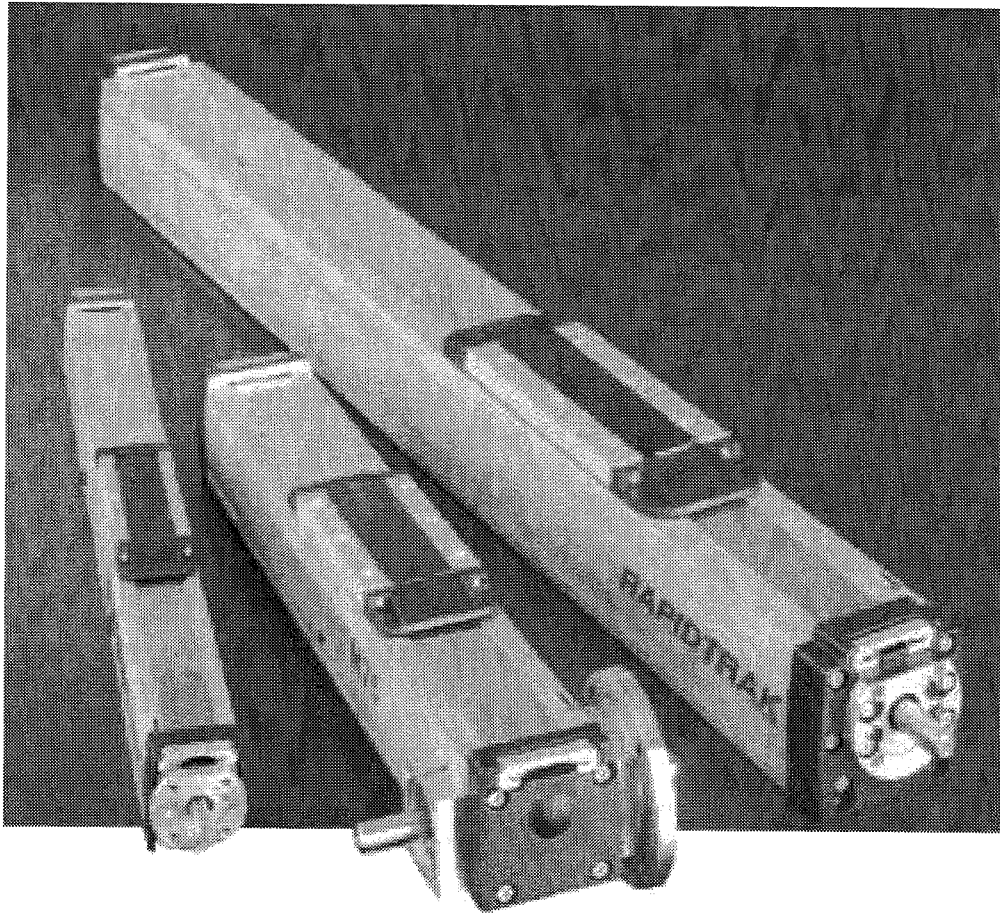


### *Rapidtrak M100, M75 and M55*



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## Section 1 Introduction

Rapidtrak M100, M75, and M55 are a range of linear rodless actuators in different sizes which share the same basic design. Most of the instructions in this manual are valid for M100, M75, and M55. It is clearly stated where the differences are important.

All sizes can be divided into three types - those that use a ball screw transmission, those that use a belt, and lastly those that are undriven (without a transmission). These three types can in turn be divided into those that use ball guides, and those that use prism guides (slide bearings) as bearings for the saddle. The saddle constitutes the moving part of the Rapidtrak. These basic types are available in a number of different configurations that can be studied in the type key on page 3.

In order to be able to use this manual properly, it is important to understand which size and type of Rapidtrak you have. Feel free to contact Thomson for clarification. When you do so, please give us the manufacturing serial number and the type designation of the Rapidtrak embossed in the drive end of your unit. (See Table 1)

### Important!

- Read through this manual before beginning installation or servicing, and follow all applicable directions in order to ensure a safe and proper job.
- In order to ensure a long life expectancy and reliable functionality, the Rapidtrak M100, M75, and M55 must be serviced according to the directions found in this manual. Spare parts should be by the same manufacturer, and of the same type as the original, or be among those approved in writing by Warner Linear. Never use parts which work improperly or seem damaged.
- If possible, never work with power, compressed air or hydraulics turned on. If the work must be performed with some of these turned on, another person must be positioned so that the power, compressed air or hydraulics can be turned off in the event of any mishap.

## Section 2 Type designation system

	T	F	07	K	20	7	-	A	00	X	XXX
US models .. T											
Ball guides .....		F									
Prism guides .....		G									
Profile size .... M100 .....			10								
..... M75 .....			07								
..... M55 .....			06								
Belt Drive .....				B							
Non Driven .....				N							
Ball screw + Ball Nut .....				K							
Screw Lead .....											
5mm .....											.05
10mm (2510) M100 .....											.10
25mm (2525) M100 .....											.25
50mm .....											.50
5.08mm (0605) M55 .....											.65
12.7mm (0702) M75 .....											.72
20 mm (1620) M55 or (2020) M75 .....											.20
Belt Pitch 105 mm (M55) .....											105
130 mm (M75) .....											130
176 mm (M100) .....											176
Tolerance class for ball screws .....				T7*							7
..... T9 .....											9
Hyphen .....								-			
A-saddle .....								A			
C-saddle .....								C			
Standard distance between saddles for single saddles .....											00
L for M100 (c/c distance between (2) C saddles in cm) .....											35 — 99
L for M75 (c/c distance between (2) C saddles in cm) .....											25 — 99
L for M55 (c/c distance between (2) C saddles in cm) .....											20 — 99
Without screw support .....											X
Single screw support .....											S
Double screw support .....											D
Special modified units .....											M
Length in cm (see measure L in figure 1) .....											050 — 999

\*T7 Tolerances only apply to the following screws: M55 - 1620, M75 - 2020

Table 1: Type designations

NOTE: Sometimes a place holder (\*) is used instead of a letter/digit in the designation. This means that the position in question does not matter for that instruction. Example: T\*10B

## Section 3 Installation

### 3.1 General installation data

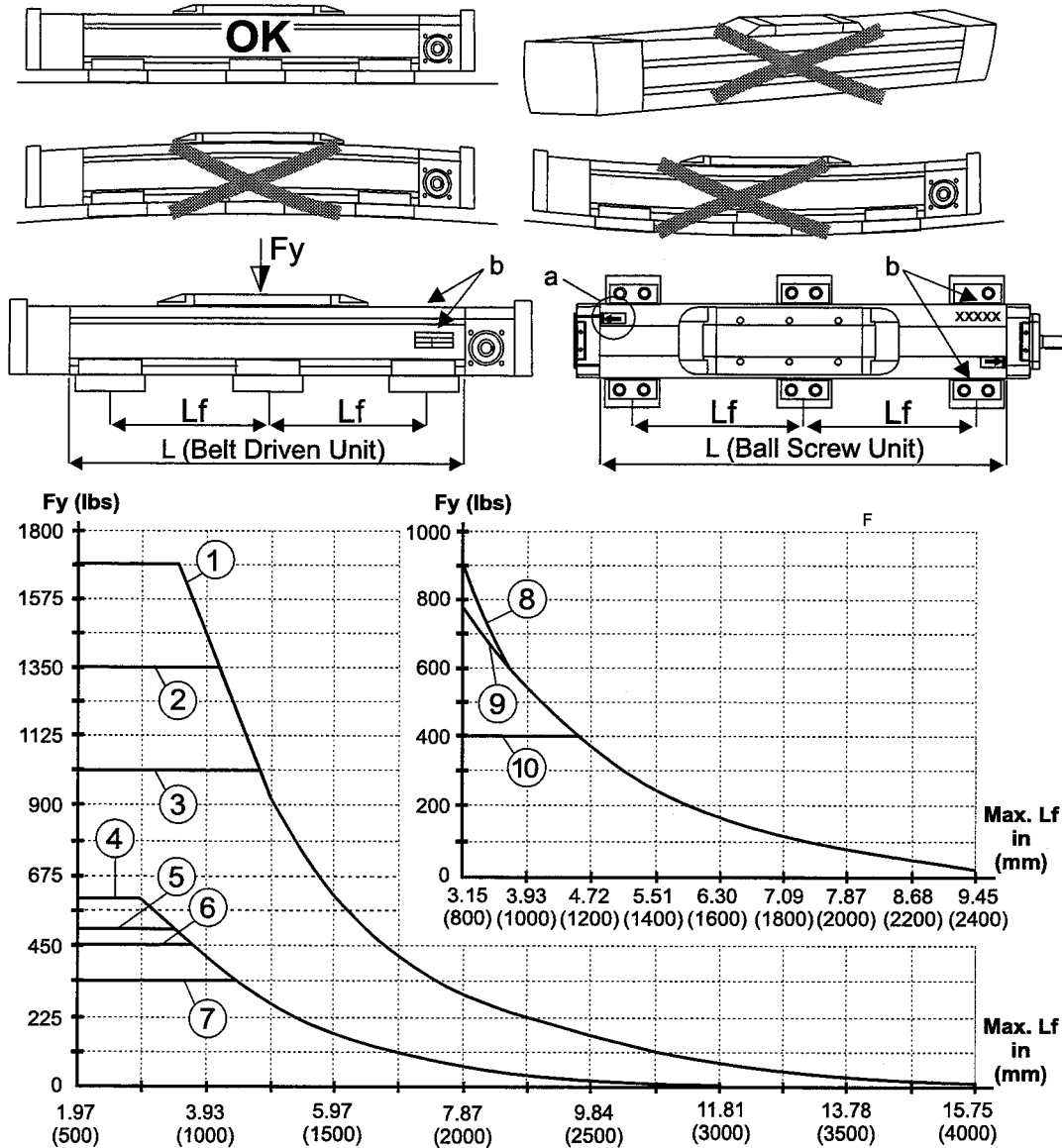


Figure 1: Mounting instructions

- |                               |                 |                  |
|-------------------------------|-----------------|------------------|
| 1. TF10K                      | 5. TG07B, TG07N | 9. TF06B         |
| 2. TF10B, TG10B, TF10N, TG10N | 6. TF07K        | 10. TG06K, TG06B |
| 3. TG10K                      | 7. TG07K        |                  |
| 4. TF07B, TF07N               | 8. TF06K        |                  |

Place the unit on the mounting surface. Shims are placed at the mounting point so that the unit keeps its shape, and is not bent or twisted in any direction. The distance between each mounting point must not exceed the maximum permissible mounting distance (Max Lf) for the maximum load being moved ( $F_y$ ) by the unit. After the mounting of a belt driven unit see point 4.6. Never run the saddle past the arrows (a) located on the top of the profile. When ordering spare parts, please state the manufacturing number and the model number embossed on the top of the profile (b.)  
 Note: This unit may be mounted upside down (feet up, saddle down).

### 3.2 Clamps with base plate M100/M75/M55

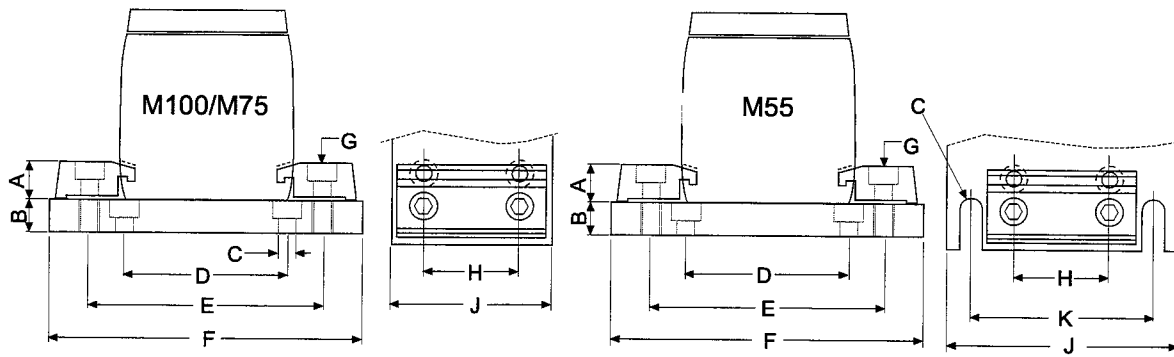


Figure 2: Clamps with base plate dimensions

Kit includes: (2) Bolts  
 (2) Clamps  
 (1) Bracket (base plate)

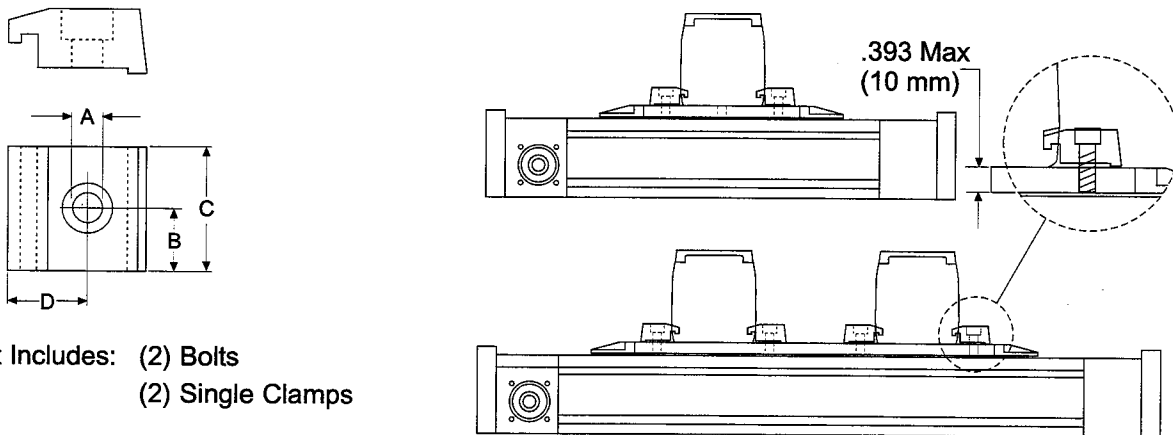
Dimensions in inches (mm)

Clamp type	Part number	A	B	C	D	E	F	G	H	J	K
M100	9600-174-005	.866 (22)	.787 (20)	7/16-14 -	3.937 (100)	5.591 (142)	7.480 (190)	M10	2.362 (60)	3.937 (100)	—
M75	9600-174-011	.591 (15)	.591 (15)	3/8-16	2.953 (75)	4.193 (106.5)	5.276 (134)	M8	2.362 (60)	3.150 (80)	—
M55	9600-174-012	.433 (11)	.394 (10)	1/4-20	— —	2.992 (76)	3.937 (100)	M5	1.614 (41)	3.543 (90)	2.756 (70)

Table 2: Clamps with base mount dimensions

### 3.3 Single clamps

Clamps may be purchased separately, if necessary. For long lengths, refer to page 4 to determine if additional supports are required.



Kit Includes: (2) Bolts  
 (2) Single Clamps

Dimensions in inches (mm)

Clamp type	Part number	A	B	C	D
M100	9600-264-002	.335 Dia. M10 (8.5) Dia. M10	.906 (23)	1.811 (46)	1.043 (26.5)
M75	9600-264-003	.335 Dia. M8 (8.5) Dia. M10	.591 (15)	.787 (30)	.689 (17.5)
M55	9600-264-004	.217 Dia. M5 (5.5) Dia. M5	.492 (12.5)	.984 (25)	.602 (15.3)

Table 3: Clamp dimensions

### 3.4 Connection to saddles

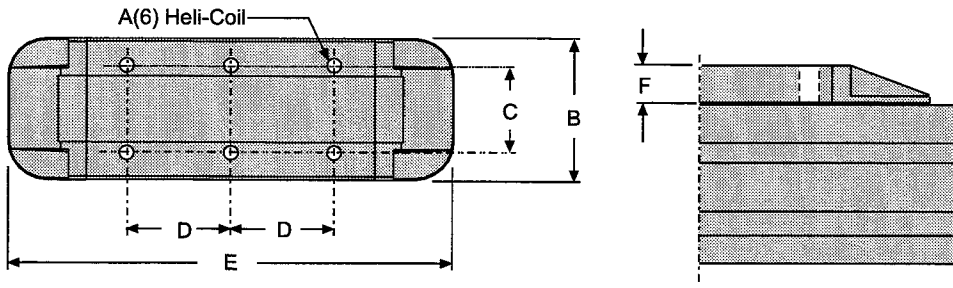


Figure 4: Hole pattern for saddles

Dimension in inches (mm)

Rapidtrak	A	B	C	D	E	F
M100	3/8-16	3.661	2.362	2.795	12.047	.591
	"	(93)	(60)	(71)	(306)	(15)
M75	5/16-18	2.992	2.362	2.087	10.000	.472
	"	(76)	(60)	(53)	(218)	(12)
M55	10-32	1.929	1.614	1.496	7.244	.354
	"	(49)	(41)	(38)	(184)	(9)
M55 (TG06B only)	10-32	1.929	1.614	1.496	9.213	.354
	"	(49)	(41)	(38)	(234)	(9)

Table 4: Saddle Dimensions

### 3.5 Installing the protective cover on belt models

- Kit Includes:
- (1) Cover
  - (2) Bolts
  - (2) Washers

Cover	
M100/M75	9600-288-001
M55	9600-288-002

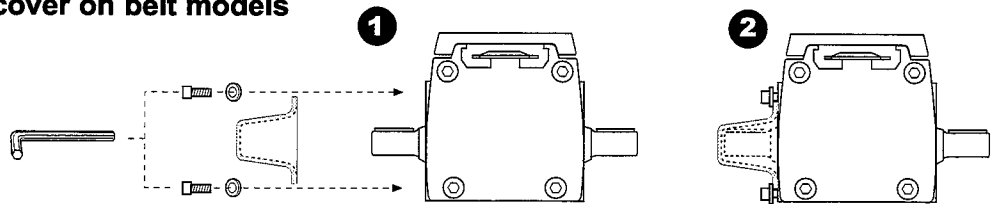


Figure 5: Installation of protective cover

### 3.6 Installation of adapter plate

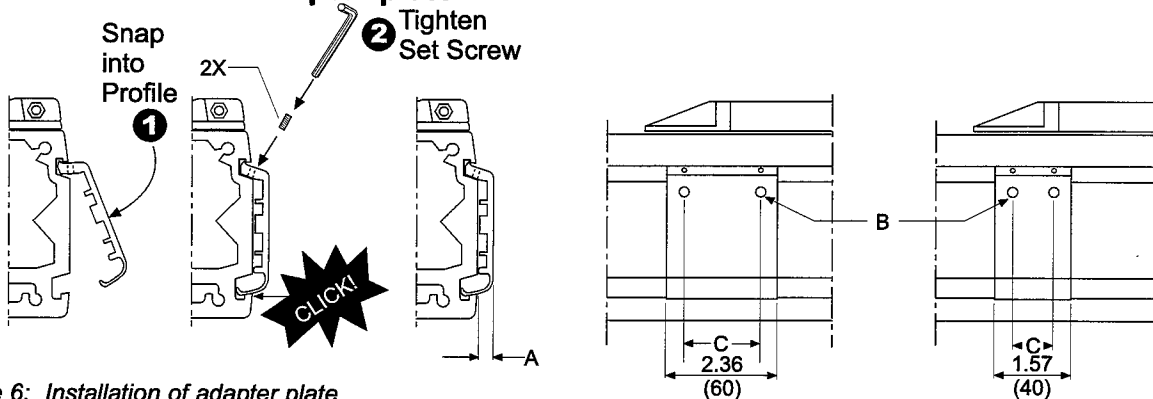


Figure 6: Installation of adapter plate

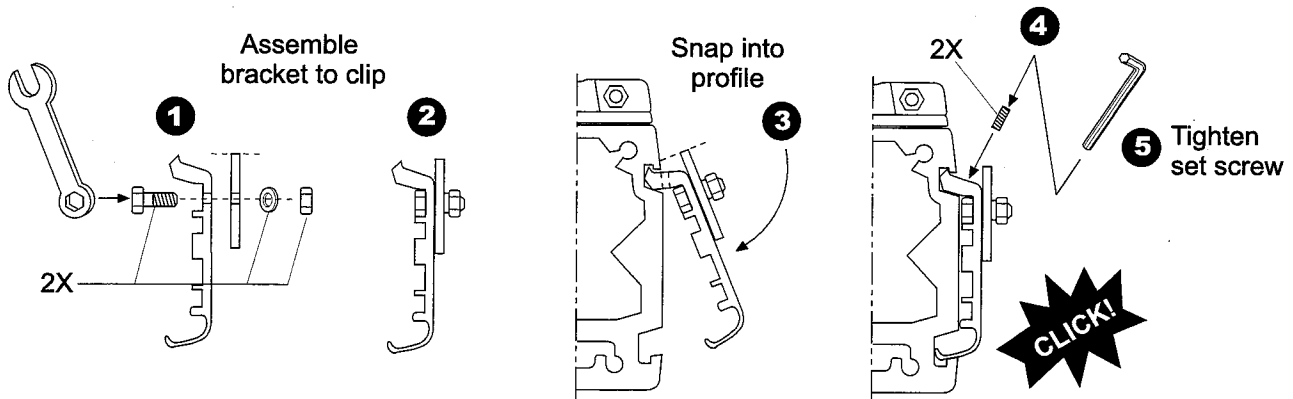
Dimensions in (mm)

Description	Width	A	B	C	Part Number
M100 adapter plate	60 mm	(9.5)	Ø7.5	(39)	312-337
M100 adapter plate	40 mm	(9.5)	Ø7.5	(26)	312-338
M75 adapter plate	60 mm	(9.5)	Ø7.5	(39)	312-745
M75 adapter plate	40 mm	(9.5)	Ø7.5	(26)	312-746
M55 adapter plate	60 mm	(7.0)	Ø6.5	(38)	313-423
M55 adapter plate	40 mm	(7.0)	Ø6.5	(20)	313-422

Table 5: Adapter plates

### 3.7 Brackets for sensors and limit switches

Note: Limit switches not provided. They must be ordered separately. (See Table 6)



(2) Sets of Limit Switch Brackets (Style A or E) supplied with each unit (see Table 6)

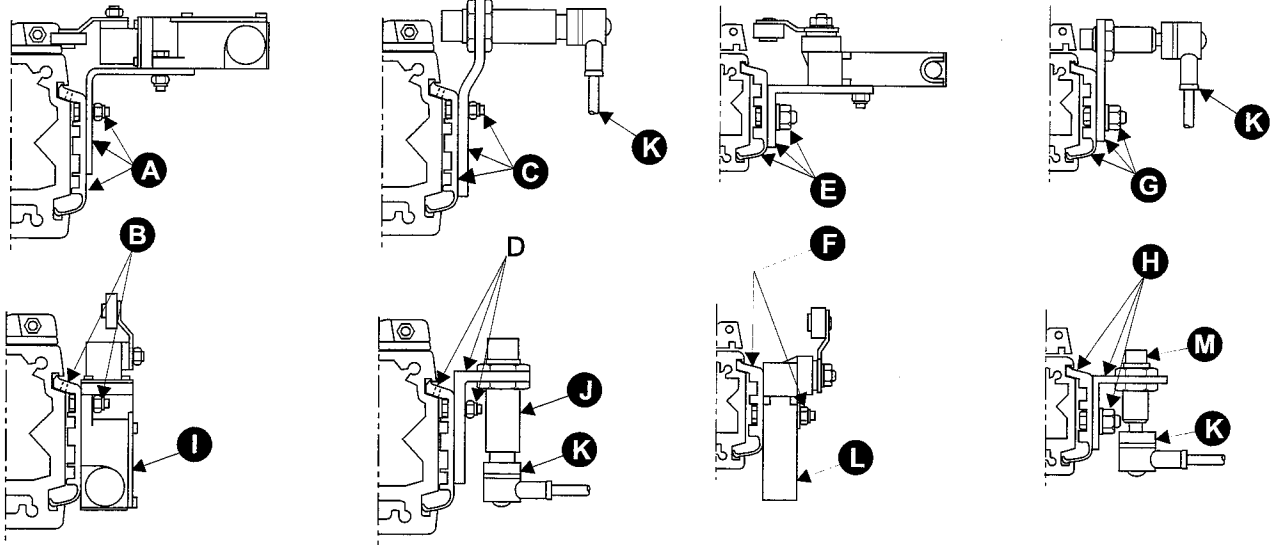


Figure 7: Installation of brackets (the figure is not to scale)

Figure	Description	Part Number
*A	M100 Limit Switch Bracket Kit	9600-831-011
B	M100 Limit Switch Bracket Kit	9600-831-013
C	M100 Sensor Bracket Kit for M18 sensors	9600-841-001
D	M100 Sensor Bracket Kit for M18 sensors	9600-841-003
*A	M75 Limit Switch Bracket Kit	9600-831-017
B	M75 Limit Switch Bracket Kit	9600-831-015
C	M75 Sensor Bracket Kit for M18 sensors	9600-841-007
D	M75 Sensor Bracket Kit for M18 sensors	9600-841-005
*E	M55 Limit Switch Bracket Kit	9600-831-018
F	M55 Limit Switch Bracket Kit	9600-831-016
G	M55 Sensor Bracket Kit for M12 sensors	9600-841-008
H	M55 Sensor Bracket Kit for M12 sensors	9600-841-006
I	Suitable limit switch for M100/M75 (not provided)	608-5185-012
J	Suitable inductive M18 sensor for M100/M75(not provided)	693-2906-004
K	Connector to M18 or M12 inductive sensor (not provided)	413-9100-280
L	Suitable limit switch for M55 (not provided)	608-6185-034
M	Suitable inductive M12 sensor for M55 (not provided)	693-2944-001

\* (2) Provided w/unit

Table 6: Brackets, limit switches, and sensors

### 3.8 Connection to the motor flange

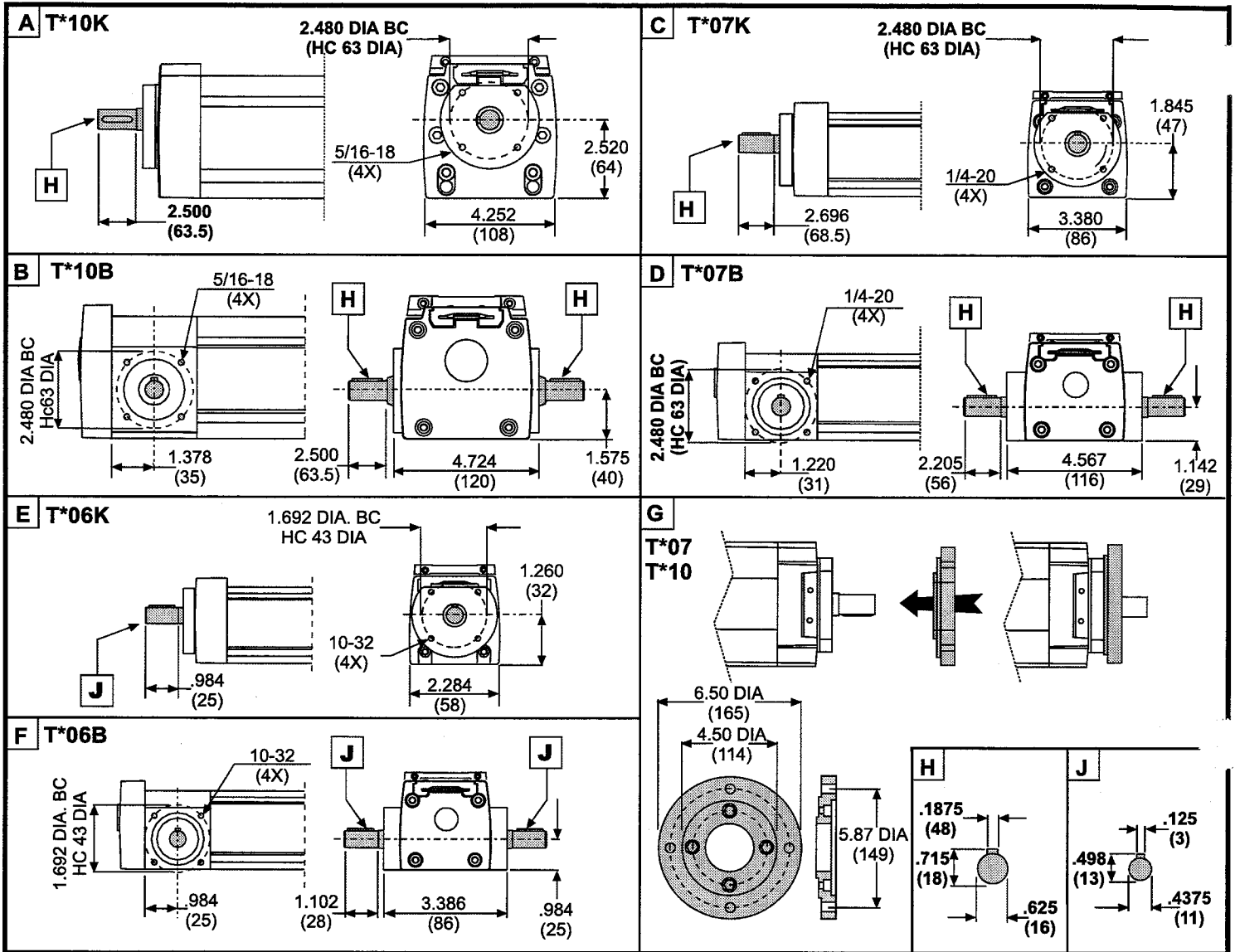


Figure 8: Connections to the motor flange

- A. TF/G10K journal always as in H.
- B. Standard configuration for all TF/G10B units, both journals as in H.
- C. TF/G07K journal always as in H.
- D. Standard configuration for all TF/G07B units, both journals as in H.
- E. TF/G06K journal always as in J.
- F. Standard configuration for all TF/G06B units, both journals as in J.
- G. Connection flange type 9600-456-004. Supplied with all Rapidtraks of Type TF/G10 and TF/G07 with journal. Connect an intermediate flange type TDE (not shown) to the TFS flange.
- H. Standard journal for TF/G10 and TF/G07.
- J. Standard journal for TF/G06.



## 3.9 Installation of Encoder Flange

The encoder flange has been designed to connect a belt or ballscrew driven Rapidtrak to a flange mounted feedback device such as an encoder, resolver, etc. One face of the flange is machined to mount to the Rapidtrak. The other face must be machined to accept the encoder being used.

### Encoder Flange to Belt Driven Units

Components required:

- (1) Kit part number 9600-456-001 with flange machined by customer for encoder being used.
- (1) Coupling, part number 9600-294-005 with 5/8" input bore and 1/4" output bore (no keyseat either end.)

1. Remove the protective cover from the non-driven shaft by taking out the retaining screws.

2. Place the coupling over the Rapidtrak output shaft. Please note the following criteria for coupling location:

- ♦If the encoder and Rapidtrak have the same shaft diameter, slide the coupling so that the Rapidtrak shaft penetrates half the coupling length.
- ♦If the Rapidtrak shaft is larger than the encoder shaft, slide the coupling so that the Rapidtrak shaft penetrates 1/3 the coupling length.
- ♦After locating the coupling into the shaft, tighten the set screw.

3. Assemble the encoder flange to the Rapidtrak. Insure that the flange pilot is engaged and the mounting holes are aligned. Fasten the flange to the Rapidtrak with (4) 5/16-18 bolts provided. Rotate the coupling so that the second set screw may be reached through the slots in the flange.

4. Assemble the encoder to the flange face. Holding the encoder, gently slide the encoder shaft into the coupling until the engagement has been made between the face and the flange. Insure that the encoder mounting holes are aligned. Using the required bolts, fasten the encoder to the flange face.

5. Tighten the final #6-32 set screw through the slot in the flange to secure the coupling to the encoder shaft.

### Encoder Flange to Ballscrew Driven Units

Components required:

- (1) Kit, part number 9600-456-011 with flange machined by customer for encoder being used.
- (1) Coupling, part number 9600-284-004 with 1/4" input bore and 1/4" output bore (no keyseat either end.)
- (1) Small quantity high quality adhesive. (Ex: Loctite)

1. Remove the Rapidtrak rear plate by taking out the four retaining screws and lifting the plate off.

2. Carefully clean the bore in the end of the ballscrew and the adapter shaft supplied with the kit.

3. Place a few drops of adhesive onto the adapter shaft and insert the adapter shaft into the bore.

**CAUTION! Do not allow any adhesive to contact the bearing, as adhesive could drastically reduce the performance and life of the Rapidtrak.**

4. Place the coupling over the adapter shaft. Please note the following criteria for coupling location:

- ♦If the encoder and adapter have the same shaft diameter, slide the coupling so that the Rapidtrak shaft penetrates half the coupling length.
- ♦If the adapter shaft is larger than the encoder shaft, slide the coupling so that the adapter shaft penetrates 1/3 the coupling length.
- ♦If the adapter shaft is smaller than the encoder shaft, slide the coupling so that the adapter shaft penetrates 2/3 the coupling length.

After locating the coupling onto the shaft, tighten the #6-32 set screw .

5. Assemble the encoder flange to the Rapidtrak. Insure that the flange pilot is engaged and the mounting holes are aligned. Fasten the flange to the Rapidtrak with (4) 5/16-18 bolts provided. Rotate the coupling so that the second set screw may be reached through the slots in the flange.

6. Assemble the encoder to the flange face. Holding the encoder, gently slide the encoder shaft into the coupling until the engagement has been made between the face and the flange. Insure that the encoder mounting holes are aligned. Using the required bolts, fasten the encoder to the flange face.

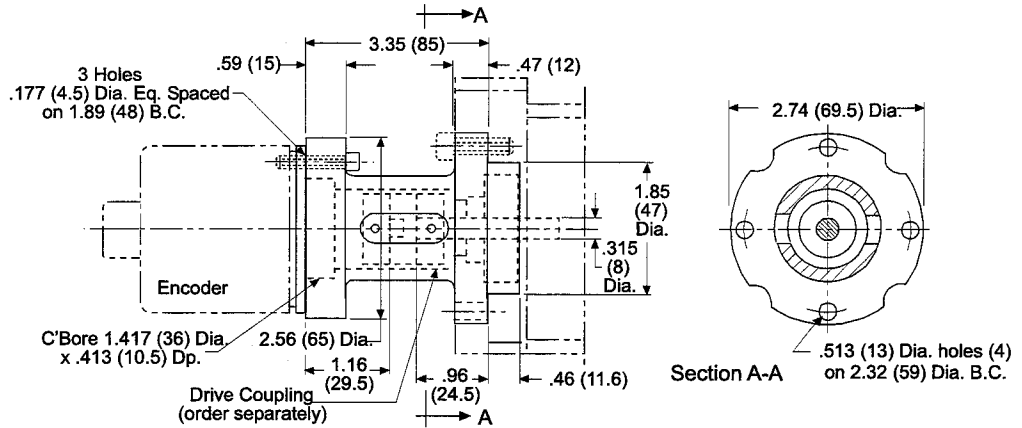
7. Tighten the final #6-32 set screw through the groove in the flange to secure the coupling to the encoder shaft.

### 3.9 Installing Encoder Flange

#### Ball screw driven unit

9600-456-011 Kit includes:

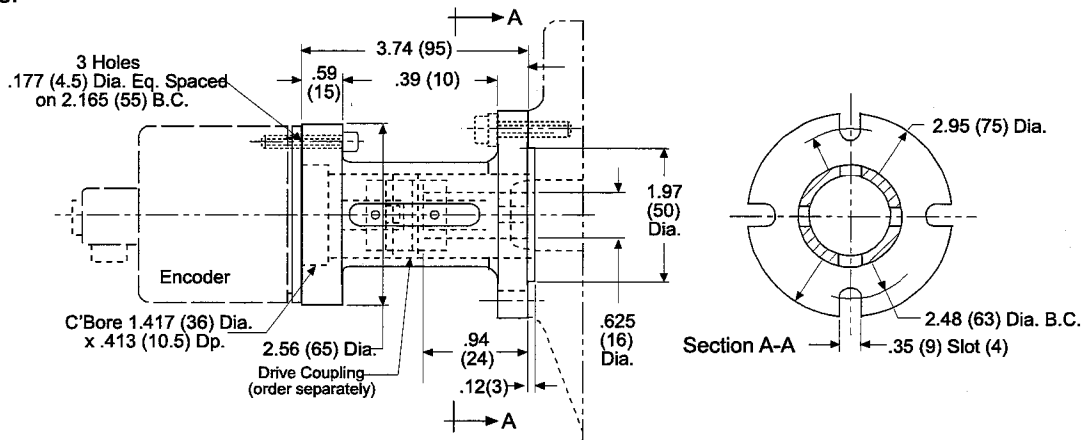
- (1) flange blank
- (4) 5/16-18 Bolts
- (1) Adaptor pin
- (1) Shaft



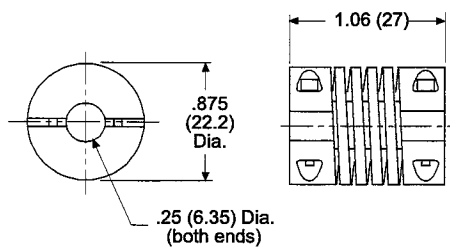
#### Belt driven unit

9600-456-001 Kit includes:

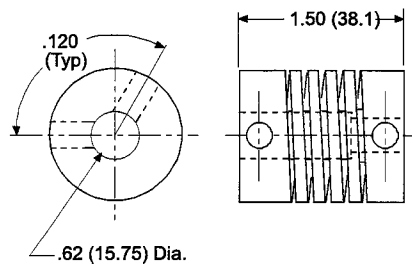
- (1) Flange blank
- (4) 5/16-18 Bolts



#### Encoder Couplings



9600-284-004



9600-284-005

Part Number	Input Bore	Output Bore
9600-284-004	1/4"	1/4"
9600-284-005	5/8"	1/4"

Couplings have no keyseat

## Section 4 Service and maintenance

### 4.1 Introduction

The customer can perform the service and maintenance described in this manual. Some steps, however, require special tools. These steps are marked with the tool symbol. The tools can be ordered from Warner Linear and their ordering data is found in the instructions. Other maintenance should be performed by service personnel from Warner Linear, at the Warner Linear Service Center. In some cases this service can be performed by the customer with the aid of special service instructions. Contact Warner Linear for further information.



Tool symbol

#### IMPORTANT!

- **Never work with power switched on, and always test run the unit after completed work.**
- **Rapidtrak M100, M75, and M55 are not self-braking. This means that the load can move if the driving force is disconnected, or if the motor, gears, or brakes are detached. This holds particularly true for vertical applications. The load must be secured before service is begun.**
- **Do Not Remove ball screw saddles on M55 units. The bearings are not shielded. M75 and M100 ball screw driven units use shielded bearings, but care must be taken if the saddle is removed to not damage the bearings.**

### 4.2 General maintenance

- Follow the recommended service intervals. Replace defective parts immediately. Only use parts of the same make and type as the original. State the correct ordering data (designation, part number, and quantity) when ordering spare parts. Ordering data can be found in the spare part lists supplied with the unit. Also state the manufacturing number of the unit embossed in the drive end.
- Check the unit at least once a month, particularly the cover band, the saddle ends, connections to the foundation, and the saddles. Also be attentive towards a changed level of noise. Replace, repair, or adjust the unit if any of these conditions occur.
- Keep the Rapidtrak clean. Wipe it off as required, particularly the cover band. If cleaning fluid is required, use small amounts and see to it that none gets into the unit. Do not use strong cleaning agents. Dry the unit fully and lubricate the cover band.
- **Never mix different types of grease/lubricants!**

### 4.3 Lubrication of ball screw

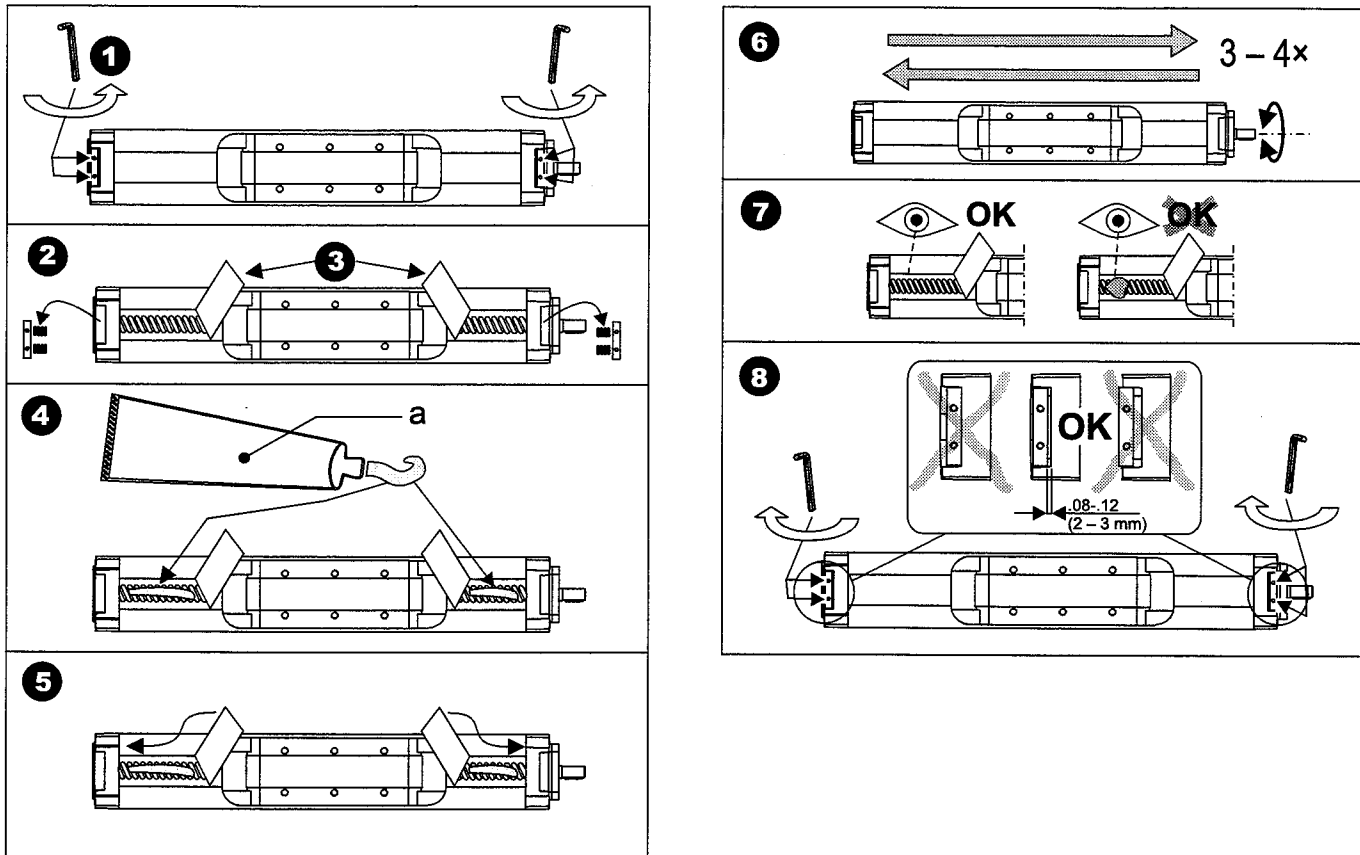


Figure 9: Lubrication of ball screw

- 1 Loosen the screws holding the cover band holder.
- 2 Remove the cover band holder.
- 3 Roll back the cover band. **WARNING: Do not crease cover band.**
- 4 Apply Mobil Grease #28 where the saddle can pass over it.
- 5 Reassemble the cover band.
- 6 Move the saddle back and forth a minimum of (4) times to distribute the grease along the screw.
- 7 Lift the cover band to make sure the grease has been distributed.
- 8 Fasten the cover band in place and tighten the screws on the cover band holder.

### 4.4 Lubrication of cover band

If the cover band is dry to the touch, it needs lubrication. If you feel a film of lubrication, no further lubrication is required.

To calculate the length of a replacement cover band:  
Measure L as shown on page 4.

#### Belt driven

$$M100 = L + 10.00''$$

$$M75 = L + 9.00''$$

$$M55 = L + 8.00''$$

#### Screw driven

$$M100 = L + 4.00''$$

$$M75 = L + 4.00''$$

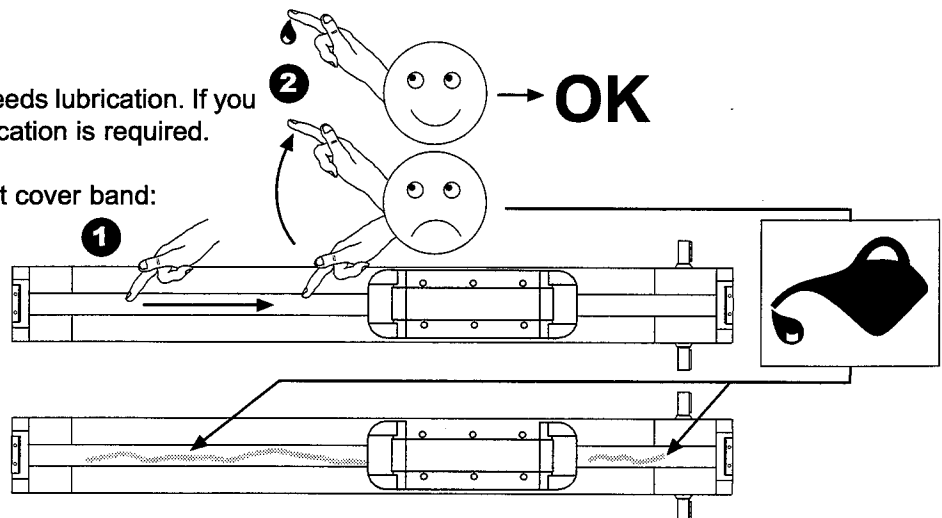


Figure 10: Lubrication of cover band

Lubricate the cover band a minimum of twice annually, or as needed

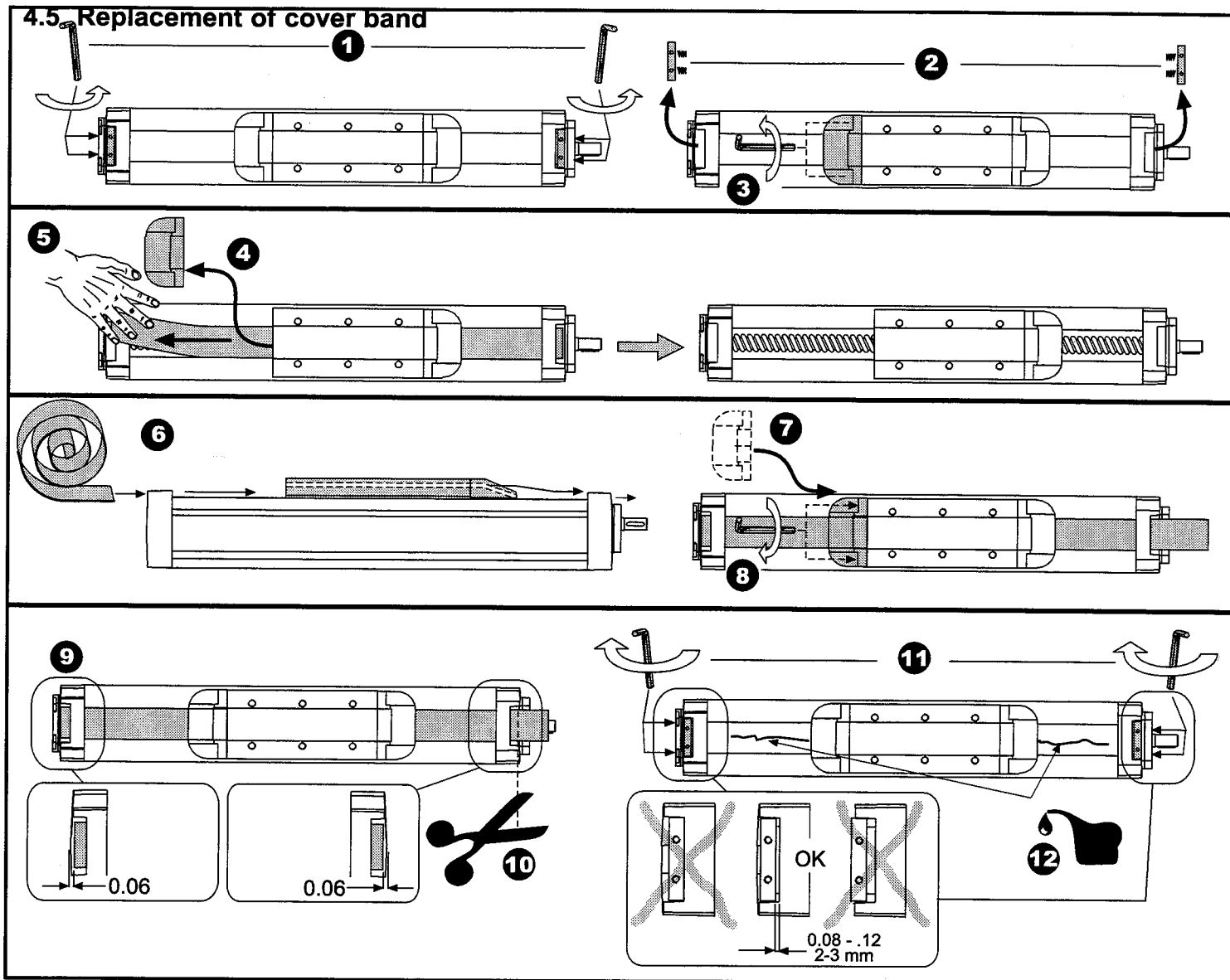


Figure 11: replacement of cover band

1. Loosen the screws holding the cover band holder.
2. Remove the cover band holder.
3. Remove the screws from the end cap on the nondriven end of the saddle
4. Remove the saddle end cap. Keep for replacement in step 7.
5. Pull the cover band out of the unit from the nondriven end.
6. Cut a new cover band and insert it into the end of the saddle with the end cap removed. Pull the cover band entirely through the saddle until there is enough to reach the driven end as shown. **Note:** for ease of assembly, you may tape the end of the new cover band to the old one and pull both through the unit.
7. Replace the end cap.
8. Replace the end cap screws.
9. Set the cover band at the nondriven end within 0.06" as shown.
10. Trim the opposite end of the cover band within 0.06" as shown.
11. Replace the cover band holders as shown.
12. Grease the cover band.

## 4.6 Control and adjustment of belt position

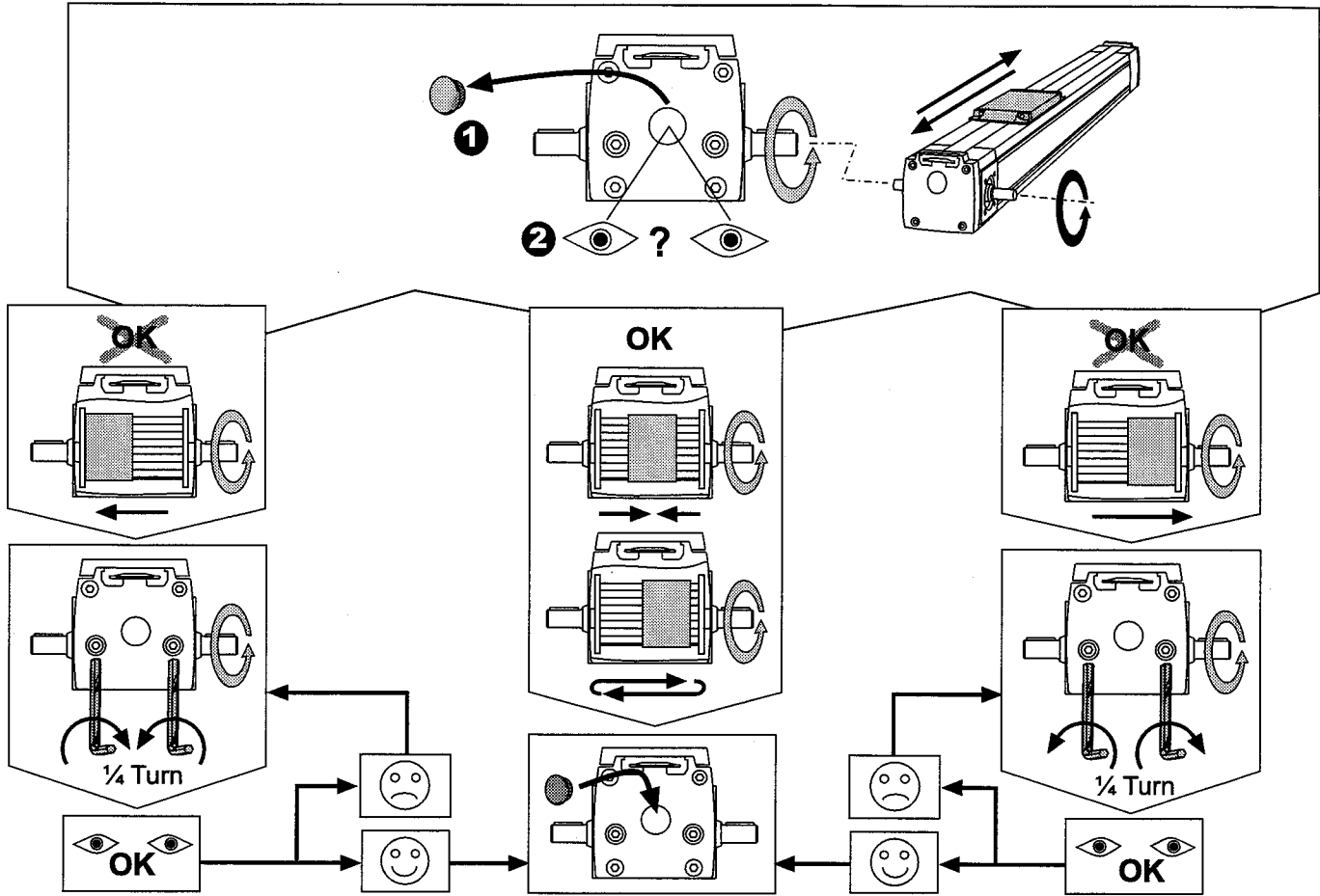


Figure 12: Control and adjustment of belt position

Check the belt position after installation or belt replacement. During operation the belt must either lie in the center of the tension pulley, or wander from side to side of the tension pulley, otherwise it must be adjusted. Check the belt tension before any adjustment. (See point 4.9.) Turn the adjustment screws 1/4 turn maximum, and recheck. Repeat until position is correct.

## 4.7 Replacement of saddle ends

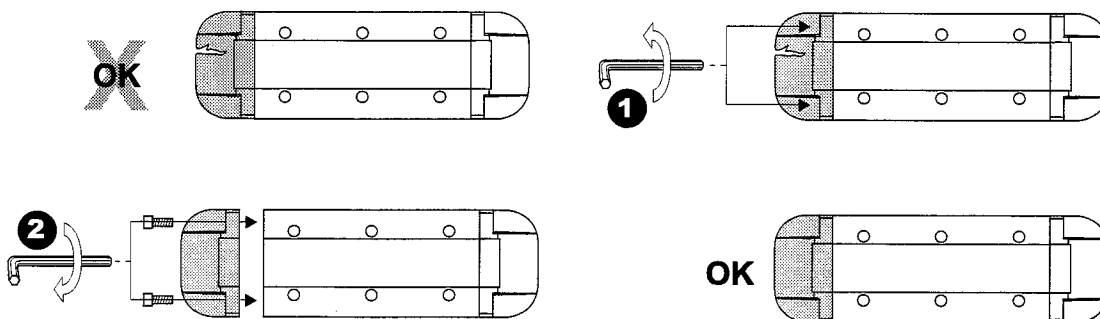


Figure 13: Replacement of saddle ends

1. Remove the damaged end cap and discard.
2. Replace the new end cap and tighten the two screws holding it in place.

## 4.8 Control and adjustment of belt tension

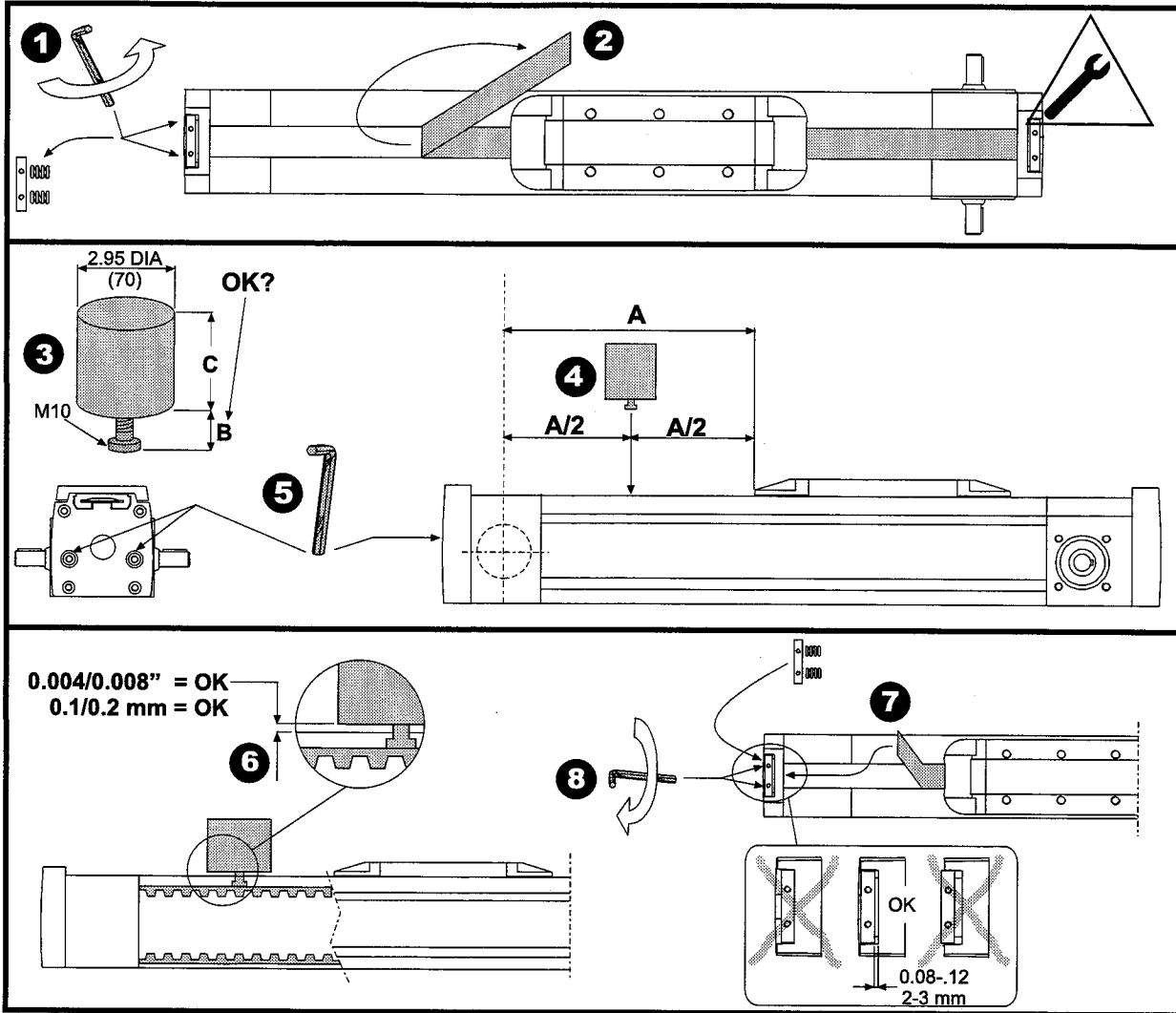


Figure 14: Adjustment of belt tension

Check the belt tension after belt replacement. The belt tensioning weight may be purchased from Warner Linear (see table 7), or it may be made on-site out of a round piece of steel as shown in the sketch above. Recheck the belt position anytime the belt tension is set. (See point 4.6.)

1. Remove the cover band holder.
2. Roll back the cover band. **Warning: do not crease cover band.**
3. Move the saddle to the nondriven end of the unit. Set 'B' based on the stroke lengths as indicated in table 7.
4. Measure the 'A' dimension and place the weight at A/2 so the bolt rests on the belt.
5. Hold the saddle in place, and turn the belt tensioning screws identical amounts on both screws in order to raise or lower the weight.
6. When the weight lifts above the profile (.004-.008), turn the screw back until the weight is flush. Repeat for both screws.
7. Put the cover band back in place.
8. Fasten the cover band holder.

Dimensions in inches (mm) Weight in pounds (kg)

Rapidtrak Type	Stroke	A	B	C	Weight	Part number for Weight
M100	Less than 1M	19.6 (500)	1.29 (32.7)	4.17 (106)	7.06 (3.2)	350-980
M100	Greater/= 1M	39.4 (1000)	1.41 (35.9)	4.17 (106)	7.06 (3.2)	350-980
M75	Less than 1M	19.6 (500)	1.04 (26.3)	4.17 (106)	7.06 (3.2)	350-980
M75	Greater/= 1M	39.4 (1000)	1.21 (30.8)	4.17 (106)	7.05 (3.2)	350-980
M55	All	19.6 (500)	.76 (19.3)	1.7 (56.5)	3.75 (1.7)	350-981

Table 7: Belt tensioning table

## 4.9 Lubrication of ball slides

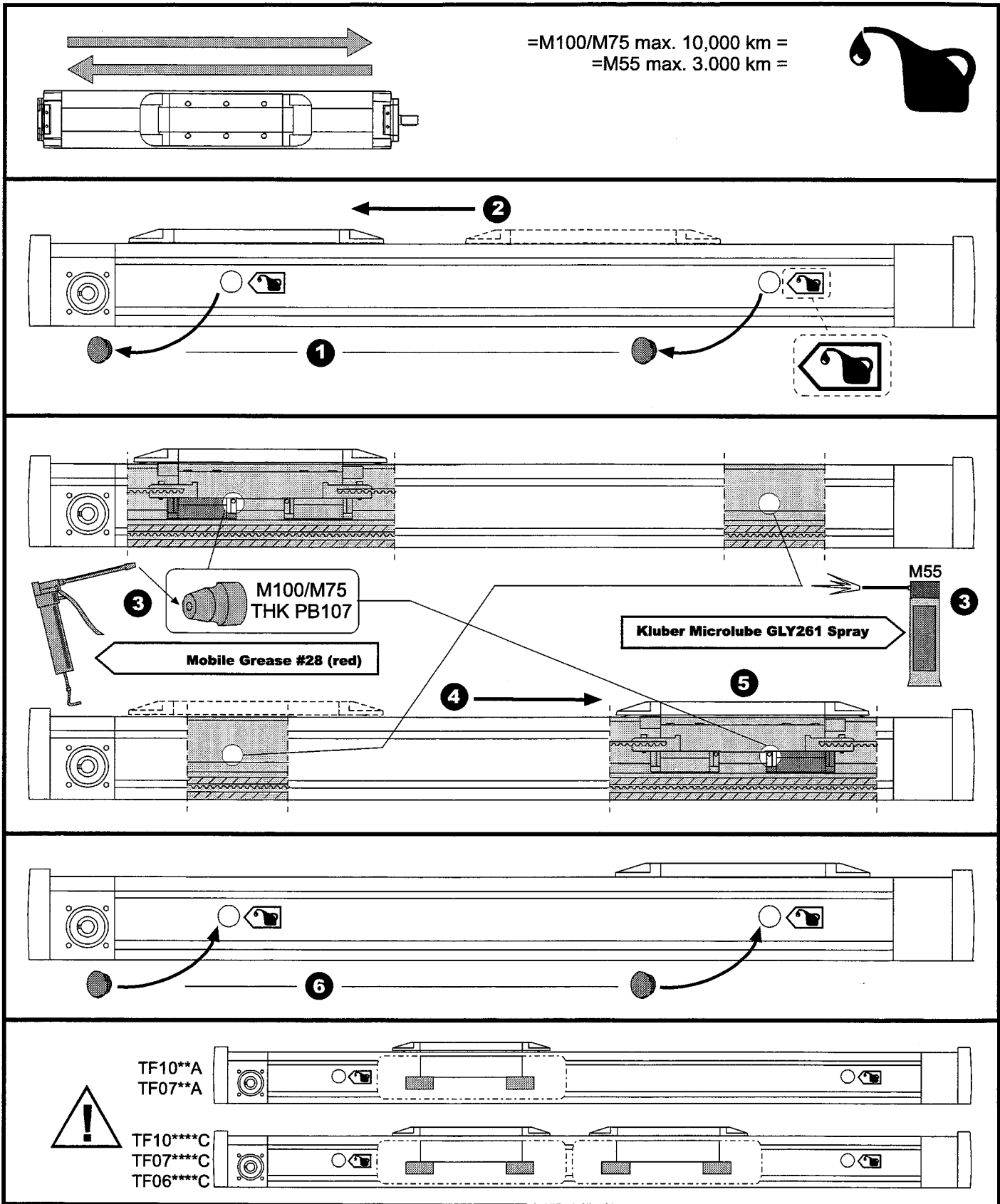


Figure 14: Lubrication of ball slides

For M100/M75, lubricate through the ball slide nipples with a grease gun. For M55, lubricate directly on the ball rail with lubrication spray.



## 4.10 Control and adjustment of saddle play in TG06(07/10)B-A

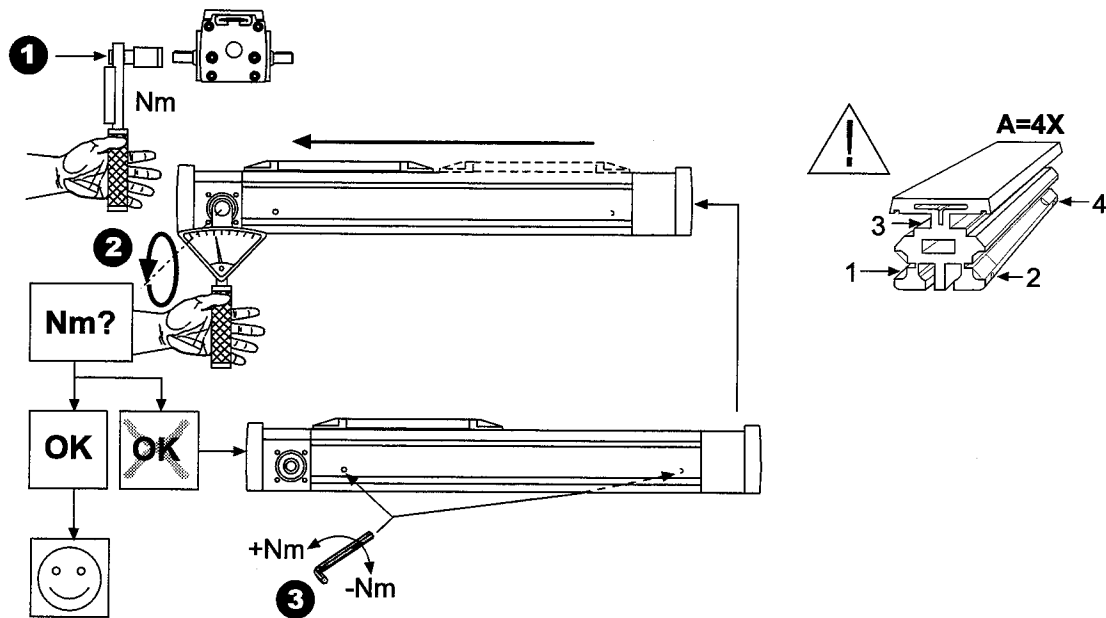


Figure 16: Adjustment of prism bushings in belt driven units with single saddles.

Adjust for saddle play due to wear. If the play does not matter for the operation, no adjustment is needed. Detach any possible gear box, motor, or saddle load before adjustment. Check the belt tension before adjustment. (See point 4.8.)

1. Connect a torque wrench to the drive shaft. Select a wrench that does not damage the shaft when the shaft is turned.
2. Turn the torque wrench so that the saddle moves along the entire profile. Compare the indication with the table below. If the value equals the table value, the play is correct. If it is less, the play is too large. If it is higher, the play is too small.
3. If needed, adjust through the holes (one on each side.) Adjust all four prism bushings on the saddle equally. Position the saddle so that the respective adjustment screw becomes accessible. Tighten or loosen each screw 1/4 turn or less. Check again. Repeat until the play is correct.

Value is in ft/lbs (Nm)

Rapidtrak type	Saddle type	Correct value
M100	A	2.8 (3.8)
M75	A	1.6 (2.2)
M55	A	1.5 (2.1)

Table 8: Adjustment table for prism bushings in belt driven single saddles.

## 4.11 Control and adjustment of saddle play in TG06(07/10)N or TG06(07/10)B-C

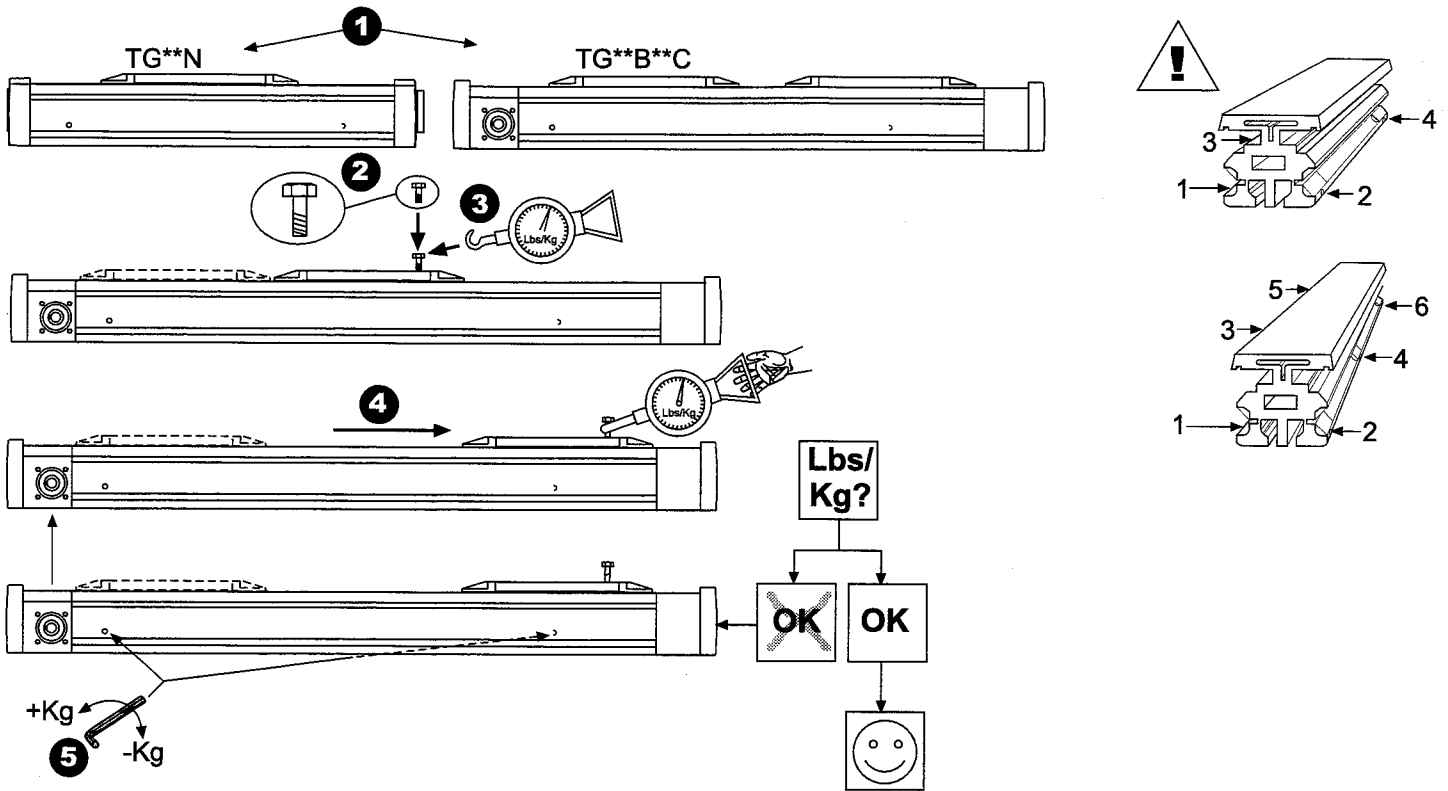


Figure 17: Prism bushing adjustment for undriven units or belt driven units with C-saddle

Adjust for saddle play due to wear. If the play does not matter for the operation, no adjustment is needed. Detach any possible gear box, motor, or saddle load before adjustment. At belt operation, also check the belt tension before adjustment, see point 4.8.

1. Undriven saddles are checked as per the scale method described below. In belt driven units with double saddles the driven saddle is checked as a single saddle with a torque wrench as described in point 4.10. The nondriven saddle is checked with the scale method described below.
2. Fasten a bolt in the saddle. (See table 9.)
3. Connect the scale to the bolt.
4. Pull the saddle along the entire profile. Compare the indication with the table below. If the value equals the table value, the play is correct. If it is less, the play is too large. If it is higher, the play is too small.
5. If needed, adjust prisms using the adjustment holes (one on each side). Adjust all four prism bushings on the saddle equally. Pull the saddle so that the respective adjustment screw becomes accessible. Tighten or loosen each screw 1/4 turn or less. Check again. Repeat until the play is correct.

Weight is in pounds (kg)

Rapidtrak type	Bolt size	Approximate value
M100	M10	8.82-9.92 (4.0-4.5)
M75	M8	7.72-8.82 (3.5-4.0)
M55	M5	6.62-7.72 (3.0-3.5)

Table 9: Adjustment table for prism bushing in undriven saddles

## 4.12 Control and adjustment of saddle play in TG06(07/10)K or TG06(07/10)N

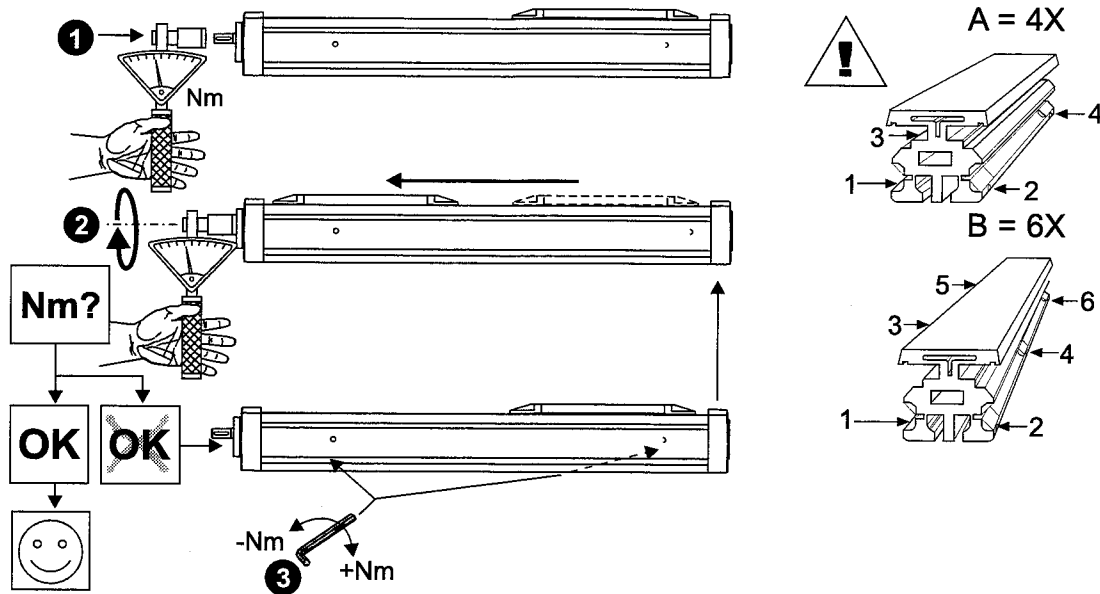


Figure 18: Adjustment of prism bushings in ball screw driven units.

Adjust for saddle play due to wear. If the play does not matter for the operation, no adjustment is needed. Detach any possible gear box, motor, or saddle load before adjustment.

### Single saddle:

1. Connect a torque wrench to the drive shaft. Select a wrench that does not damage the shaft when turned.
2. Turn the torque wrench so the saddle moves along the entire profile. Compare the indication with the table below. Remember to use the correct torque for screw supports. If the value equals the table value, the play is correct. If it is less, the play is too large. If it is higher, the play is too small.
3. If needed, adjust the prism bushings using the adjustment holes (one on each side). Adjust all four prism bushings on the saddle. Position the saddle so that the respective adjustment screw becomes accessible. Tighten or loosen each screw 1/4 turn or less. Check again. Repeat until the play is correct.

### Double saddle:

For double saddles, one saddle is driven while the other is not driven. The driven saddle is checked as per the instruction above for single saddles while the nondriven saddle is checked as per the scale method (point 4.11).

Torque is in ft/lbs (Nm)

Lead (mm)	M100 Torque			M75 Torque			M55 Torque		
	A	(1)ST	(2) ST	A	(1) ST	(2) ST	A	(1) ST	(2) ST
2525	.41(.55)	.63(.85)	.85(1.15)						
2510	.18(.25)	.30(.40)	.41(.55)						
0702				.18(.24)	.29(.39)	.40(.54)			
2020				.27(.37)	.42(.57)	.57(.77)			
0605							.07(.10)	.10(.13)	.12(.16)
1620							.22(.30)	.33(.45)	.44(.60)

A = A-saddle, ST = screw support

Table 10: Adjustment table for prism bushings in ball screw driven units using A Saddles

## 4.13 Replacement of belt in TF06(07/10)B-A

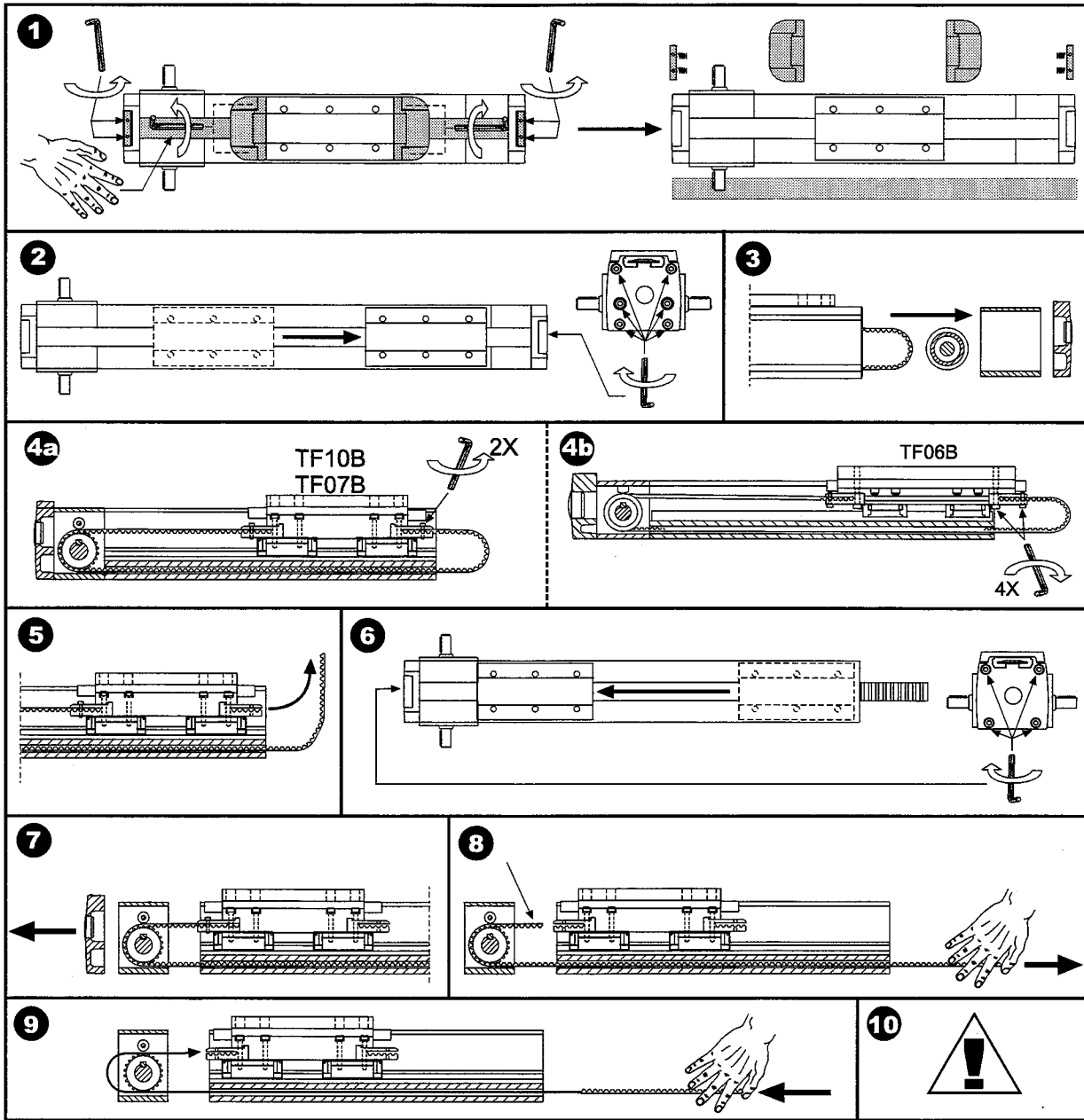


Figure 19: Replacement of belt in ball guided units

Replace single and double saddles using the same method.

1. Remove the cover band holder, the cover band, and all saddle ends.
2. Move the saddle(s) to the tension-station. Loosen all bolts in the tension station.
3. Remove the tension-station, the end cover, and the tension pulley.
- 4a. For TF10B and TF07B: remove the (2) belt holder screws.
- 4b. For TF06B: remove the two outer belt holder screws and loosen the two inner screws.
5. Remove the belt from the belt holder.
6. Move the saddle to the drive-station. Loosen all bolts in the drive-station.
7. Remove the end cover, and pull out the drive-station.
8. Remove the belt holder screws. (See point 4a or 4b.) Pull out the belt.
9. Insert the new belt. Reassemble the unit in reverse order.
10. When mounting the cover band. (see point 4.5.) After reassembly, adjust the belt tension (point 4.8) and check the belt position (point 4.6).

Belt Calculation (Inches)		
Measure L as shown on page 4.		
M100	TF	$2(L + 6.5) - 6.0$
M100	TG	$2(L + 6.0) - 4.0$
M75	TF	$2(L + 6.0) - 6.0$
M75	TG	$2(L + 6.0) - 4.0$
M55	TF	$2(L + 4.7) - 6.0$
M55	TG	$2(L + 4.7) - 3.0$

#### 4.14 Replacement of belt in TG10(07/06)B-A.

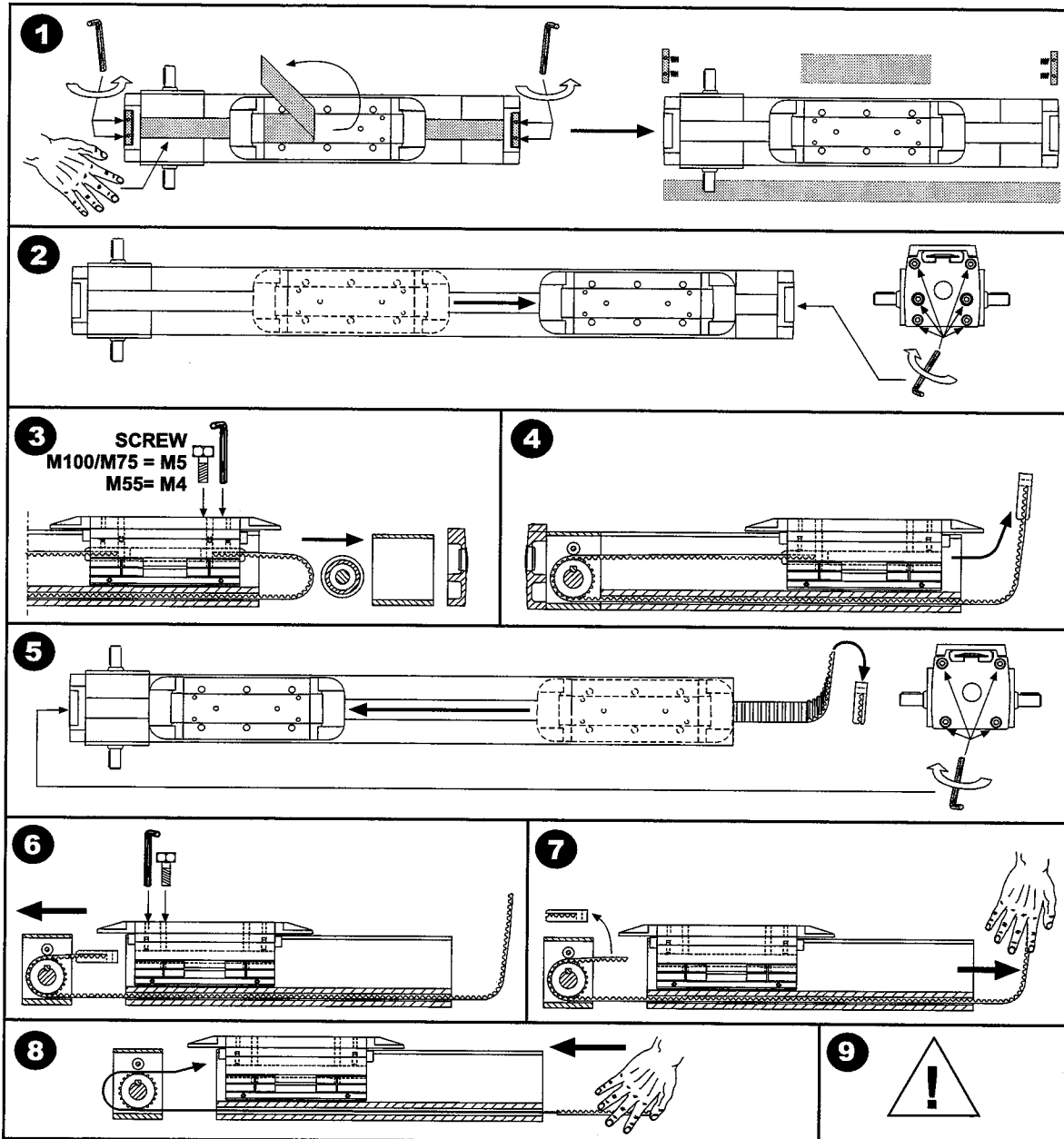


Figure 20: Replacement of belt in prism guided units with single saddle

1. Remove the cover band holders, the cover band, and the saddle ends.
2. Move the saddle to the tension-station. Loosen all bolts in the tension-station.
3. Remove the tension-station, the end cover, and the tension pulley. Position the saddle to have access to the set screw and loosen the two socket head cap screws and insert screw, as noted, in the inner hole. Pull up the belt holder pin with the aid of the screw.
4. Remove the belt from the saddle.
5. Remove the belt holder. Move the saddle to the drive-station. Loosen all bolts in the drive-station.
6. Loosen the two socket head cap screws, and insert a screw in the inner hole. Pull up the belt holder pin with the aid of the screw. Remove the end cover, and pull out the drive-station.
7. Remove the belt holder, and pull out the belt.
8. Insert the new belt. Reassemble the unit in reverse order. Fasten the belt holders with the pins. Do not tighten the socket head cap screws.
9. See point 4.5 when mounting the cover band. After the reassembly, adjust the belt tension (point 4.8), and check the belt position (point 4.6). Tighten all the belt holder socket head cap screws.

## 4.15 Replacement of belt in TG06(07/10)B-C

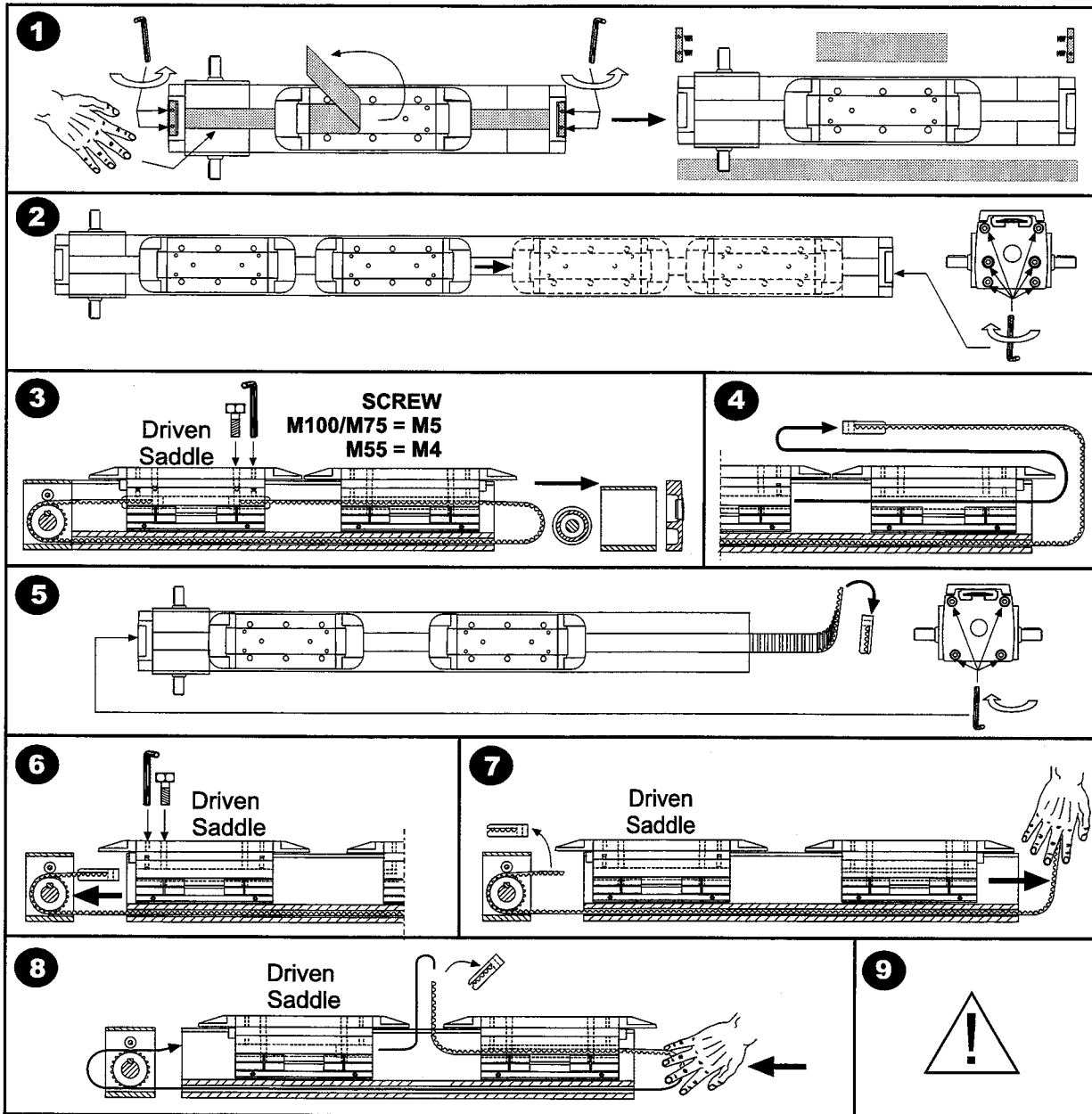


Figure 21: Replacement of belt in prism guided units with double saddles

1. Remove the cover band holders, the cover band, and all the saddle ends.
2. Move the saddles to the drive-station. Loosen all bolts in the tension-station.
3. Remove the tension-station, the end cover, and the tension pulley. Position the saddle to have access to the set screw and loosen the socket head cap screws, and insert a screw, as noted, in the inner hole in the driven saddle. Pull up the belt holder pin with the aid of the screw.
4. Remove the belt from the driven saddle through the nondriven saddle.
5. Remove the belt holder. Move the driven saddle to the drive station. Loosen all bolts in the drive-station.
6. Loosen the two socket head cap screws, and insert screw, as shown, in the inner hole. Pull up the belt holder pin with the aid of the screw. Remove the end cover, and pull out the drive-station.
7. Remove the belt holder, and pull out the belt. Move the driven saddle to the end of the profile and push the nondriven saddle to the end of the profile.
8. Put the belt holder on the new belt. Pull the belt through the nondriven saddle. Fasten the belt holder in the driven saddle with the pin, but do not tighten the socket head cap screws.
9. Reassemble the unit in reverse order. Fasten the belt holder with the pin but do not tighten the belt holder socket head cap screws. See point 4.5 when mounting the cover band. After the reassembly, adjust the belt tension (point 4.8), and check the belt position (point 4.6). Tighten all the belt holder socket head cap screws.

**Section 5**  
**Technical Data - M100**

<b>Rapidtrak T•10K</b>		<b>TF10K</b>		<b>TG10K</b>	
		<b>2525</b>	<b>2510</b>	<b>2525</b>	<b>2510</b>
Max. speed	Ft/s(m/s)	4 (1.25)	1.6 (0.5)	4 (1.25)	1.6 (0.5)
Repeatability	in(mm)	±.002 (± 0.05mm)		±.004 (± 0.01mm)	
Ambient temperature		-4°F(-20°C) +158°F(+70°C)			
Linear movement / shaft revolution	in(mm)	0.98 (25)	0.39 (10)	0.98 (25)	0.39 (10)
Max. input speed	rpm	3000			
Weight with A-saddle	lbs	(11.6(L* x .03281))+ 28.2		(9.5(L* x .03281))+ 25.8	
Weight with A-saddle	kg	(17.2(L* x .01))+ 12.8		(14.2(L* x .01))+ 11.7	
Weight with C-saddle	lbs	(11.6(L* x .03281))+47.6		(9.5(L* x .03281))+ 42.8	
Weight with C-saddle	kg	(17.2(L* x .01))+21.6		(14.2(L* x .01))+ 19.4	
Weight per pair screw supports	lbs (kg)	4.4 (2)			

\*See figure 1, L = inches for pound calculations or cm for kg calculations

**Table 11**

<b>Rapidtrak T•10B</b>		<b>TF10B</b>		<b>TG10B</b>	
Max. speed	Ft/s(m/s)	16 (5)			
Max. belt force	lbs (N)	1250 (281)			
Repeatability	in(mm)	±.004 (± 0.1)		±008 (± 0.2)	
Ambient temperature		-4°F(-20°C) +158°F(+70°C)			
Linear movement / shaft revolution	in(mm)	6.93 (176)			
Max. input speed	rpm	1700			
Weight with A-saddle	lbs	(9.6(L* x .03281))+28.9		(7.8(L* x .03281))+26.5	
Weight with A-saddle	kg	(14.3(L* x .01))+13.1		(11.6(L* x .01))+12	
Weight with C-saddle	lbs	(9.6(L* x .03281))+48.3		(7.8(L* x .03281))+26.5	
Weight with C-saddle	kg	(14.3(L* x .01))+21.9		(11.6(L* x .01))+19.7	

\*See figure 1, L = inches for pound calculations or cm for kg calculations

**Table 12**

<b>Rapidtrak T•10N</b>		<b>TF10N</b>		<b>TG10N</b>	
Max. speed	Ft/s (m/s)	16 (5)		16 (5)	
Ambient temperature		-4°F(-20°C) +158°F(+70°C)			
Weight with A-saddle	lbs	(9.6(L* x .03281))+ 28.9		(7.8(L* x .03281))+ 26.5	
Weight with A-saddle	kg	(14.3(L* x .01))+ 13.1		(11.6(L* x .01))+ 12	
Weight with C-saddle	lbs	(9.6(L* x .03281))+ 48.3		(7.8(L* x .03281))+ 26.5	
Weight with C-saddle	kg	(14.3(L* x .01))+ 21.9		(11.6(L* x .01))+ 19.7	

\*See figure 1, L = inches for pound calculations or cm for kg calculations

**Table 13**

## Technical Data - M75

Rapidtrak T•07K		TF07K		TG07K	
		0702	2020	0702	2020
Max. speed	Ft/s(m/s)	2 (0.63)	3.3 (1)	2 (0.63)	3.3 (1)
Repeatability	in(mm)	± 0.002 (± 0.05)		± 0.004 (± 0.1)	
Ambient temperature		-4°F(-20°C) +158°F(+70°C)			
Linear movement / shaft revolution	in(mm)	0.50 (12.7)	0.79 (20)	0.50 (12.7)	0.79 (20)
Max. input speed	rpm	3000			
Weight with A-saddle	lb	(7.1(L* x .03281))+14.1		(5.5(L* x .03281))+11.7	
Weight with A-saddle	kg	(10.5(L* x 0.01))+6.4		(8.2(L* x 0.01))+5.3	
Weight with C-saddle	lb	(7.1(L* x .03281))+23.8		(5.5(L* x .03281))+19	
Weight with C-saddle	kg	(10.5(L* x 0.01))+10.8		(8.2(L* x 0.01))+8.6	
Weight per pair screw supports	lb(kg)	3.53 (1.6)			

\*See figure 1, L = inches for pound calculations or cm for kg calculations

**Table 14**

Rapidtrak T•07B		TF07B	TG07B
Max. speed	Ft/s(m/s)	16 (5)	
Max. belt force	lbs(N)	200 (900)	
Repeatability	in(mm)	±.004 (± 0.01)	±.001 (± 0.02)
Ambient temperature		-4°F(-20°C) +158°F(+70°C)	
Linear movement / shaft revolution	in(mm)	5.12 (130)	
Max. input speed	rpm	2300	
Weight with A-saddle	lbs	(5.9(L* x .03281))+ 15.7	(4.5(L* x .03281))+ 13.2
Weight with A-saddle	kg	(8.8(L* x .01))+ 7.1	(6.7(L* x .01))+ 6
Weight with C-saddle	lbs	(5.9(L* x .03281))+ 25.4	(4.5(L* x .03281))+ 20.5
Weight with C-saddle	kg	(8.8(L* x .01))+ 11.5	(6.7(L* x .01))+ 9.3

\*See figure 1, L = inches for pound calculations or cm for kg calculations

**Table 15**

Rapidtrak T•07N		TF07N	TG07N
Max. speed	Ft/s(m/s)	16 (5)	
Ambient temperature		-4°F(-20°C) +158°F(+70°C)	
Weight with A-saddle	lbs	(5.9(L* x .03281))+ 15.7	(4.5(L* x .03281))+ 13.2
Weight with A-saddle	kg	(8.8(L* x .01))+ 7.1	(6.7(L* x .01))+ 6
Weight with C-saddle	lbs	(5.9(L* x .03281))+ 25.4	(4.5(L* x .03281))+ 20.5
Weight with C-saddle	kg	(8.8(L* x .01))+ 11.5	(6.7(L* x .01))+ 9.3

\*See figure 1, L = inches for pound calculations or cm for kg calculations

**Table 16**



## Technical Data - M55

Rapidtrak T•06C, T•06K		TF06K		TG06K	
		0605	1620	0605	1620
Max. speed	Ft/s (m/s)	0.8 (.25)	3.3 (1)	0.8 (1.6)	3.3 (1)
Repeatability	in(mm)	±0.002 (± 0.05)		±0.004 (± 0.01)	
Ambient temperature		-4°F(-20°C) +158°F(+70°C)			
Linear movement/shaft revolution	in(mm)	0.20 (5)	0.79 (20)	0.20 (5)	0.79 (20)
Max. input speed	rpm	3000			
Weight with A-saddle	lbs	(3.8(L* x .03281))+ 7.9		(2.96(L* x .03281))+ 7.5	
Weight with A-saddle	kg	(5.6(L* x .01))+ 3.6		(4.4(L* x .01))+ 3.4	
Weight with C-saddle	lbs	(3.8(L* x .03281))+ 13.7		(2.96(L* x .03281))+ 12.8	
Weight with C-saddle	kg	(4.4(L* x .01))+ 5.8		(5.6(L* x .01))+ 6.2	

\*See figure 1, L = inches for pound calculations or cm for kg calculations

**Table 17**

Rapidtrak T•06B		TF06B	TG06B
Max. speed	Ft/s(m/s)	16 (5)	
Max. belt force	lbs (N)	90 (400)	
Repeatability	in(mm)	± 0.004 (± 0.1)	± 0.008 (± 0.2)
Ambient temperature		-4°F(-20°C) +158°F(+70°C)	
Linear movement / shaft revolution	in(mm)	4.13 (105)	
Max. input speed	rpm	2857	
Weight with A-saddle	lb	(3.6(L* x .03281))+ 9.9	(2.8(L* x .03281))+ 9.5
Weight with A-saddle	kg	(5.3(L* x 0.01))+ 4.5	(4.1(L* x 0.01))+ 4.3
Weight with C-saddle	lb	(3.6(L* x .03281))+ 15.7	(2.8(L* x .03281))+ 14.8
Weight with C-saddle	kg	(5.3(L* x 0.01))+ 7.1	(4.1(L* x 0.01))+ 6.7

\*See figure 1, L = inches for pound calculations or cm for kg calculations

**Table 18**

Rapidtrak T•06N		TF06N	TG06N
Max. speed	Ft/s(m/s)	1.6 (5)	
Ambient temperature		-4°F(-20°C) +158°F(+70°C)	
Weight with A-saddle	lb	(3.6(L* x .03281))+ 9.9	(2.8(L* x .03281))+ 9.5
Weight with A-saddle	kg	(5.3(L* x 0.01))+ 4.5	(4.1(L* x 0.01))+ 4.3
Weight with C-saddle	lb	(3.6(L* x .03281))+ 15.7	(2.8(L* x .03281))+ 14.8
Weight with C-saddle	kg	(5.3(L* x 0.01))+ 7.1	(4.1(L* x 0.01))+ 6.7

\*See figure 1, L = inches for pound calculations or cm for kg calculations

**Table 19**

## WARRANTY

Thomson warrants that it will repair or replace (whichever it deems advisable) any product manufactured and sold by it which proves to be defective in material or workmanship within a period of one (1) year from the date of original purchase for consumer, commercial or industrial use.

This warranty extends only to the original purchaser and is not transferable or assignable without Thomson's prior consent.

Warranty service can be obtained in the U.S.A. by returning any defective product, transportation charges prepaid, to the appropriate Thomson factory. Contact the customer service department prior to shipment to obtain a return authorization number. Additional warranty information may be obtained by writing the Customer Service Department:

**Thomson**

45 Hazelwood Drive - Amherst, NY 14228  
800-566-5274

A purchase receipt or other proof of original purchase will be required before warranty service is rendered. If found defective under the terms of this warranty, repair or replacement will be made, without charge, together with a refund for transportation costs. If found not to be defective, you will be notified and, with your consent, the item will be repaired or replaced and returned to you at your expense.

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