---------|---------------------|--------------|------------------------|
| 227C4   | 1/2                 | 0.375        | -<br>Social Order Ophy |
| 227C7   | 3/8                 | 0.500        | - Special Order Only   |
| 227C8   | 3/8                 | 0.375        | -                      |

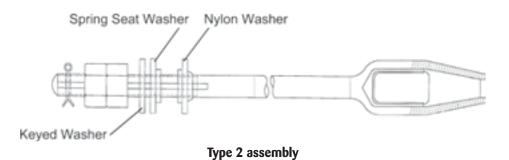


#### **Babbited Rope Shackles**

To order babbitted rope shackles, you need to know the following:

- 1. Rope Diameter
- 2. Babbitted Shackle Length





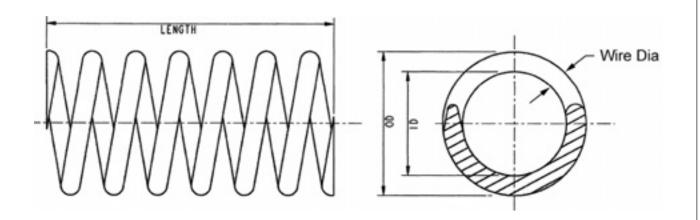
21

| Part No. | Rope Diameter<br>(in.) | Hitch    | Overall Length (in.) | Availability            |
|----------|------------------------|----------|----------------------|-------------------------|
| B229C4   |                        | 1:1, 2:1 | 18                   |                         |
| B229C5   |                        | 1:1, 2:1 | 18                   | -                       |
| B229C2   |                        | 1:1, 2:1 | 24                   | -                       |
| B229C7   |                        | 1:1, 2:1 | 24                   | -                       |
| B229C8   | — 1/2 —                | 1:1, 2:1 | 30                   | -                       |
| B229C9   |                        | 1:1, 2:1 | 30                   | -                       |
| B229C10  |                        | 2:1      | 30                   | -                       |
| B229D5   |                        | 1:1, 2:1 | 18                   | -                       |
| B229D2   |                        | 1:1, 2:1 | 24                   | -                       |
| B229D3   |                        | 1:1, 2:1 | 24                   | -                       |
| B229D6   |                        | 1:1, 2:1 | 24                   | -                       |
| B229D7   |                        | 1:1, 2:1 | 24                   | -                       |
| B229D12  |                        | 1:1      | 24                   | -                       |
| B229D9   | — 5/8 —                | 1:1, 2:1 | 30                   | -                       |
| B229D10  |                        | 1:1      | 30                   | -                       |
| B229D11  |                        | 1:1, 2:1 | 30                   | -                       |
| B229D17  |                        | 1:1, 2:1 | 30                   | -<br>Cassial and a sale |
| B229D18  |                        | 2:1      | 30                   | - Special order only    |
| B229J5   |                        | 1:1, 2:1 | 24                   | -                       |
| B229J6   |                        | 1:1, 2:1 | 24                   | -                       |
| B229J10  |                        | 1:1, 2:1 | 24                   | -                       |
| B229J7   |                        | 1:1, 2:1 | 30                   | -                       |
| B229J11  |                        | 1:1, 2:1 | 30                   | -                       |
| B229J8   |                        | 1:1, 2:1 | 36                   | -                       |
| B229J9   |                        | 1:1      | 36                   | -                       |
| B229J12  |                        | 1:1, 2:1 | 36                   | -                       |
| B229J14  |                        | 1:1, 2:1 | 42                   | -                       |
| B229E4   |                        | 1:1, 2:1 | 24                   | -                       |
| B229E5   |                        | 1:1, 2:1 | 30                   | -                       |
| B229E6   | — 3/4 —                | 1:1, 2:1 | 30                   | -                       |
| B229E7   |                        | 1:1, 2:1 | 36                   | -                       |
| B229E11  |                        | 1:1, 2:1 | 40                   | -                       |
| B229E12  | 7/8                    | 1:1      | 44                   | -                       |
| B229E13  |                        | 1:1, 2:1 | 52                   | -                       |

| Part No.                       | Free Length<br>(in.) | ID (in.) | OD (in.) | Wire Dia. (in.) | Approximate<br>No. of Active<br>Coils |
|--------------------------------|----------------------|----------|----------|-----------------|---------------------------------------|
| 90FD6                          | 4-5/8                | 7/8      | 1-3/4    | 7/16            | 7                                     |
| 90BP1                          | 10-5/16              | 1-1/4    | 2-1/16   | 13/32           | 17                                    |
| AAA90ES1                       | 8-1/4                | 1-1/8    | 2-1/16   | 0.47            | 10.5                                  |
| 90GD5                          | 4-3/4                | 1-1/8    | 2-1/8    | 1/2             | 6                                     |
| 90GD23                         | 9                    | 1-1/8    | 2-1/8    | 1/2             | 13                                    |
| 90GD25                         | 8-1/2                | 1-1/8    | 2-1/8    | 1/2             | 12                                    |
| 90GD18                         | 10-1/2               | 1-1/4    | 2-1/4    | 1/2             | 13-1/2                                |
| 90GD24                         | 13                   | 1-1/2    | 2-1/2    | 1/2             | 15-1/2                                |
| 90GD21                         | 10-3/8               | 1-9/16   | 2-9/16   | 1/2             | 13                                    |
| 90HD15                         | 15-15/16             | 1-7/16   | 2-9/16   | 9/16            | 19                                    |
| 90HD10                         | 10                   | 2        | 3-1/8    | 9/16            | 10-1/2                                |
| AAA90EM1<br>(see <b>NOTE</b> ) | 9.94                 | 2-1/8    | 3-7/16   | 21/32           | 8-1/2                                 |
| AAA90ES2                       | 9-1/8                | 2-1/16   | 3-1/2    | 0.72            | 7.2                                   |
| 90ND7                          | 8-1/2                | 2        | 3-5/8    | 13/16           | 6-1/3                                 |
| 90KD8                          | 12-3/4               | 2-3/8    | 3-3/4    | 11/16           | 11                                    |

## Shackle Hitch Springs: Traditional

**NOTE:** This spring is a redesigned version of 90JD12, which carried different dimensions as follows: 10-3/4 L x 3.63 OD x 5/8 wire diameter and 9-1/2 coils. AAA90EM1 is its direct replacement.

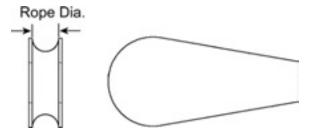


| Part No.             | Free Length<br>(in.) | ID (in.) | OD (in.) | Wire Dia. (in.) | Approx. No. of<br>Active Coils |
|----------------------|----------------------|----------|----------|-----------------|--------------------------------|
| AAA90FW1<br>AAA90FW3 | 5-1/32               | 1-1/8    | 1-15/16  | 13/32           | 8                              |
| TAA90CG2             | 7-1/16               | 1-1/2    | 2-3/16   | 3/8             | 12-1/2                         |
| TAA90CG1             | 5-3/4                | 1-7/16   | 2-1/4    | 3/8             | 9-1/2                          |
| AAA90FW5             | 7-1/16               | 1-7/16   | 2-5/16   | 7/16            | 10                             |
| AAA90FW7             | 5-7/16               | 1-7/16   | 2-5/16   | 7/16            | 7-1/2                          |
| TAA90CK2             | 7-3/4                | 2-1/16   | 3-1/16   | 1/2             | 9-1/4                          |
| TAA90CK1             | 6-3/4                | 2-1/16   | 3-1/4    | 19/32           | 7-1/8                          |

## Shackle Hitch Springs: Gen2

## Wedges and Washers

| Part No.  | Rope Diameter<br>(in.) | Color Code | Description   |
|-----------|------------------------|------------|---------------|
| AAA231U10 | 1/2                    | Blue       |               |
| AAA231U11 | 5/8,9/16               | Red        |               |
| AAA231U12 | 3/4, 11/16             | Yellow     | Insert, Wedge |
| AAA231U13 | 7/8                    | Purple     |               |
| AAA231U14 | 3/8                    | Black      |               |

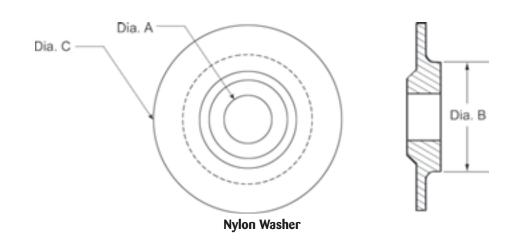


| Part No. | Dia. A (in.) | Dia. B (in.) | Dia. C (in.) | Application                                | Description                |
|----------|--------------|--------------|--------------|--|----------------------------|
| 133AR6   | 0.81         | 1.90         | 3.50         |  |                            |
| 133AR3   | 0.81         | 2.15         | 3.67         | 229Y5, 229Y7                               | _                          |
| 133AR5   | 0.94         | 1.32         | 2.60         | AAA231U57,<br>AAA231U58                    | -                          |
| 133AR1   | 0.94         | 2.19         | 3.75         | 229Y8 thru<br>229Y12<br>(see <b>NOTE</b> ) | Washer, Spring Seat, Nylon |
| 133AR8   | 1.19         | 1.85         | 3.50         | AAA231U57,<br>AAA231U58                    | -                          |
| 133AR2   | 1.19         | 2.19         | 3.75         |  | -                          |
| 133AR4   | 1.44         | 1.88         | 2.60         |  | -                          |

Wedge Insert

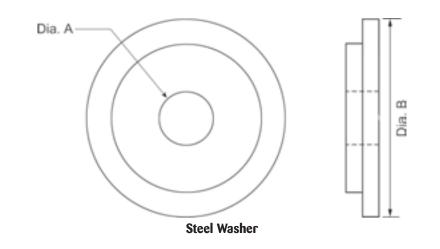
#### Wedges & Washers (continued)

**NOTE:** There was one other obsolete plastic washer application for 5/8-inch rope applications. Please see note under spring part AAA90EM1 (page 24) and cease using this washer. Contact UNITEC for assistance.

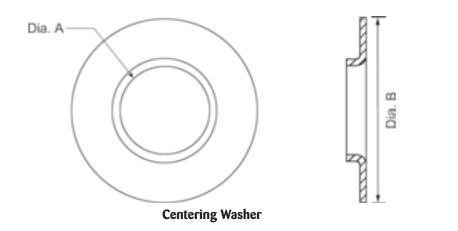


#### Wedges & Washers (continued)

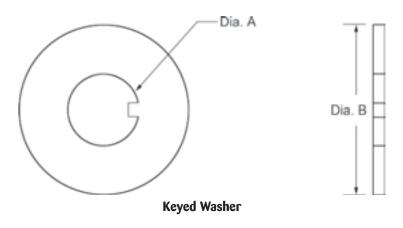
| Part No.Dia. A (in.)Dia. B (in.)ApplicationDescription $133E13$ $0.78$ $3.25$ $\cdots$ $133E23$ $0.78$ $3.50$ $\cdots$ $133E19$ $0.78$ $3.75$ $229Y5, 229Y7$ $133E14$ $0.91$ $3.75$ $229Y8$ thru<br>$229Y12$ $133E22$ $0.94$ $2.60$ AAA231U57,<br>AAA231U58 $133E15$ $1.15$ $3.75$ B229J $133E25$ $1.19$ $3.50$ AAA231U57,<br>AAA231U58 $133E27$ $1.44$ $3.75$ AA231U63,<br>AAA231U64 $133E21$ $1.93$ $3.75$ B229E | - |          |              |              |              |                                 |
|--|---|----------|--------------|--------------|--------------|---------------------------------|
| $\begin{array}{c ccccccccccccccccccccccccccccccccccc$  | _ | Part No. | Dia. A (in.) | Dia. B (in.) | Application  | Description                     |
| $\begin{array}{c c c c c c c c c c c c c c c c c c c $   |   | 133E13   | 0.78         | 3.25         |              |                                 |
| $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$   |   | 133E23   | 0.78         | 3.50         |              | _                               |
| 229Y12         133E22       0.94       2.60       AAA231U57,<br>AAA231U58       Washer, Spring Seat, Steel         133E15       1.15       3.75       B229J         133E25       1.19       3.50       AAA231U57,<br>AAA231U58         133E27       1.44       3.75       AAA231U63,<br>AAA231U64  |   | 133E19   | 0.78         | 3.75         | 229Y5, 229Y7 | _                               |
| AAA231U58         Washer, Spring Seat, Steel           133E15         1.15         3.75         B229J           133E25         1.19         3.50         AAA231U57,<br>AAA231U58           133E27         1.44         3.75         AAA231U63,<br>AAA231U64  |   | 133E14   | 0.91         | 3.75         |              |                                 |
| 133E25       1.19       3.50       AAA231U57,<br>AAA231U58         133E27       1.44       3.75       AAA231U63,<br>AAA231U64  | - | 133E22   | 0.94         | 2.60         |              | –<br>Washer, Spring Seat, Steel |
| AAA231U58<br>133E27 1.44 3.75 AAA231U63,<br>AAA231U64  | - | 133E15   | 1.15         | 3.75         | B229J        | _                               |
| AAA231U64  | - | 133E25   | 1.19         | 3.50         | ,            | _                               |
| 133E21 1.93 3.75 B229E   | - | 133E27   | 1.44         | 3.75         | ,            | _                               |
|  | _ | 133E21   | 1.93         | 3.75         | B229E        | _                               |



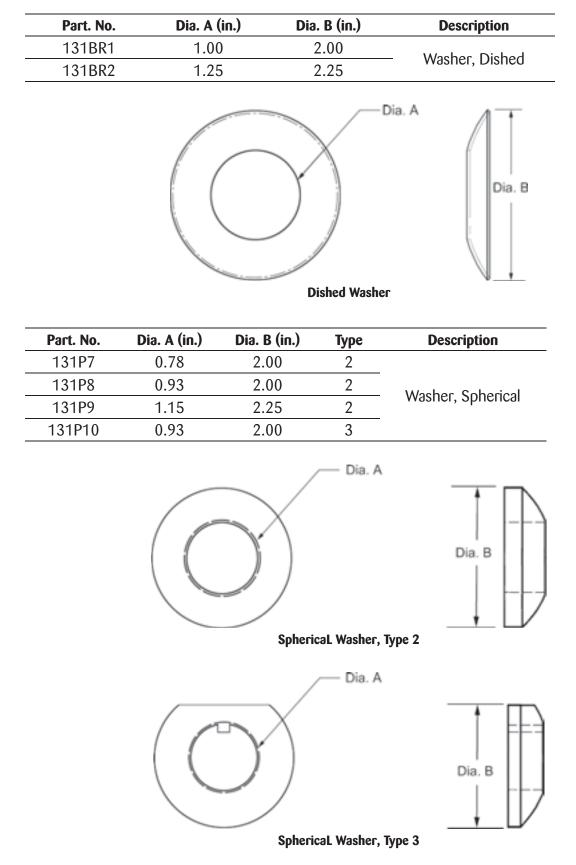
| Part No. | Dia. A (in.) | Dia. B (in.) | Application                                | Description       |
|----------|--------------|--------------|--|-------------------|
| 131BS1   | 0.81         | 1.69         | 229Y1 thru 229Y4,<br>229Y6, 229Y13, 229Y14 |                   |
| 131BS2   | 0.93         | 2.12         | B229D                                      | Washer, Centering |
| 131BS3   | 1.18         | 2.56         | B229E                                      | -                 |



| Part. No. | Dia. A (in.) | Dia. B (in.) | Description   |
|-----------|--------------|--------------|---------------|
| 131BG1    | 0.90         | 2.12         |               |
| 131BG2    | 0.78         | 1.68         | Mashas Kayad  |
| 131BG3    | 1.15         | 2.56         | Washer, Keyed |
| 131BG4    | 1.40         | 3.37         | -             |



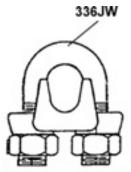
#### Wedges & Washers (continued)



## Wire Rope Clips

| Description                 | Rope Size (in.) | Part No. |
|-----------------------------|-----------------|----------|
|                             | 1/8             | 336JW1   |
| -                           | 3/16            | 336JW2   |
| Clama (Casabu Clia)         | 1/4             | 336JW3   |
| Clamp (Crosby Clip)         | 3/8             | 336JW4   |
| -                           | 1/2             | 336JW5   |
| -                           | 5/8             | 336JW6   |
|                             | 3/8             | 336KX1   |
|                             | 7/16-1/2i       | 336KX2   |
|                             | 9/16-5/8        | 336KX3   |
| Clamp, Wire Rope (Fist Grip | 3/4             | 336KX4   |
|                             | 7/8             | 336KX5   |
|                             | 3/16-1/4 in.    | 336KX6   |
|                             | 5/16            | 336KX7   |

| Part No.   | Rope Dia. (in.) | Description    |
|------------|-----------------|----------------|
| AAA339NL10 | 1/2, 9/16, 5/8, |                |
|            | 13 mm, 16 mm    |                |
| AAA339NL11 | 11/16 & 3/4     | Clip, Retainer |
| AAA339NL12 | 13/16 & 7/8     | -              |
| AAA339NL13 | 3/8             | -              |

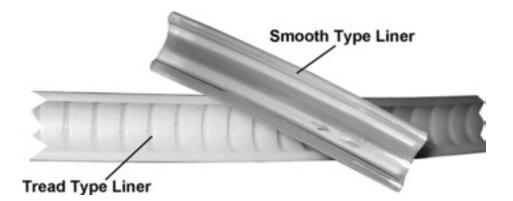


Crosby clips are used with wedge shackles hobbling, not for hoisting.





## **Sheave liners**



**NOTE:** Chain connection type sheave liners are not available through UNITEC. It is suggested as a time-saving measure. For applications where there is an inboard drive sheave gearless machine, contract with a local Otis office for chain sheave liner supply and installation.

| Machine          | Treaded | Rope Dia. (in.) | Sheave Dia. (in.) | Joined Liner Part No.                  |
|------------------|---------|-----------------|-------------------|--|
| 14AT             | Treaded | 1/2             | 20                | 3F-251BT1 * (special order)            |
| 17CT             | Treaded | 1/2             | 21                | AAA251BT2                              |
| 17CT             | Treaded | 1/2             | 26                | AAA251BT7                              |
| 17CT             | Treaded | 5/8             | 26                | AAA251BV7                              |
| 22CT             | Treaded | 1/2             | 26                | AAA251BT7                              |
| 22CT             | Treaded | 1/2             | 28                | AAA251BT9                              |
| 22CT             | Treaded | 1/2             | 30                | AAA251BT10                             |
| 22CT             | Treaded | 1/2             | 32                | AAA251BT11                             |
| 22CT             | Treaded | 5/8             | 28                | AAA251BV9                              |
| 22CT             | Treaded | 5/8             | 30                | AAA251BV10                             |
| 22CT             | Treaded | 1/2             | 30                | 3F-251BT5 <sup>*</sup> (special order) |
| 29CT             | Treaded | 1/2             | 38                | AAA251BT13                             |
| 29CT             | Treaded | 5/8             | 32                | AAA251BV11                             |
| 29CT             | Treaded | 5/8             | 38                | AAA251BV13                             |
| 131HT/139HT      | Treaded | 1/2             | 27                | 3F-251BT3 *                            |
| 131HT/139HT      | Treaded | 1/2             | 27                | AAA251BT8 **                           |
| 139HT            | Treaded | 1/2             | 22                | AAA251BT3                              |
| 139HT            | Treaded | 1/2             | 24                | AAA251BT5                              |
| 155HT            | Treaded | 1/2             | 24                | AAA251BT5                              |
| 155HT            | Treaded | 1/2             | 27                | AAA251BT8                              |
| 155HT            | Treaded | 5/8             | 27                | (contact UNITEC)                       |
| 219HT (swt only) | Treaded | 5/8             | 30                | AAA251BV10                             |
| 219HT (swt only) | Treaded | 5/8             | 34                | AAA251BV12                             |
| 269HT (swt only) | Treaded | 11/16           | 36                | (contact UNITEC)                       |
| 269HT (swt only) | Treaded | 11/16           | 40                | AAA251CD7                              |
| 306/315DT        | Treaded | 1/2             | 20                | AAA251BT1                              |
| 215, 306/315DT   | Treaded | 5/8             | 25                | AAA251BV6                              |

#### **Liners for Machines and Deflector Sheaves**

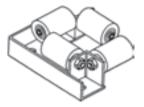
\* 1/8 inch wide tread slots (non-standard)

\*\* 1/16 inch wide tread slots (standard)

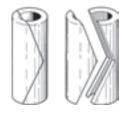
| Machine                    | Smooth* | Rope Dia. (in.) | Sheave Dia. (in.) | Joined Liner Part No. |
|----------------------------|---------|-----------------|-------------------|-----------------------|
| 17CT                       | Smooth  | 1/2             | 26                | 251BT12               |
| 17CT                       | Smooth  | 5/8             | 26                | 251CE8                |
| 17CT                       | Smooth  | 5/8             | 28                | 251BV6                |
| 22CT                       | Smooth  | 1/2             | 30                | 251BT6                |
| 17CT                       | Smooth  | 1/2             | 21                | 251BT17               |
| 17CT                       | Smooth  | 1/2             | 24                | 251BT14               |
| 215DT (deflector)          | Smooth  | 5/8             | 25                | 251BV12               |
| 215DT (driver & deflector) | Smooth  | 1/2             | 22.5              | 251BT21               |
| 215DT                      | Smooth  | 5/8             | 26                | 251CE8                |
| 131HT Smooth               | Smooth  | 1/2             | 27                | 251BT4                |

\* Smooth liners, when used on geared machines, are used almost exclusively in "long wrap traction" applications where arc of contact of ropes on the drive sheave generally results in  $\sim 270^{\circ}$  of contact. If this is not the case for your application, consider having UNITEC confirm the sheave liner identity for you.

## **Rope Guides**



AAA385SP401



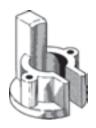
CAA385A1



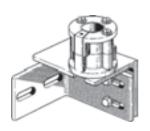
AAA385RS1



CAA22400A1



385SJW1

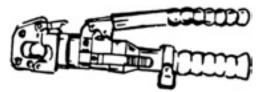


B6199T1

## Tools and Tags for Rope

## Wire Rope Cutting and Seizing Material

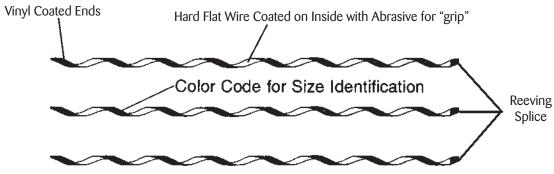
| Part No.  | Description   |
|-----------|---|
| VP-703170 | Band, Cable, 3/8 in., Morse Starrett, Used as Seizing           |
| VP-703175 | Band, Cable, 5/8 in., Morse Starrett, Used as Seizing           |
| VP-703180 | Band, Cable, 1/2 in., Morse Starrett, Used as Seizing           |
| VP-703185 | Band, Cable, 3/4 in., Morse Starrett, Used as Seizing           |
| MT-114364 | Blade, Moveable Replacement, for MT-114281                      |
| MT-114281 | Cutter, Cable, up to 3/4 in. Wire Rope (see illustration below) |
| VP-912900 | Wire, Black Soft Steel, 21 Gauge, 1/4 lb. Spools                |
|           |   |



MT-114281 Shown

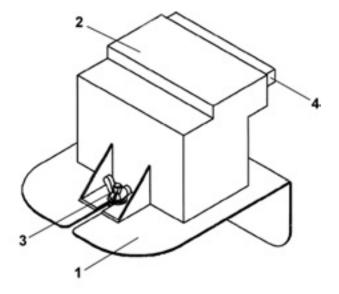
| Description     | Color Code   | Rope Size (in.) | Part No. (set of 3) |
|-----------------|--------------|-----------------|---------------------|
|                 | Yellow       | 3/8             | MT-131009-1         |
|                 | Orange       | 1/2             | MT-131009-2         |
|                 | Black        | 5/8             | MT-131009-3         |
|                 | Red          | 11/16           | MT-131009-4         |
| Splice, Reeving | Green        | 3/4             | MT-131009-5         |
|                 | Yellow       | 13/16           | MT-131009-6         |
|                 | Blue         | 7/8             | MT-131009-7         |
|                 | Red / Orange | 1               | MT-131009-8         |
|                 | Yellow       | 9/16            | MT-131009-9         |

### **Reeving Splices for Re-Roping**



Wire Rope & Governors

# **Rope Lubricator Kit for Hoist Rope**

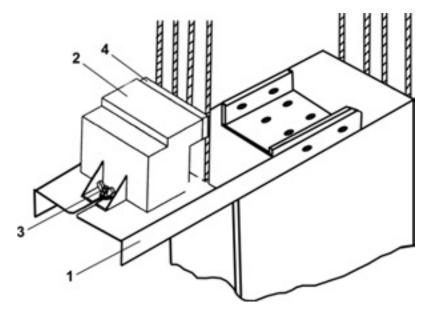


NOTE: Rope lubricator comes with a ground wire and must be grounded to function properly.

| Ref. No. | Part No.          | Description   |
|----------|-------------------|---|
|          | AAA386LEH1        | Bracket, Used on 3 in., 5 in., 7 in., and 9 in. Lubricators |
| 1        | AAA386LEH2        | Bracket, Used on 12 in. and 14 in. Lubricators              |
|          | AAA386LEH3        | Bracket, Used on 16 in. Lubricator                          |
|          | AAA22300H1-UNITEC | Kit, Lubricator, Hoist Rope, 3 in.                          |
|          | AAA22300H2-UNITEC | Kit, Lubricator, Hoist Rope, 5 in.                          |
|          | AAA22300H3-UNITEC | Kit, Lubricator, Hoist Rope, 7 in.                          |
| *        | AAA22300H4-UNITEC | Kit, Lubricator, Hoist Rope, 9 in.                          |
|          | AAA22300H5-UNITEC | Kit, Lubricator, Hoist Rope, 12 in.                         |
|          | AAA22300H7-UNITEC | Kit, Lubricator, Hoist Rope, 14 in.                         |
|          | AAA22300H6-UNITEC | Kit, Lubricator, Hoist Rope, 16 in.                         |
|          | AAA508AH8         | Lubricator, L = 3 in.                                       |
|          | AAA508AH9         | Lubricator, L = 5 in.                                       |
|          | AAA508AH10        | Lubricator, L = 7 in.                                       |
| 2        | AAA508AH11        | Lubricator, L = 9 in.                                       |
| Z        | AAA508AH12        | Lubricator, L = 12 in.                                      |
|          | AAA508AH14        | Lubricator, L = 14 in.                                      |
|          | AAA508AH13        | Lubricator, L = 16 in.                                      |
|          | VP-419755         | Lubricant, 1 Quart  |
| 3        | 72FD5             | Nut, Wing   |
|          | AAA488M3          | Wick, Felt, 3 in.   |
|          | AAA488M8          | Wick, Felt, 5 in.   |
|          | AAA488M4          | Wick, Felt, 7 in.   |
| 4        | AAA488M5          | Wick, Felt, 9 in.   |
|          | AAA488M6          | Wick, Felt, 12 in.  |
|          | AAA488M10         | Wick, Felt, 14 in.  |
|          | AAA488M7          | Wick, Felt, 16 in.  |

 $^{*}$  Order this item if you are adding a lubricator where there was none previously.

# **Rope Lubricator Kit for Compensation Rope**



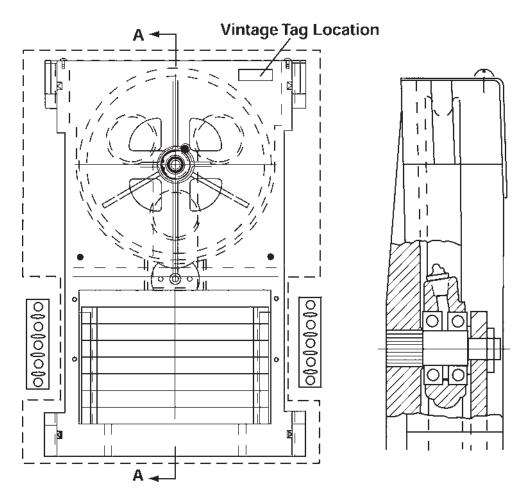
| Ref No. | Part No.           | Description  |
|---------|--------------------|--|
|         | AAA347BHD2         | Bracket, Compensation Frame, 3 in., 5 in., 7 in. and 9 in.     |
|         | AAA347BHD4         | Bracket, Compensation Frame, 12 in. and 14 in.                 |
| 1       | AAA347BHD6         | Bracket, Compensation Frame, 16 in.                            |
| I       | AAA347BHD7         | Bracket, Compensation Reservoir, 3 in., 5 in., 7 in. and 9 in. |
|         | AAA347BHD3         | Bracket, Compensation Reservoir, 12 in. and 14 in.             |
|         | AAA347BHD5         | Bracket, Compensation Reservoir, 16 in.                        |
|         | AAA22300H8-UNITEC  | Kit, Lubricator, Compensation Rope, 3 in.                      |
|         | AAA22300H9-UNITEC  | Kit, Lubricator, Compensation Rope, 5 in.                      |
|         | AAA22300H10-UNITEC | Kit, Lubricator, Compensation Rope, 7 in.                      |
| *       | AAA22300H11-UNITEC | Kit, Lubricator, Compensation Rope, 9 in.                      |
|         | AAA22300H12-UNITEC | Kit, Lubricator, Compensation Rope, 12 in.                     |
|         | AAA22300H14-UNITEC | Kit, Lubricator, Compensation Rope, 14 in.                     |
|         | AAA22300H13-UNITEC | Kit, Lubricator, Compensation Rope, 16 in.                     |
|         | AAA508AX8          | Lubricator, $L = 3$ in.  |
|         | AAA508AX9          | Lubricator, $L = 5$ in.  |
|         | AAA508AX10         | Lubricator, $L = 7$ in.  |
| 2       | AAA508AX11         | Lubricator, $L = 9$ in.  |
|         | AAA508AX12         | Lubricator, L = 12 in.   |
|         | AAA508AX14         | Lubricator, L = 14 in.   |
|         | AAA508AX13         | Lubricator, L = 16 in.   |
| 3       | 72DD5              | Nut, Wing  |
|         | AAA488M3           | Wick, Felt, 3 in.  |
|         | AAA488M8           | Wick, Felt, 5 in.  |
|         | AAA488M4           | Wick, Felt, 7 in.  |
| 4       | AAA488M5           | Wick, Felt, 9 in.  |
|         | AAA488M6           | Wick, Felt, 12 in.   |
|         | AAA488M10          | Wick, Felt, 14 in.   |
|         | AAA488M7           | Wick, Felt, 16 in.   |
|         |                    |  |

 $^{\ast}\,$  Order this item if you are adding a lubricator where there was none previously.

# Wire Rope Data Plate

| Part No.   | Des                | cription | O<br>ROPE MANUFACTURER   |
|------------|--------------------|----------|--|
| AAA102ACD2 | Data Plate, Wire R | оре      | KOFE MANOFACIONER  |
|            |                    |          |  |
|            |                    |          |  |
|            |                    |          | NON PREFORMED & IWRC<br>NON PREFORMED & & WRC<br>8X19W<br>TRACTION & 6X25F<br>E.H. STRENGTH & 8X19W  |
|            |                    |          |  |
|            |                    |          | COMPENSATING REGULAR LAY<br>NATURAL FIBER CORE<br>SYNTHETIC FIBER CORE   |
|            |                    |          | NOMINAL STRENGTH (LBS)   |
|            |                    |          | 1/4" 3,600 5/8" 23,000<br>5/16" 5,600 5/8" 23,200<br>3/8" 4,200 5/8" 31,600<br>3/8" 8,200 11/16" 13,400<br>3/8" 8,200 11/16" 27,000<br>3/8" 9,200 11/16" 38,200<br>7/16" 5,600 11/16" 38,200<br>7/16" 11,000 3/4" 38,200<br>1/2" 7,200 3/4" 32,000<br>1/2" 8,400 3/4" 45,200<br>1/2" 14,500 13/16" 18,700<br>1/2" 14,500 13/16" 18,700<br>1/2" 14,500 13/16" 46,000<br>9/16" 9,200 13/16" 52,900   |
|            |                    |          | 3/8" 5,000 11/16" 13,400<br>3/8" 8,200 11/16" 27,000<br>3/8" 9,200 11/16" 27,000   |
|            |                    |          | 7/16" 5,600 11/16" 38,200 7/16" 11,000 3/4" 36,200 7/16" 11,000 3/4" 36,000 7/16" 13,500 3/4" 32,000 1/2" 7,200 3/4" 38,900 1/2" 7,200 3/4" 38,900 1/2" 7,200 3/4" 45,200 1/2" 7,20 |
|            |                    |          | 1/2" 7,2000 3/4" 38,9000<br>1/2" 8,4000 3/4" 45,2000<br>1/2" 14,5000 13/16" 18,7000  |
|            |                    |          | 1/2" 17,5000 13/16" 37,000<br>1/2" 20,4000 13/16" 46,000<br>9/16" 9.2000 13/16" 52,900   |
|            |                    |          | 1/2" 8,400 3/4" 45,200<br>1/2" 14,500 13/16" 18,700<br>1/2" 17,500 13/16" 37,000<br>1/2" 20,400 13/16" 37,000<br>9/16" 9,200 13/16" 52,900<br>9/16" 18,500 7/8" 21,400<br>9/16" 22,100 7/8" 42,000<br>5/8" 11,200 7/8" 52,600<br>5/8" 12,800 7/8" 61,200   |
|            |                    |          |  |
|            |                    |          | DIAMETER NOMINAL<br>B.S. (LBS.)  |
|            |                    |          | ROPE TO BE LUBRICATED PER<br>MANUFACTURES AND/OR INSTALLATION  |
|            |                    |          | COMPANIES RECOMMENDATIONS.   |
|            |                    |          | ROPES INSTALLED BY:<br>(COMPANY NAME AND DATE)   |
|            |                    |          |  |
|            |                    |          | DATE ROPES<br>FIRST SHORTENED  |
|            |                    |          | $ \begin{array}{c c} JAN. \bullet & FEB. \bullet & MAR. \bullet & APR. \bullet \\ MAY \bullet & JUNE \bullet & JULY \bullet & AUG. \bullet \\ \end{array} $  |
|            |                    |          | SEPT.● 00T.● NOV.● DEC.●<br>2 2011 ● 2012 ● 2013 ●   |
|            |                    |          | 2014 2015 2016 2017  |
|            |                    |          | 0  |

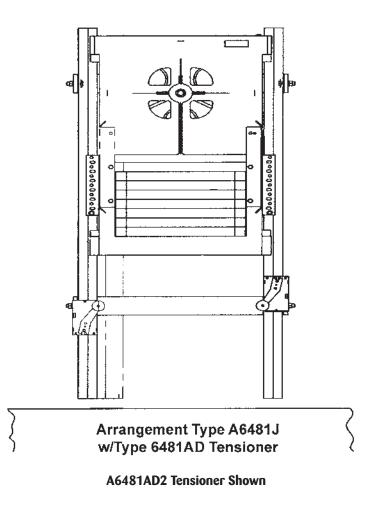
# **Governors and Related**



6481AD Rope Tightener

# **Tension Frames**

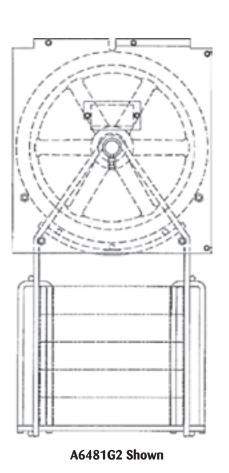
| Description                     | Application   |
|---------------------------------|---|
| Sheave, Tension Frame, 16 in.   | 6481P, T, AD  |
| Bearing, Tension Frame          | 6481P, T, AD  |
| Bearing (sealed), Tension Frame | 6481P, T, AD  |
|                                 | Sheave, Tension Frame, 16 in.<br>Bearing, Tension Frame |



| Part No.    | Description   | Application |
|-------------|---|-------------|
| A6481G1     | Assembly, Tension Frame, w/Weights (~28" h x 14" w x 4" t)              | A6481G      |
| A6481G2     | Assembly, Tension Frame, w/Weights 80 lb. (~28" h x 14" w x 4" t)       | A6481G      |
| 267J1       | Sheave, w/Bushing, Tension Frame, 12 in.                                | A6481G      |
| AAA385RW1   | Guide (for quieting rattles from A6481G), 1-3/4" Reach off Mounting Bar | A6481G      |
| AAA385RW2   | Guide (for quieting rattles from A6481G), 2-3/8" Reach off Mounting Bar | A6481G      |
| AAA385RW400 | Guide Kit (AAA385RW1 w/hardware)  | A6481G      |
| AAA385RW401 | Guide Kit (AAA385RW2 w/hardware)  | A6481G      |



AAA385RW1

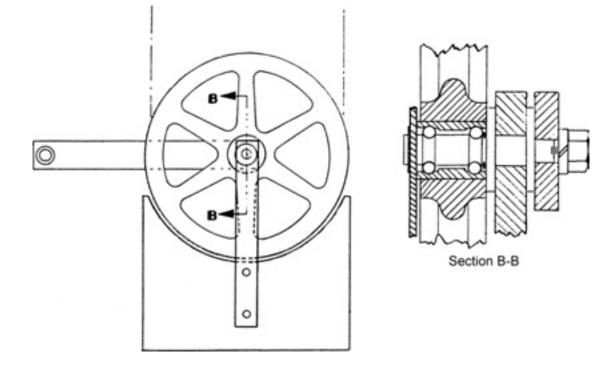




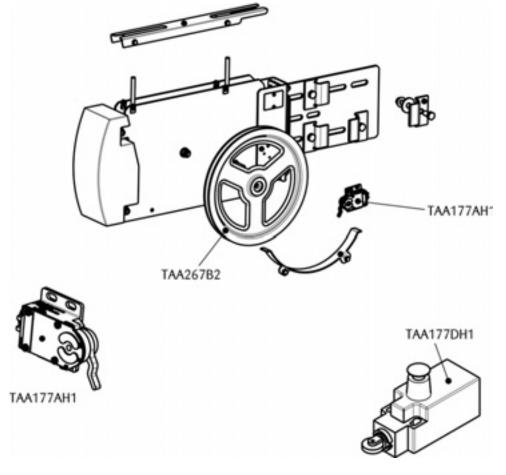
AAA385RW2

#### Tension Frames (continued)

| Part No. | Description           | Application |
|----------|-----------------------|-------------|
| 265AD3   | Sheave, 16.5 in. Dia. | 7051A       |
| 267C2    | Sheave, 12 in. Dia.   | 7051A       |
| 207BD2   | Bearing               | 7051A       |

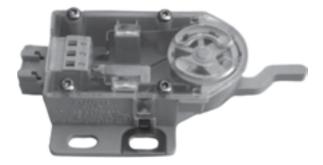


Type 7051A Tension Frame Shown Uses 265AD3 or 267C2 Sheave



**TBA22700E** Assembly

| Part No.    | Description  | Application |
|-------------|--|-------------|
| TBA22700E12 | Assembly, Tension Frame, w/12 in. Sheave, Used w/Apollo Governors                                    | TBA22700E   |
| TBA22700E19 | Assembly, Tension Frame, w/12 in. Sheave, Used w/Apollo Governors                                    | TBA22700E   |
| TBA22700E20 | Assembly, Tension Frame, w/12 in. Sheave, Used w/Apollo Governors (opposite hand of TBA22700E19)     | TBA22700E   |
| TAA267B2    | Sheave, 12 in. (w/bearings)  | TBA22700E   |
| TAA177AH1   | Switch, Rope Stretch (two-way trip), 2NC Contacts (trip opens one cir-<br>cuit, used on TBA22700E12) | TBA22700E   |
| TAA177DH1   | Switch, Roller Type, Manual Reset, 1NO/1NC<br>(used on TBA22700E19 and 20)                           | TBA22700E   |
| TAA177CB1   | Switch, Snap Action w/Rod, 1NC/1NO   | TBA22700E   |



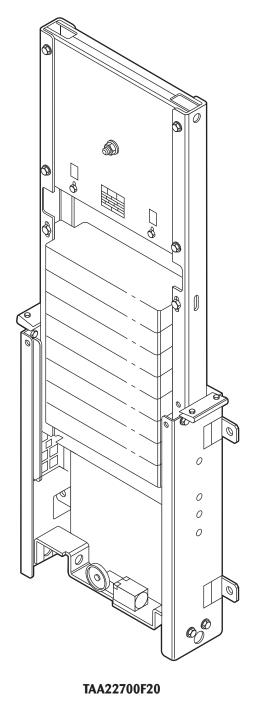
**TAA177AH1** 



TAA177DH1



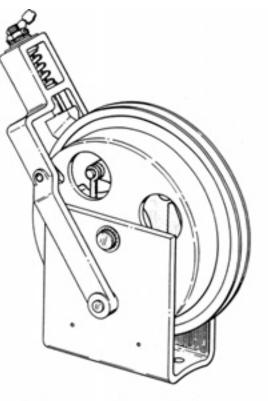
| Part No.    | Description   | Application |
|-------------|---|-------------|
| TAA22700F20 | Assembly, Tension Frame, w/12-in. Sheave, Used w/Samson Governors                 |             |
| TAA267B4    | Sheave, 12 in. (w/bearings)   |             |
| TAA177BD1   | Switch, Rope Stretch, Limit Switch Type, Flexible Rubber 2 in. OD Roller, 1NO/1NC | TAA22700F20 |



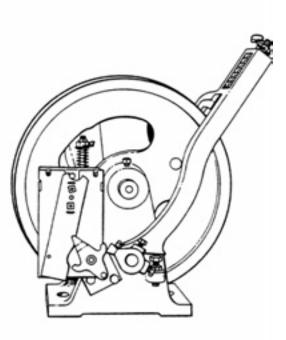


TAA177BD1

# Early Bail Type and Flyball Governors



**R** Governor without Switch (formed base, late model)



**R** Governor with Switch (cast iron base, early model)

**NOTE:** Servicing flyball governors more and more has become a business decision, which must take into account wear in related members which would not be resolved even by replacing some of the simpler common replacement parts. Generally speaking, if the governor has been shown to not operate properly due to wear of the governor bevel gears, spindle shaft, clutch gear wear or even wear in the pin bores in the cast base of the governor (each of these scenarios involves substantial part lead-time, cost and labor—often more than a complete new governor). UNITEC does supply new governor assemblies as follows: Apollo-12 in. (3/8" rope), Samson-12 in. (3/8" rope, 200 FPM to 800 FPM), JDA20610AAA 16.5 in. (1/2" rope, type 7063E), and JDA20610AAA 24 in. (1/2" rope, 7063F) type governors.

#### R Type Governor

**Identification Notes:** 'R' Type Governors have gone through 3 or 4 design versions over the years. Earliest governors had 1-1/4 in. sheave shafts with a grease groove in the shaft. No bushings were present on these governors originally. It is no longer cost effective to rebuild these early governors. Replace the entire governor from this earliest vintage with a type B6866B1 or B6866B2.

Intermediate vintage 'R' governors (~1957) began incorporating bushings in stand, sheave and dog wheel and had 1 in. diameter shafts pinned in stand. It is possible but time-consuming to rebuild this version governor. Do not attempt to do so if sheave is worn–rather install a new governor.

Replacement of just a sheave on all but the latest version 'R' governor is neither possible nor recommended. All pre-1966 'R' type governors had sheave shafts pinned by square head bolt in stand. After 1965, shafts were secured via knurled end on 1 in. shaft. Though not sufficient for latest code compliance (no up overspeed trip protection as well as not having the necessary switches as standard), 'R' type governors are still produced and available through UNITEC for those applications where Modernizations are **not** being performed.

| Part No. | Description   | Application                    |
|----------|---|--------------------------------|
| B6866B1  | Assembly, Complete R Governor (tripping speeds up to 200 FPM), w/o Switch                               | vintages and used new on post- |
| B6866B2  | Assembly, Complete R Governor (tripping speeds over 200 FPM, max contract speed of 200 FPM), w/o Switch | 1965 installations             |

#### **R** Type Governor (continued)

| Part No. | Description   | Application   |
|----------|---|---|
| 335E21   | Bushing, Straight, 5/8 in. ID (early dogs), 2 per Governor  | R Type Governor, 1949–1956<br>(1.25 in. shaft governor) |
| 335H34   | Bushing, Flanged 5/8 in. ID (later dogs), 2 per Governor  | R Type Governor, 1957 thru<br>1965                      |
| 335H33   | Bushing, Flanged, 1 in. ID and ~1 in. Long,<br>(2 per governor–1 for ratchet wheel, 1 for sheave) | R Type Governor, 1957 thru<br>1965                      |
| 335H32   | Bushing, Flanged, 1 in. ID (1 for Sheave)   | R Type Governor, 1957 thru<br>1965                      |
| 335E20   | Bushing, Straight, 0.44 in. ID and ~.3 in. Long, for Link<br>Between Dogs (2 per governor)        | R Type Governor, 1957 thru<br>1965                      |
| 335E76   | Bushing, Straight (2 per cast stand)  | R Type Governor, 1957 thru<br>1965                      |
| 470F2    | Shoe, Rope Gripping (1-5/16" shoulder under head)   | R Type Governor, 1957 thru<br>1965                      |
| 495AT1   | Shaft, 1.25 in. Dia., w/Grease Groove   | R Type Governor, Pre-1957                               |
| 495BP1   | Shaft, 1 in. Dia. (pinned to stand)   | R Type Governor, 1957–66                                |



470F2



**NOTE:** Ask your UNITEC representative to draft a quote on all of the items shown in the rebuild sets if you desire a practical rebuild kit for your R governor.

| Part No. | Description  | Application                |
|----------|--|----------------------------|
| 90BB11   | Spring, Shoe Grip at Yoke<br>(1 or 2 per governor per speed)                           | R Type Governor, All       |
| 90XC3    | Spring, Dog  | R Type Governor, All       |
| 212T4    | Bushing, Straight (2 per Sheave)   | R Type Governor, Post 1965 |
| 212AB1   | Bearing, Sleeve for Yoke (2 per governor)  | R Type Governor, Post 1965 |
| 212AB2   | Bearing, Sleeve, for Ratchet Wheel (1 per governor)                                    | R Type Governor, Post 1965 |
| 335E94   | Bushing, Straight, for Shoe Grip, (1 per governor)                                     | R Type Governor, Post 1965 |
| 335AB5   | Bushing, for Dog (2 per governor)  | R Type Governor, Post 1965 |
| 470F4    | Shoe, Rope Gripping (no shoulder)  | R Type Governor, Post 1965 |
| A495BP1  | Shaft, Knurled End, 1 in. Dia. (no oil groove)   | R Type Governor, Post 1965 |
| B267A2   | Sheave, 12 in. (also order two 81CH2, not to be used for any early pre-1957 governors) | R Type Governor, Post 1965 |



470F4



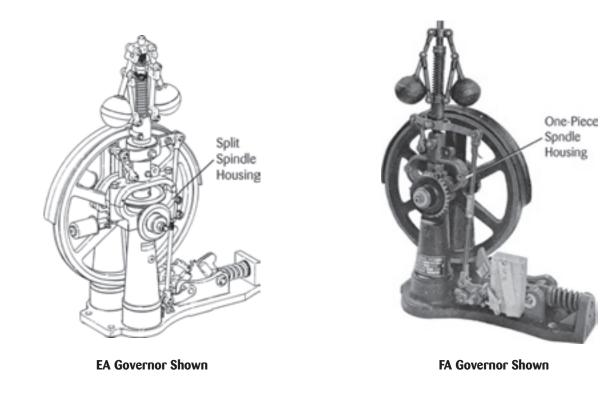
Rebuild Parts Set (post 1966)

**NOTE:** Ask your UNITEC representative to draft a quote on all of the items shown in the rebuild sets if you desire a practical rebuild kit for your R governor.

#### EA and EAO Flyball Governors (400 FPM to ~600 FPM min)



Contact UNITEC for information on the 12-in. Samson governor (3/8" rope) and deflector stand to replace many early flyball type governors. (reference: AAA20602B)



**NOTE:** Servicing flyball governors more and more has become a business decision, which must take into account wear in related members which would not be resolved even by replacing some of the simpler common replacement parts or even the more expensive components. Generally speaking, if the governor has been shown to not operate properly due to wear of the governor bevel gears, spindle shaft, clutch gear wear or even wear in the pin bores in the cast base of the governor (each of these scenarios involves substantial part lead-time, cost, and labor often more than a complete new governor). UNITEC does supply new governor assemblies as follows: Samson 12 in. (3/8 in. rope, 200 FPM to 800 FPM), and JDA20610AAA 16.5 in. (1/2 in. rope, 7063E) type governors, as possible replacements for your flyball governor application.

Use the following unique features to distinguish EA/EAO governors from FA, FAO, FSAO governors:

#### EA/EAO:

- Usually used between 400 and 600 FPM and incorporate bronze sheave shaft sleeves
- Has a 2-piece spindle stand (split bevel gear housing area) and ball thrust bearing at both bottom and upper guide areas for spindle shaft

#### FA/FAO/FSAO:

- Usually used between ranges of speed 90 and 300 FPM (different for the three different governors)
- Poured Babbitt sheave shaft journals for both support of sheave and rope vertically as well as side thrust of sheave hub
- 1-piece spindle stand
- Split bronze upper spindle guide sleeve and either ball bearing or Babbitted lower spindle shaft retention means

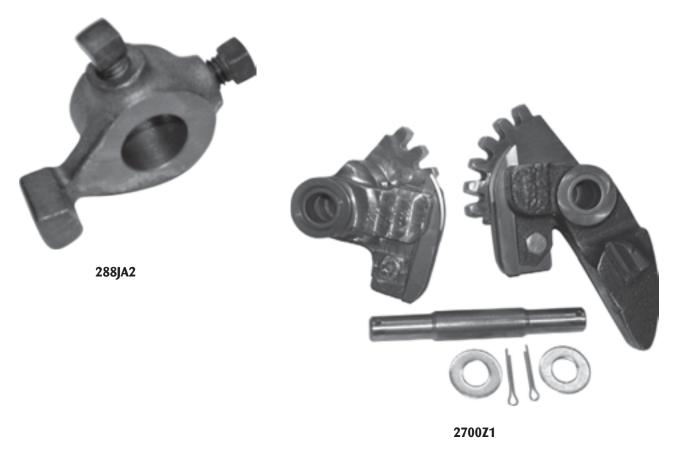
EA/EAO Governors (continued)



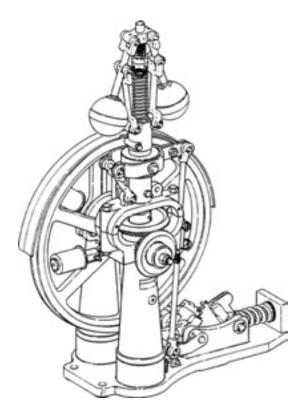
207AX1



380BM1



| Part No.   | Description  | Application |
|------------|--|-------------|
| 207AX1     | Bearing, Thrust, 2.4 in. OD                                | EA & EAO    |
| 615        | Sleeve, Spindle, Bronze, 3.12 in. Long                     | EA & EAO    |
| 616        | Sleeve, for Bottom of Spindle, 1.5" OD x ~1" Long          | EA & EAO    |
| 617        | Sleeve, Sheave Shaft, 2" OD x 4" Long                      | EA & EAO    |
| 619        | Sleeve, Short Stand, 2" OD x 2.9" Long                     | EA & EAO    |
| 127AD8     | Washer, Spring Adjusting, 2" OD x .15" Thick               | EA & EAO    |
| 127VB8     | Washer, Spring Adjusting, 2" OD x .03" Thick               | EA & EAO    |
| 380BM1     | Insert, Jaw, Cast Iron ( for late jaws)                    | EA & EAO    |
| 435Z2      | Fitting, Lubrication                                       | EA & EAO    |
| 90DB4      | Spring, Latch Lever, 1.1" Long x 7/16" ID                  | EA & EAO    |
| 90LC2      | Spring, Spindle, 4.5" Long                                 | EA & EAO    |
| 288JA2     | Lever, Switch Operating, 0.78" ID, w/Two Set Screw Holes   | EA & EAO    |
| 267B1      | Sheave, 17-3/8" Overall Dia. x 1.5" ID                     | EA & EAO    |
| 495AM2     | Assembly, Shaft & Sheave, 11-3/4" Long w/267B1 Sheave      | EA & EAO    |
| 340R14     | Collar, Spindle ,1-3/4" OD x ~1-5/16" ID                   | EA & EAO    |
| 2700Z1     | Jaw Set, Rope Clutch Gear, Each w/380BM1 Insert & Bushings | EA & EAO    |
| AAA6098NR1 | Switch, Tripper Type (manual reset) SPB                    | EA & EAO    |



FA, FAO, FSAO, Flyball Governors (general range: 90 FPM to 300 FPM)



612



620



307AL1



Use the following unique features to distinguish EA/EAO governors from FA, FAO, FSAO governors:

#### EA/EAO:

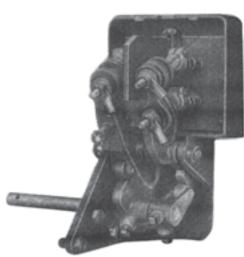
- Usually used between 400 and 600 FPM and incorporate bronze sheave shaft sleeves
- Has a 2-piece spindle stand (split bevel gear housing area) and ball thrust bearing at both bottom and upper guide areas for spindle shaft

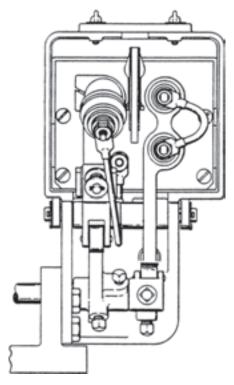
#### FA/FAO/FSAO:

- Usually used between ranges of speed 90 and 300 FPM (different for the three different governors)
- Poured Babbitt sheave shaft journals for both support of sheave and rope vertically as well as side thrust of sheave hub
- 1-piece spindle stand
- Split bronze upper spindle guide sleeve and either ball bearing or Babbitted lower spindle shaft retention means

| Part No.   | Description  | Application   |
|------------|--|---------------|
| 612        | Bushing Set, Split, Bronze, for Spindle                    | FA, FAO, FSAO |
| 620        | Sleeve, Cast Iron, for Spindle                             | FA, FAO, FSAO |
| 207Z7      | Bearing, for Base of Spindle Shaft                         | FA, FAO, FSAO |
| 307AL1     | Crank, for Long Clutch Gear                                | FA, FAO, FSAO |
| 288JA2     | Lever, Switch Operating, 0.78" ID, w/Two Set Screw Holes   | FA, FAO, FSAO |
| AAA6098NR1 | Switch, Tripper Type (manual reset) SPB                    | FA, FAO, FSAO |
| AAA6098NM  | Switch, Mechanical (see 6098 Switch Catalog for details)   | FA, FAO, FSAO |
| 651        | Screw, 3/8 in., for Split Bushing Retaining                | FA, FAO, FSAO |
| 90DB4      | Spring, Latch Lever, 1.1" Long x 7/16" ID                  | FA, FAO, FSAO |
| 90LC2      | Spring, Spindle, 4.5 <sup>"</sup> Long                     | FA            |
| 380BM1     | Insert, Jaw, Cast Iron, for Late Jaws                      | FA, FAO, FSAO |
| 2700Z1     | Jaw Set, Rope Clutch Gear, Each w/380BM1 Insert & Bushings | FA, FAO, FSAO |

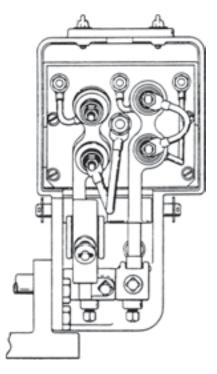
**Overspeed Switches Flyball Governors** 





**O-1 Governor Switch on DC Application** 





O Governor Switch on 2/S AC Geared Application

**NOTE:** Type 'O' governor switches were used on 2-speed AC geared applications and incorporated an overspeed switch as well as a normally open speed limiting switch. Type O-1 governor switches were applied on DC applications.

| Part No. | Description  | Application               |
|----------|--|---------------------------|
| REF13433 | Bushing Kit  | O & O-1 Governor Switches |
| 129912   | Assembly, Copper Contact & Insulators Kit, 7/8" Dia. | O & O-1 Governor Switches |
| 121992   | Contact, Carbon, 3/4" Dia.x 3/4" L                   | O & O-1 Governor Switches |
| 129456   | Distance Piece Kit, Brass, ~3.5 <sup>"</sup> L       | 0 & O-1 Governor Switches |
| 90BB3    | Spring   | O-1 Governor Switches     |



#### **Overspeed Switches Flyball Governor (continued)**

| Part No. | Description  | Application           |
|----------|--|-----------------------|
| 1207     | Contact, Carbon, 3/4" Dia. x 3/4" L                    | O-1 Governor Switches |
| 105936   | Holder, Carbon Contact, for 1207                       | O-1 Governor Switches |
| 106580   | Assembly, Copper Contact & Insulators Kit, 1-3/4" Dia. | O-1 Governor Switches |
| 129FA1   | Washer, Insulative, 1-1/4" OD w/C'bore                 | O Governor Switch     |



1207



105936



| Part No. | Description                          | Application            |
|----------|--------------------------------------|------------------------|
| 1338     | Contact, Copper Finger               | Type K Governor Switch |
| 12170    | Assembly, Contact Holder             | Type K Governor Switch |
| 12171    | Assembly, Contact Holder             | Type K Governor Switch |
| 90AB2    | Spring, Compression, ~5/16" x 1/2" L | Type K Governor Switch |



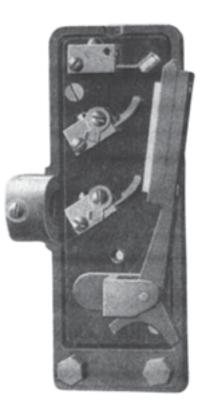
1338



12170



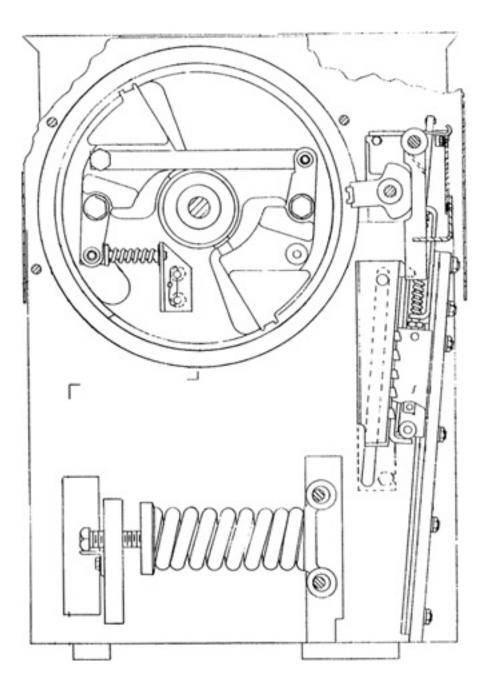




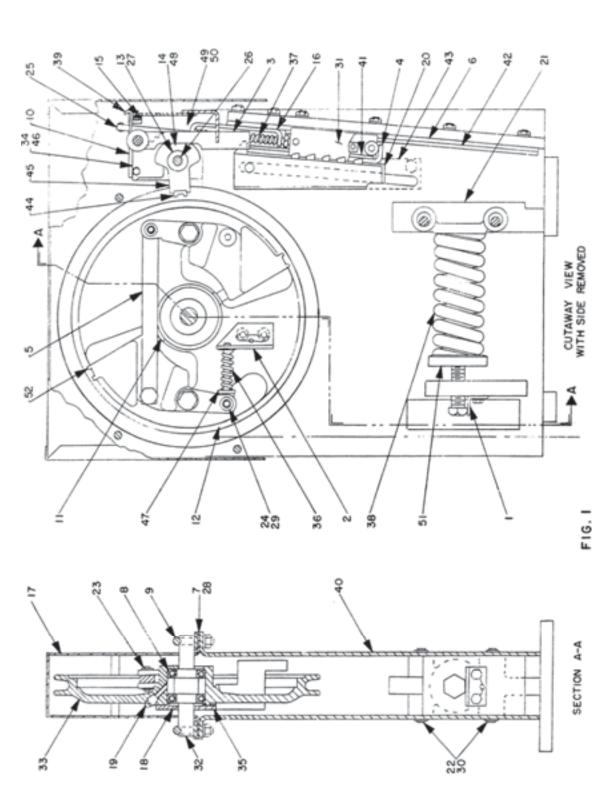
**K Governor Switch** 

# Early 7063A (produced ~ 1960–65) with Sliding Jaw

Contact UNITEC for spare parts support.



Wire Rope & Governors

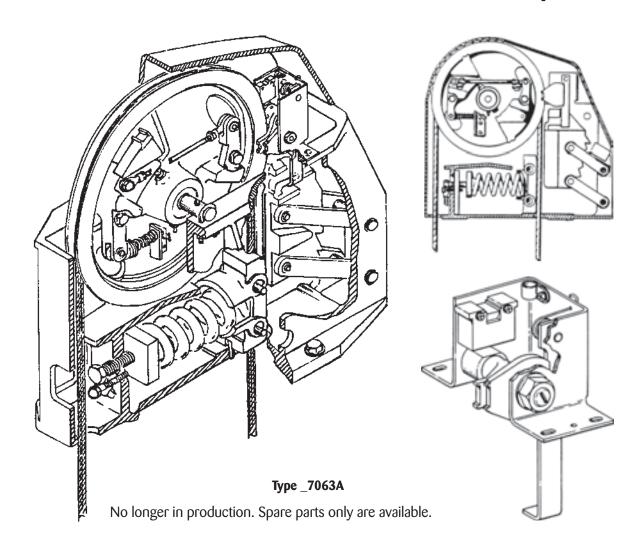


Contact UNITEC for spare parts support. (Numbers are for reference when speaking to a UNITEC rep only; they do not correspond to listings in this catalog.)

<u>63</u>

Wire Rope & Governors

# A, B7063A 12-in. Sheave Governor with Aluminum Sloped Cover

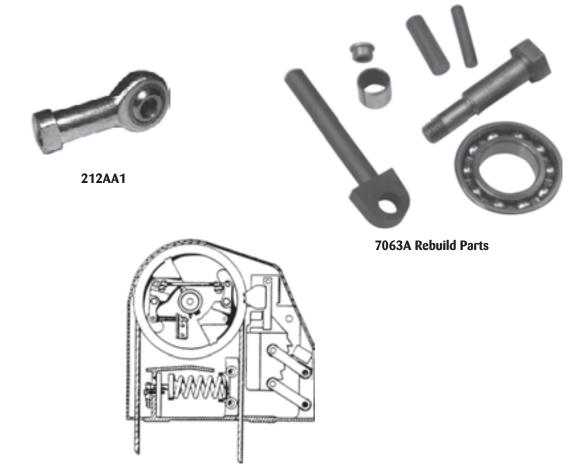


All 12 in. 7063A type governors shown in illustrations are no longer in production. Spare parts only are available.

| Part No.  | Description   |
|-----------|---|
| TBB20602C | Samson governor assemblies (pages 78–79) for complete governor replacements for the |
|           | 7063A type governor.  |

|                 | •   | •           |
|-----------------|---|-------------|
| Part No.        | Description   | Application |
| 212AA1          | Rod End (2 per governor used)   | A, B7063A   |
| 59BL2           | * Bolt, Weight Pivot (2 per governor used)                                    | A, B7063A   |
| 335AB2          | * Bushing (at 59BL2) (2 per governor used)                                    | A, B7063A   |
| 335H39          | * Bushing (2 per governor used)   | A, B7063A   |
| 77JP5           | * Pin, w/Retaining Ring Grooves   | A, B7063A   |
| 77JP14          | * Pin, w/Retaining Ring Grooves (2 per governor used),<br>Weight Relating Rod | A, B7063A   |
| 79BP1           | * Spring Guide, Plastic, for Weight Deflection                                | A, B7063A   |
| 207Z49          | * Bearing, Sheave (2 per governor used)                                       | A, B7063A   |
| included in the | 7063A rebuild parts illustration  |             |

| A, B7063A 12-inch Sheave Governor with Aluminum Sloped Cover | (continued) |
|--|-------------|
|--|-------------|



Parts Shown for This Governor

| Part No. | Description   | Application |
|----------|---|-------------|
| 177AR1   | Switch, Jaw, for CWT Governors                      | A, B7063A   |
| A398AD1  | Jaw, Stationary                                     | A, B7063A   |
| 398AR1   | Jaw, Dropping (used w/8-5/8″ long links)            | A, B7063A   |
| 398AR2   | Jaw + Link Set (used w/7-1/8″ long links)           | A, B7063A   |
| 430TA53  | Link, Jaw, 4 Per Governor Used                      | A, B7063A   |
| 7035A116 | Switch, Tripper, 1NC Contact Set                    | A, B7063A   |
| A7063B   | Tripper Assembly (Contact UNITEC for special order) | A, B7063A   |



A398AD1



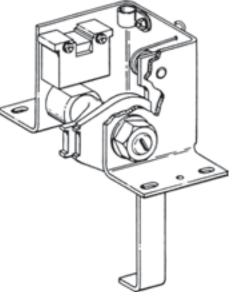
177AR1



7035A116



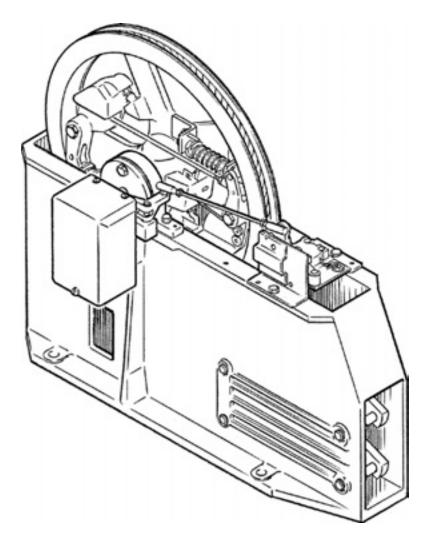
398AR1



A7063B Tripper Assembly

Parts Shown for This Governor

# A, B, C7063E 16-in. Sheave Governor with Aluminum Sloped Cover

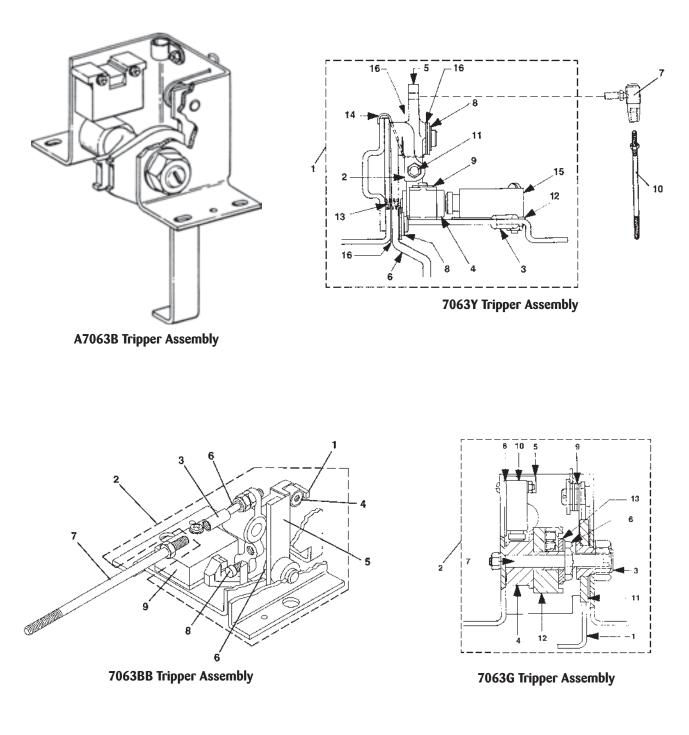


Type \_7063E 16-in. Governor Shown w/o Cover, RH Shown

| Part No.                      | Description   | Application                           |  |
|-------------------------------|---|---------------------------------------|--|
| JDA20610AAA1-500-<br>ANSIETS  | Governor, LH, 500 FPM, w/2-Step Slowdown Switch                             | Latest version<br>replacement for all |  |
| JDA20610AAA2-500-<br>ANSI2STP | Governor, RH, 500 FPM, w/2-Step Slowdown Switch                             | Latest version replacement for all    |  |
| NOTE: For contract speed of   | NOTE: For contract speed other than 500 FPM, contact UNITEC for assistance. |                                       |  |

#### Type \_7063E 16-inch Sheave Governor with Aluminum Sloped Cover (continued)

NOTE: Identify which tripper you have and contact UNITEC for spare parts support.

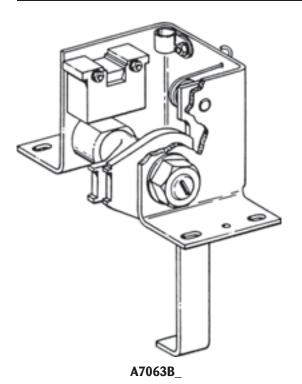


0

-

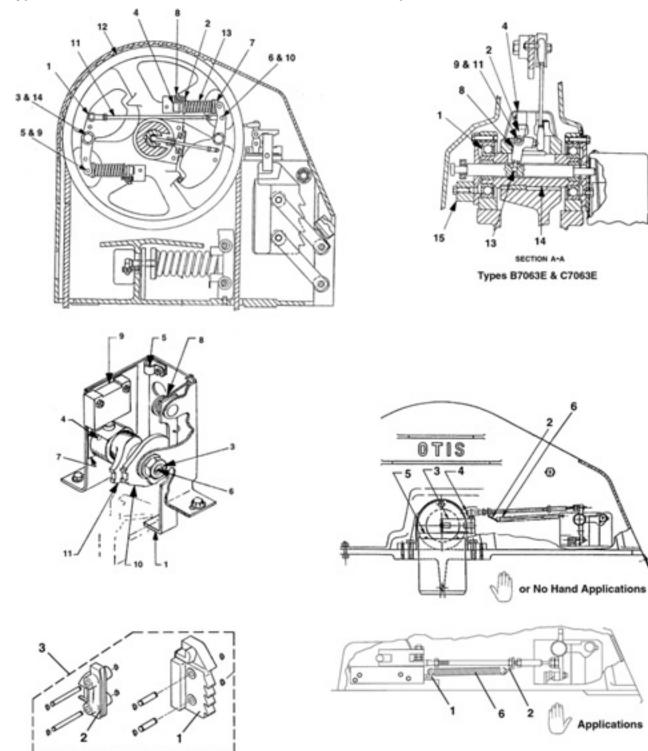
7063BB1

| Part No. | Description                               | Application    |
|----------|---|----------------|
| A7063B_  | Tripper Assembly (early vintage pre-1967) |                |
| 7063BB1  | Tripper Assembly (1972-2000)              | 7063BB, C7063E |
| 7035A106 | Switch, Cam Type, Norm Open S. Making     | 7063BB, C7063E |





7035A106

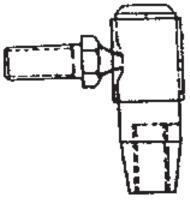


Type \_7063E 16-inch Sheave Governor with Aluminum Sloped Cover (continued)

Parts for Type \_7063E Governor (Numbers are for reference when speaking to a UNITEC rep only; they do not correspond to listings in this catalog.)

Wire Rope & Governors

| Part No. | Description  | Application    |
|----------|--|----------------|
| AAA708A1 | Ball Joint, Rod End (at tripper), for 7063BB1        | 7063BB, C7063E |
| 207BM1   | Roller, Tripper, for 7063BB1                         | 7063BB, C7063E |
| 307AY2   | Swivel, Rod End, 10-32, Mount at Side Fork Bellcrank | 7063Y, B7063E  |
| 7035A116 | Switch, Pushbutton, S. Making                        | 7063Y, B7063E  |
| 327JG1   | Cam, Governor Tripper, for 7063Y, 1967–72            | 7063Y, B7063E  |
| 90LA5    | Spring, for 327JG Cam Actuation                      | 7063Y, B7063E  |
|          |  |                |



307AY2



7035A116



71

| Part No. | Description  |  |
|----------|--|--|
| A7063J5  | Switch, 1 M, 2 B, Terminal Motion Overspeed                          |  |
| A7063J6  | Switch, 1 M, 4 B, Terminal Motion Overspeed                          |  |
| 307AY1   | Swivel, Rod End, 10-32, for Short Bellcrank Actuating Rod at Plunger |  |
| 212AA1   | Rod End (2 per governor used), Main Flyweight Interconnecting Rod    |  |
| 59BL2    | Bolt, Weight Pivot (2 per governor used)                             |  |
| 335AB2   | Bushing (at 59BL2, 2 per governor used) for Flyweight                |  |
| 307AW1   | Bell Crank, Forked (B7063E vintage)                                  |  |
| 307BC1   | Bell Crank, Forked (C7063E vintage)                                  |  |
|          |  |  |

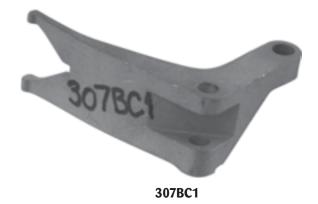
#### Type \_7063E 16-inch Sheave Governor with Aluminum Sloped Cover (continued)



212AA1

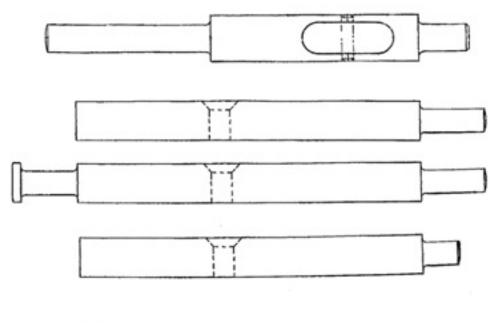


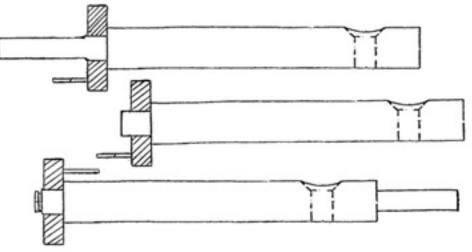
307AW1



A7063J5

| Part No. | Description   |  |
|----------|---|--|
| 445BC3   | Plunger, Steel (pre-1967 A7063E)                      |  |
| 445BD1   | Plunger, 7-1/4 <sup>"</sup> Long                      |  |
| 445BD2   | Plunger, 7-9/16" Long                                 |  |
| 445BD3   | Plunger, 6-9/16" Long                                 |  |
| 445BT4   | Plunger w/Bearing, 7.46" Long                         |  |
| 445BT5   | Plunger w/Bearing, 6.38 <sup>"</sup> Long             |  |
| 445BT6   | Plunger w/Bearing, 7.72 <sup>°</sup> Long             |  |
|          | Springs for Weights (provide UNITEC w/contract speed) |  |

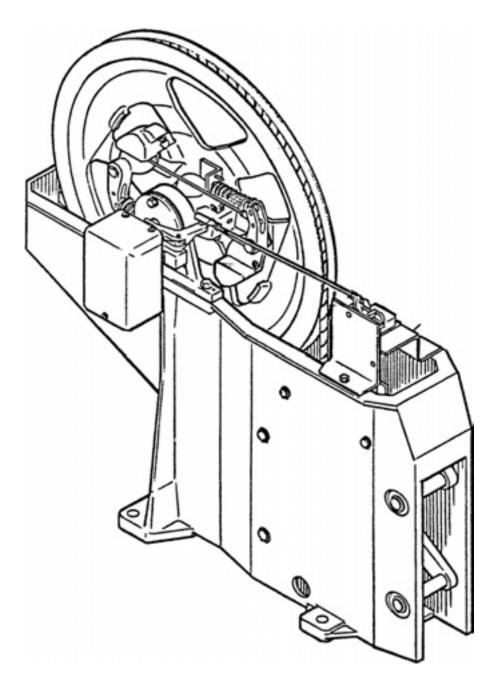




# A7063F 24-in. Sheave Governor with Aluminum Sloped Cover

**NOTE:** A7063F 24-inch diameter sheave with aluminum sloped cover is generally used for higher speed (1000 FPM +) and higher rise applications. Contact UNITEC for spare parts support.

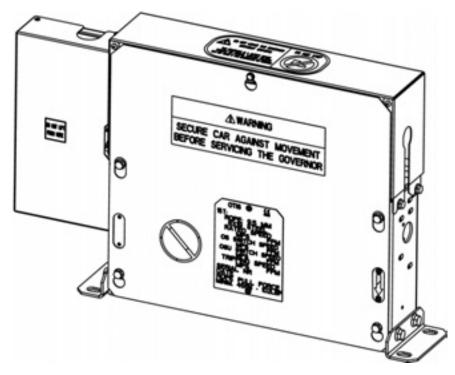
Later models are Japanese made and carry identity  $J^{**}20621AAA$  and can still be special ordered in speed ranges from 1000 FPM up to 1600 FPM.



# Apollo Governors 12-in. Sheave

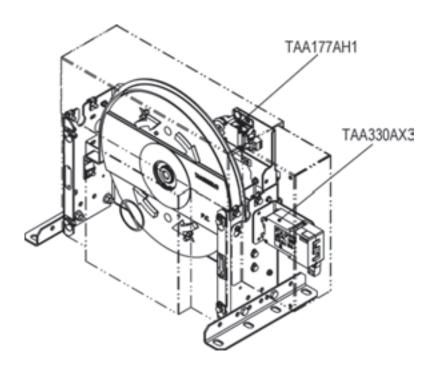
**For Gen2 application:** please provide contract speed and Otis sales number in order to specify correct replacement governor.

| Part No.    | Description  | Application         |
|-------------|--|---------------------|
| TBA20602B23 | Complete Governor, 100/125 FPM, w/Overspeed Switch and w/Electrical Tripping | Depend Llydge IV/ME |
| TBA20602B24 | Complete Governor, 150 FPM, w/Overspeed Switch and w/Electrical Tripping     | Roped Hydro, LVME   |



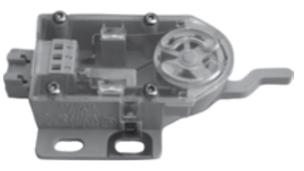
Apollo Governor T\*\*20602B\_

Apollo Governor12-inch Sheave (continued)





TAA177BJ2

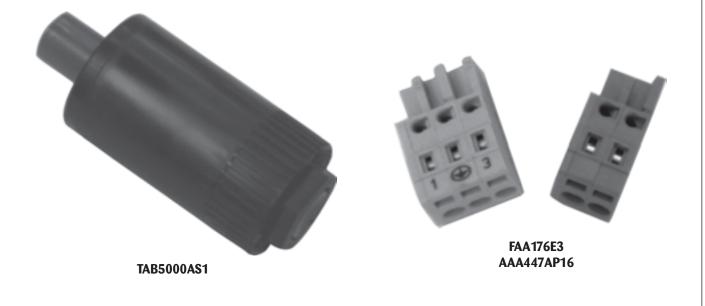


**TAA177AH1** 

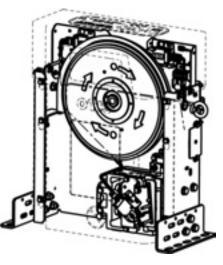
| Part No.   | Description   |
|------------|---|
| TAA177BJ2  | Switch, Button Type, for Resetting Device   |
| TAA177AH1  | Switch (two-way trip), 2NC Contacts, Trip Opens One Circuit (used up to 3 places on governor) |
| TAB5000AS1 | Manual Tripping Plunger Device  |
| TAA330AX3  | Remote Tripping Device  |
| FAA176E3   | Plug, Terminal (2-prong for tripper switch)   |
| AAA447AP16 | Plug, Terminal (3-prong for for remote tripping device)                                       |
|            |   |



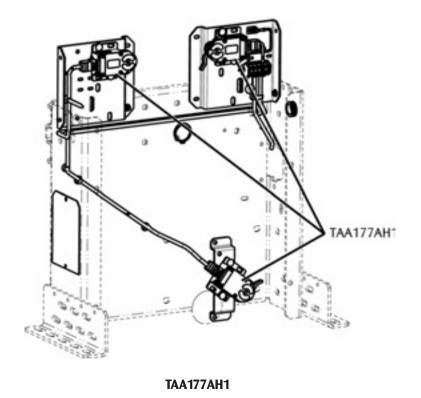
TAA330AX3



Samson Governors 12-in. Sheave

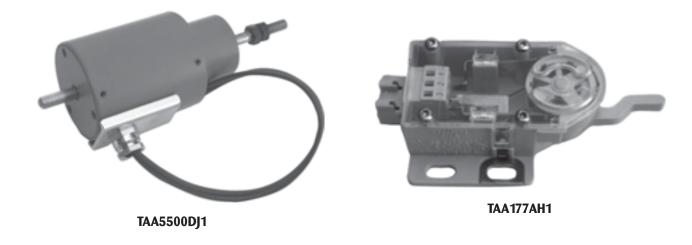


TBA20602C



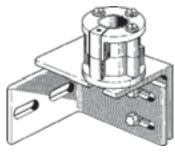
Wire Rope & Governors

| Part No.     | Description  |
|--------------|--|
| TBB20602C566 | Complete Car Governor, 12 <sup>°</sup> Dia. Sheave, 200 FPM<br>(935 lb. pull-thru force) w/Jaw Switch and 2 Overspeed Switches |
| TBB20602C567 | Complete Car Governor, 12 <sup>°</sup> Dia. Sheave, 250FPM<br>(935 lb. pull-thru force) w/Jaw Switch and 2 Overspeed Switches  |
| TBB20602C568 | Complete Car Governor, 12 <sup>°</sup> Dia. Sheave, 300 FPM<br>(935 lb. pull-thru force) w/jaw switch and 2 overspeed switches |
| TBB20602C550 | Complete Car Governor, 12 <sup>°</sup> Dia. Sheave, 350 FPM<br>(935 lb. pull-thru force) w/Jaw Switch and 2 Overspeed Switches |
| TBB20602C552 | Complete Car Governor, 12 <sup>°</sup> Dia. Sheave, 400 FPM<br>(935 lb. pull-thru force) w/Jaw Switch and 2 Overspeed Switches |
| TBB20602C554 | Complete Car Governor, 12 <sup>°</sup> Dia. Sheave, 450 FPM<br>(935 lb. pull-thru force) w/Jaw Switch and 2 Overspeed Switches |
| TBB20602C556 | Complete Car Governor, 12 <sup>°</sup> Dia. Sheave, 500 FPM<br>(935 lb. pull-thru force) w/Jaw Switch and 2 Overspeed Switches |
| TBB20602C569 | Complete Car Governor, 12 <sup>°</sup> Dia. Sheave, 600 FPM<br>(935 lb. pull-thru force) w/Jaw Switch and 2 Overspeed Switches |
| TBB20602C570 | Complete Car Governor, 12 <sup>°</sup> Dia. Sheave, 700 FPM<br>(935 lb. pull-thru force) w/Jaw Switch and 2 Overspeed Switches |
| TBB20602C571 | Complete Car Governor, 12 <sup>°</sup> Dia. Sheave, 800 FPM<br>(935 lb. pull-thru force) w/Jaw Switch and 2 Overspeed Switches |
| TAA5500DJ1   | Magnet Solenoid Electrical Tripping Device<br>(not used on the standard North American governors listed in this catalog)       |
| LX207Z505    | Bearing, Sheave  |
| TAA177AH1    | Switch, (two way trip), 2NC Contacts, Trip Opens One Circuit (used up to 3 places on governor)                                 |

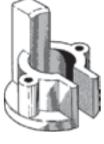


# **Miscellaneous Governors Related**

| Part No.   | Description                   |
|------------|-------------------------------|
| B6199T1    | Guide Assembly, Governor Rope |
| 385JW1     | Guide, Half, for B6199T1      |
| AAA102ACD2 | Data Plate, Wire Rope         |



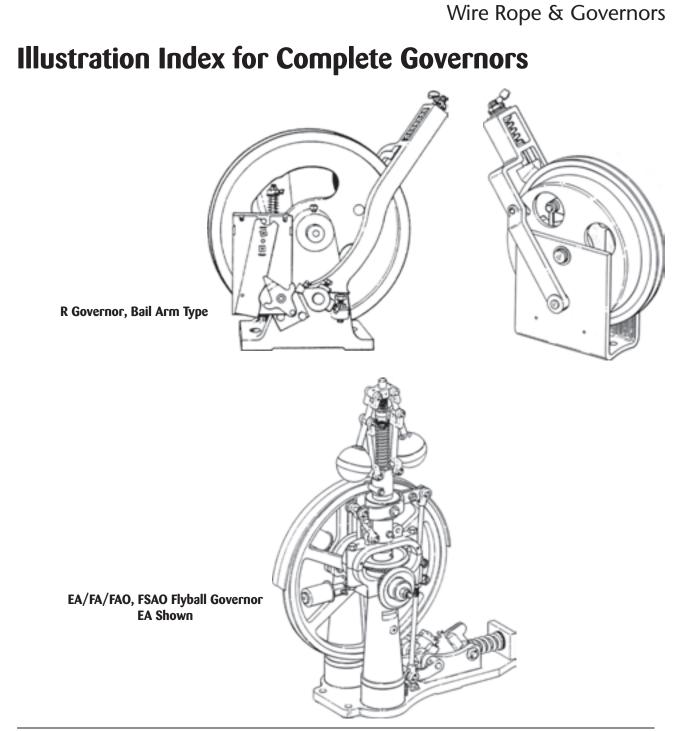
B6199T1



385JW1

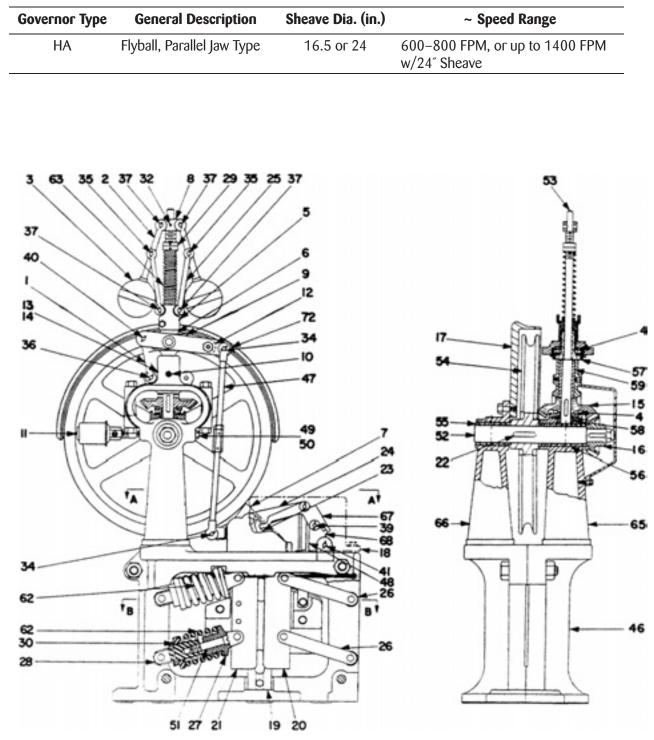
| O<br>ROPE MANUFACTURER   |
|--|
| KOFE MANOFACTORER  |
|  |
| ELEVATOR WIRE ROPE   |
| NON PREFORMED  NON PREFORMED  KENNING  KENNING |
| IRON ● 8X19S ●<br>E.H. STRENGTH ● 8X19W ●  |
| GOVERNOR GALVANIZED I  |
| COMPENSATING CORE CORE LANG LAY SYNTHETIC FIBER CORE   |
| NOMINAL STRENGTH (LBS)   |
| 1/4" 3,600 5/8" 23,000<br>5/16" 5,600 5/8" 27,200<br>3/8" 4,200 5/8" 31,600  |
| 3/8" 5,000 11/16" 13,400<br>3/8" 8,200 11/16" 27,000   |
| 7/16" 5.600 11/16" 38.200  |
| 7/16" 13,500 3/4" 32,000<br>1/2" 7,200 3/4" 38,900   |
|  |
|  |
| 9/16" 18,500 7/8" 21,400<br>9/16" 22,100 7/8" 42,000   |
| 5/8" 11,200 7/8" 52,600 5/8" 12,800 7/8" 61,200  |
| OTHER NOMINAL<br>DIAMETER B.S. (LBS.)  |
|  |
| ROPE TO BE LUBRICATED PER<br>MANUFACTURES AND/OR INSTALLATION<br>COMPANIES RECOMMENDATIONS.  |
| ROPES INSTALLED BY:<br>(COMPANY NAME AND DATE)   |
|  |
| DATE ROPES<br>FIRST SHORTENED  |
|  |
| MAY     JUNE     JULY     AUG.       SEPT.●     OCT.     NOV.     DEC.   |
| 2 2011 ● 2012 ● 2013 ●<br>2014 ● 2015 ● 2016 ● 2017 ●  |
|  |
|  |

AAA102ACD2



| <b>Governor Туре</b> | General Description                 | Sheave Dia.<br>(in.) | ~ Speed Range  |  |
|----------------------|-------------------------------------|----------------------|--|--|
| R                    | Uni-Directional Trip, Bail Arm Type | 12                   | Up to 200 FPM  |  |
|                      |                                     |                      | 400-700 FPM  |  |
| EA                   | Flyball Type w/o Switch             | 16.5                 | ( <b>NOTE:</b> 700 FPM for EA or EAO was special authorization.) |  |
| FA                   | Flyball Type w/o Switch             | 16.5                 | 150 FPM  |  |
| FAO                  | Flyball Type w/Switch               | 16.5                 | 225-300 FPM  |  |
| FSAO                 | Flyball Type w/Switch               | 16.5                 | 90-200FPM  |  |
|                      |                                     |                      |  |  |

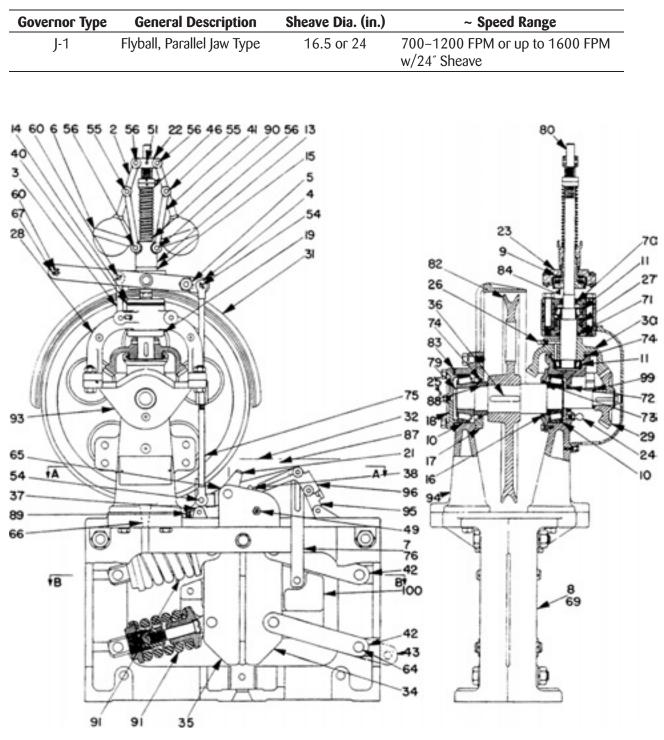
#### Illustration Index (continued)



HA Parallel Jaw Flyball Governor

(Numbers are for reference when speaking to a UNITEC rep only; they do not correspond to listings in this catalog.)

Wire Rope & Governors

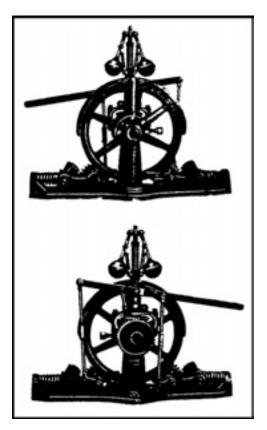


J-1 Parallel Jaw Flyball Governor

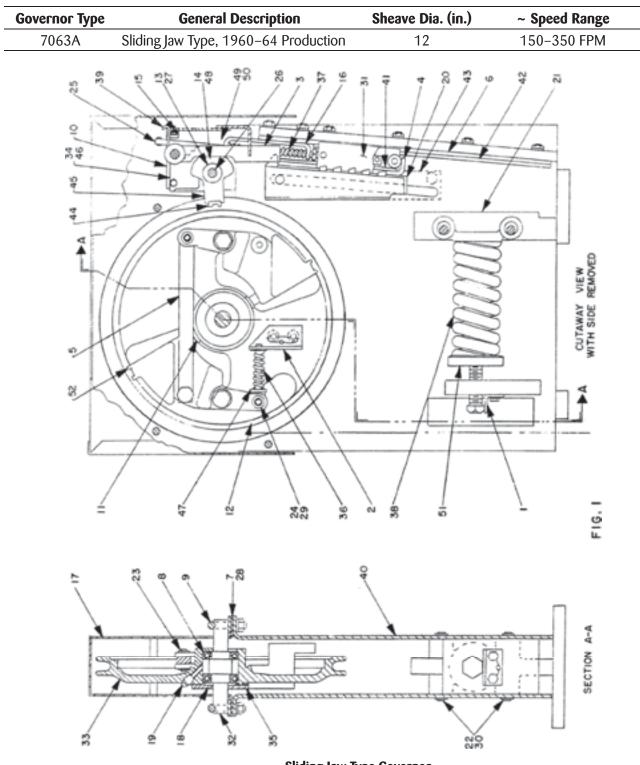
(Numbers are for reference when speaking to a UNITEC rep only; they do not correspond to listings in this catalog.)

#### Illustration Index (continued)

| <b>Governor Туре</b> | General Description                                   | Sheave Dia. (in.) |
|----------------------|---|-------------------|
| E-Single Acting      | Flyball, Early  | 16.5              |
| E-Double Acting      | Flyball, Dual Lift Rod & Lever Arm (dual clutch jaws) | 16.5              |
| F                    | Flyball, Early  | 16.5              |
| Р                    | Flyball, Early  | 8.38 OD           |



E-Double Acting Flyball Governor



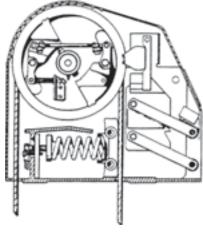
Sliding Jaw Type Governor

(Numbers are for reference when speaking to a UNITEC rep only; they do not correspond to listings in this catalog.)

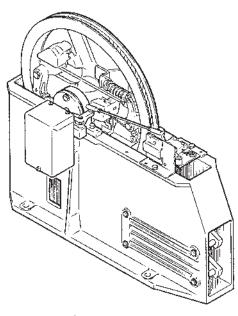
85

#### Illustration Index (continued)

| <b>Governor Туре</b> | General Description  | Sheave Dia. (in.) | ~ Speed Range |
|----------------------|--|-------------------|---------------|
| A & B7063A Type      | Aluminum Cased Slope Back Cover  | 12                | 150-350 FPM   |
| *7063Е Туре          | Aluminum Cased Slope Back Cover  | 16.5              | 150-1200 FPM  |
| J**20610AAA          | Aluminum Cased Slope Back Cover<br>(same as B7063E except Japanese<br>made ~ after 2001) | 16.5              | 150-1200 FPM  |

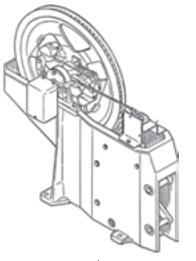


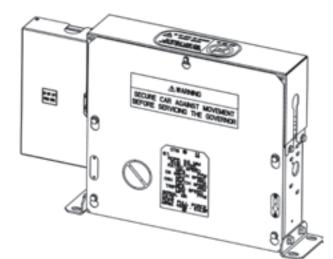
B7063A Governor



\*7063E Governor J\*\*20610AAA Governor RH Shown, w/o Cover

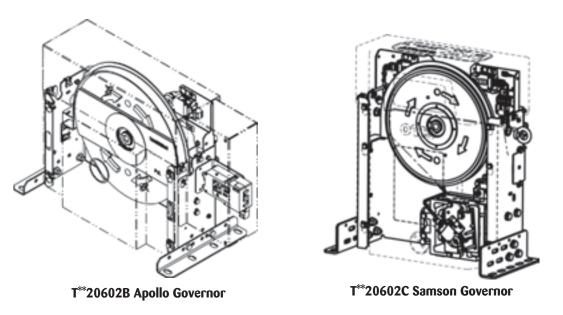
| Governor Type | General Description   | Sheave Dia. (in.) | ~ Speed Range |
|---------------|---|-------------------|---------------|
| *7063F Туре   | Aluminum Cased (same as A7063F except<br>Japanese made ~ after 2001)                        | 24                | 1000-1800 FPM |
| J**20621AAA   | Aluminum Cased (same as A7063F except<br>Japanese made ~ after 2001)                        | 24                | 1000-1800 FPM |
| T**20602B     | Apollo Governor (first used on LVME <sup>*</sup> Otis roped hydro & then on Gen2 equipment) | 12                | 100–125 FPM * |
| T**20602C     | Samson Governor (used to replace the 7063A type governor)                                   | 12                | 200-800 FPM   |





\*7063F J\*\*20621AAA Aluminum Cased Governor, RH Shown, w/o Cover

T\*\*20602B Apollo Governor



# Appendix: Physical Characteristics of 6-Strand and 8-Strand Wire Rope

**NOTE:** UNITEC offers wire rope with internal wire rope core (IWRC). For severe loading conditions, please be careful of sheave hardness when considering this option and contact UNITEC for help.





|                | 6-Strand          |                                | 8-Strand                        |                                |                                 |
|----------------|-------------------|--------------------------------|---------------------------------|--------------------------------|---------------------------------|
|                | Diameter<br>(in.) | Nominal Breaking<br>Load (lb.) | Approximate<br>Weight (lb./ft.) | Nominal Breaking<br>Load (lb.) | Approximate<br>Weight (lb./ft.) |
| Iron (L)       | 3/8               | 5,000                          | 0.23                            |                                |                                 |
|                | 1/2               | 8,400                          | 0.40                            |                                |                                 |
|                | 5/8               | 12,800                         | 0.63                            | 11,200                         | 0.57                            |
|                | 11/16             |                                |                                 | 13,400                         | 0.69                            |
|                | 3/4               | 18,200                         | 0.90                            |                                |                                 |
|                | 7/8               | 24,800                         | 1.23                            |                                |                                 |
|                | 1                 | 32,000                         | 1.60                            |                                |                                 |
| Traction Steel | 1/4               |                                |                                 | 3,600                          | 0.09                            |
| (M)            | 5/16              |                                |                                 | 5,600                          | 0.14                            |
|                | 3/8               | 8,200                          | 0.23                            | 8,200                          | 0.20                            |
|                | 7/16              | 11,000                         | 0.31                            | 11,000                         | 0.28                            |
|                | 1/2               | 14,500                         | 0.40                            | 14,500                         | 0.36                            |
|                | 9/16              | 18,500                         | 0.51                            | 18,500                         | 0.46                            |
|                | 5/8               | 23,000                         | 0.63                            | 23,000                         | 0.57                            |
|                | 11/16             | 27,000                         | 0.76                            | 27,000                         | 0.69                            |
| -              | 3/4               | 32,000                         | 0.90                            | 32,000                         | 0.82                            |
| -              | 13/16             | 37,000                         | 1.06                            | 37,000                         | 0.96                            |
| -              | 7/8               | 42,000                         | 1.23                            | 42,000                         | 1.11                            |
| -              | 15/16             | 48,000                         | 1.41                            | 48,000                         | 1.27                            |

|  |                   | 6-Strand                       |                                 | 8-Strand                       |                                 |
|--|-------------------|--------------------------------|---------------------------------|--------------------------------|---------------------------------|
|  | Diameter<br>(in.) | Nominal Breaking<br>Load (lb.) | Approximate<br>Weight (lb./ft.) | Nominal Breaking<br>Load (lb.) | Approximate<br>Weight (lb./ft.) |
| Traction Steel<br>(M)                            | 1                 | 54,000                         | 1.60                            | 54,000                         | 1.45                            |
|  | 1-1/16            | 61,000                         | 1.81                            | 61,000                         | 1.64                            |
| Extra High<br>Strength<br>Traction Steel<br>(EH) | 1/2               | 20,400                         | 0.40                            | 17,500                         | 0.36                            |
|  | 5/8               | 31,600                         | 0.63                            | 27,200                         | 0.57                            |
|  | 11/16             | 38,200                         | 0.76                            | 32,800                         | 0.69                            |
|  | 3/4               | 45,200                         | 0.90                            | 38,900                         | 0.82                            |
|  | 13/16             | 52,900                         | 1.06                            | 46,000                         | 0.96                            |
|  | 7/8               | 61,200                         | 1.23                            | 52,600                         | 1.11                            |

**DUAL-TENSILE ROPE NOTE:** Within the 6M and 8M classes of rope, the dual tensile rope carries the same breaking strength as standard rope. Request dual tensile rope to help protect existing older softer sheaves.

89

|                          | Notes |  |
|--------------------------|-------|--|
|                          |       |  |
|                          |       |  |
|                          |       |  |
|                          |       |  |
|                          |       |  |
|                          |       |  |
|                          |       |  |
| ope<br>nors              |       |  |
| Wire Rope<br>& Governors |       |  |
| ≤ <sub>∛</sub>           |       |  |
|                          |       |  |
|                          |       |  |
|                          |       |  |
|                          |       |  |
|                          |       |  |
|                          |       |  |
|                          |       |  |