## **3M** Instructions and Parts List

## 3M-Matic

a20 Type 10700

Adjustable

**Case Sealer** 

## with

# AccuGlide<sup>™</sup> 2+ Taping Heads

Serial No.

For reference, record machine serial number here.



Important Safety Information BEFORE INSTALLING OR OPERATING THIS EQUIPMENT Read, understand, and follow all safety and operating instructions.

### Spare Parts

It is recommended you immediately order the spare parts listed in the "Spare Parts/Service Information" section. These parts are expected to wear through normal use, and should be kept on hand to minimize production delays.



**3M Industrial Adhesives and Tapes** 3M Center, Building 220-5E-06 St. Paul, MN 55144-1000 "3M-Matic"and "AccuGlide" are Trademarks of, 3M St. Paul, MN 55144-1000 Printed in U.S.A.

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# **3M**

This instruction manual covers safety aspects, handling and transport, storage, unpacking, preparation, installation, operation, adjustments, maintenance, troubleshooting, repair work and servicing plus parts list of the **3M-Matic<sup>™</sup> a20** Adjustable case sealer.

3M Industrial Adhesives and Tapes 3M Center, Building 220-5E-06 St. Paul, MN 55144-1000

Edition April 2011

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The manufacturer reserves the right to change the product at any time without notice. **To Our Customers:** 

This is the 3M-Matic<sup>™</sup>/AccuGlide<sup>™</sup>/Scotch<sup>®</sup> equipment you ordered. It has been set up and tested in the factory with Scotch<sup>®</sup> tapes.

Included with each machine is an Instructions and Parts List manual.

Technical Assistance / Replacement Parts and Additional Manuals:

For technical assistance, contact our help line at 1-800-328-1390. Provide the customer support coordinator with the model/machine name, machine type, and serial number that are located on the identification plate (For example: Model a20 - Type 10700 - Serial Number 13282).

To order replacement parts, contact us:

CSPD division of Combi Packaging Systems LLC. 5365 East Center Dr. N.E. Canton, OH 44721

1-800-344-9883 e-mail: CSPD-CSR@combi.com www.combi.com

#### **Identification Plate**

3M Company St. Paul, MN 55144 USA.	Part Number	3M-N For Industrial		Watt	
Туре	Serial Number	Volt	Hertz	Phase	



**3M Industrial Adhesives and Tapes** 3M Center, Building 220-5E-06 St. Paul, MN 55144-1000 3M-Matic<sup>™</sup>, AccuGlide<sup>™</sup> and Scotch<sup>™</sup> are Trademarks of 3M St. Paul, MN 55144-1000 Printed in U.S.A. THIS PAGE IS BLANK

#### TABLE OF CONTENTS - MANUAL 1: a20 Adjustable Case Sealer (For Taping Head Information - See MANUAL 2: AccuGlide™ 2+ STD 2 Inch Taping Heads)

#### a20 Adjustable Case Sealer

Cover Page	
Replacement Parts and Service Informationi - ii	í
Table of Contents iii -	v
Acronyms and Abbreviationsvi	

#### 1. Introduction

1.1	Manufacturing Specifications / Description / Intended Use	1 ·	- 2
1.2	How to Read and Use the Manual / Reference Documents	2	
	1.2.1 Importance of the Manual	2	
	1.2.2 Manual Maintenance	2	
	1.2.3 Consulting the Manual	2	
	1.2.4 How to Update the Manual in Case of Modifications		

#### 2. General Information

2.1	Identification Data	3
2.2	Warranty / Contents	4

#### 3. Safety

3.1 General Safety Information	.5
3.2 Signal Words Explanation	5
3.3 Table of Warnings	.6 - 7
3.4 Operator's Qualifications Definition	. 8
3.5 Number of Operators	.8
3.6 Safe Use of the Machine Instructions	.8
3.7 Residual Hazards	. 8
3.8 Prevent Other Hazards - Recommendations and Measures	.8
3.9 Personal Safety Measures	. 8
3.10 Incorrect / Predictable Actions Not Allowed	.8
3.11 Operator's Required Skill Levels	9
3.12 Component Locations	
3.13 Table of Warnings and Replacement Labels	

#### 4. Technical Specifications

4.1	Power Requirements	.12
4.2	Operating Rate	12
4.3	Operating Conditions	.12
4.4	Таре	.12
4.5	Tape Width	.12
4.6	Tape Roll Diameter	.13
4.7	Tape Application Leg Length - Standard	.13
	Tape Application Leg Length - Optional	
4.8	Box Board	.13
4.9	Box Weight and Size Capacities	13
4.10	) Machine Noise Levels	13
4.11	Machine Dimensions	14
4.12	2 Setup Recommendations	.14

Page

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#### 5. Shipment, Handling, and Storage

5.1	Packed Machine Shipment and Handling	15
5.2	Overseas Shipment Packaging (Optional)	.15
5.3	Handling and Transportation of Uncrated Machine	.15
5.4	Machine Storage	15

#### 6. Unpacking

6.1	Uncrating	
6.2	Packaging Materials Disposal	

#### 7. Installation

7.1	Operating Conditions	. 17
	Space Requirements for Machine Operation and Maintenance	
7.3	Tool Kit Supplied with the Machine	. 17
7.4	Machine Positioning	17
7.5	Plastic Ties Removal	18
7.6	Assembly Completion	. 18
7.7	Taping Heads Completion	19
7.8	Preliminary Electric Inspection	19
7.9	Main Power Machine Connection and Inspection	19
7.1	0 Inspection of Phases	. 19

#### 8. Theory of Operation

8.1 Working Cycle Description	
•	

#### 9. Controls

9.1	Box Width Adjusting Knobs	21
	Box Height Adjusting Crank	
	Start / Stop Main Rotary Switch	
9.4	Emergency Stop Button (Latching)	21

#### 10. Safety devices

10.1 Blade Guards	
10.2 Emergency Stop Button	
10.3 Electric System	22

#### 11. Setup and Adjustments

11.1 Box Width Adjustment	
11.2 Box Height Adjustment	
11.3 Top Flap Compression Roller Adjustment	
11.4 Changing the Tape Leg Length	
11.5 Run Boxes to Check Adjustment	

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#### 12. Operation

12.1	Operator's Correct Working Position	25
	Starting the Machine	
	Starting Production	
	Tape Replacement	
	Box Size Adjustment	
	Cleaning	
	Table of Adjustments	
	Safety Devices Inspection	
	Troubleshooting	

#### 13. Maintenance

13.1	Safety Measures (see section 3)	27
	Tools and Spare Parts Supplied with Machine	
	Maintenance Operations - Recommended Inspections and Frequency	
13.4	Inspections to be Performed Before and After Every Maintenance Operation	27
13.5	Safety Features (Inspection Efficiency)	27
13.6	Machine Cleaning	
13.7	Cutter Blade Cleaning	28
13.8	Lubrication	28
13.9	Lubrication Products	
13.10	Drive Pulley Ring and Drive Belt Replacement	29
13.11	Box Drive Belt Tension	
13.12	Maintenance Work Log	31

#### 14. Additional Instructions

14.1	Machine Dispos	al Information .	 	
14.2	Fire emergency		 	

#### **15. Enclosures and Special Information**

15.1	Statement of Conformity	33
15.2	Hazardous Substances Emission	33
15.3	Safety Features List	33
15.4	Copies of Test Reports, Certification, etc	33

#### 16. Technical Documentation and Information

<ul><li>16.1 Electric Diagrams</li><li>16.2 Spare Parts / Ordering</li></ul>	
Drawings and Parts Lists	. 41 - End of Manual

#### TAPING HEAD INFORMATION -

MANUAL 2: AccuGlide<sup>™</sup> 2+ STD 2 Inch Taping Heads (See MANUAL 2 for Table of Contents)

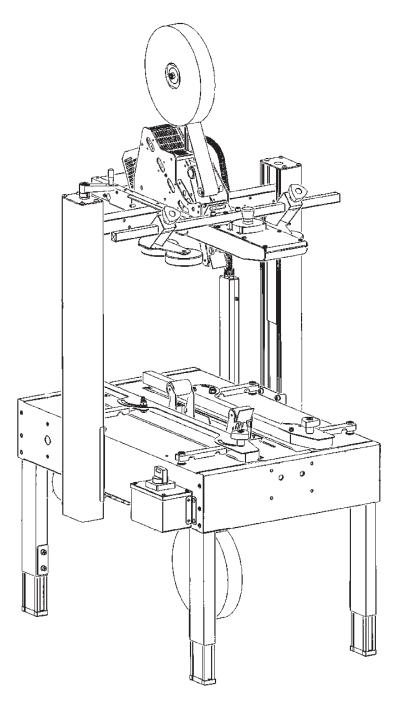
#### ABBREVIATIONS AND ACRONYMS

#### LIST OF ABBREVIATIONS, ACRONYMS

3M-Matic	- Trademark of 3M St. Paul, MN 55144-1000
AccuGlide	- Trademark of 3M St. Paul, MN 55144-1000
Scotch	- Trademark of 3M St. Paul, MN 55144-1000
Drw.	- drawing
Ex.	- for example
Figure	- exploded view figure no. (spare parts)
Figure	- Illustration
Max.	- maximum
Min.	- minimum
Nr.	- number
N/A	- not applicable
OFF	- machine not operating
ON	- machine operating
PLC	- Programmable Logic Control
PP	- Polypropylene
PU/PU Foar	n - Polyurethane Foam
PTFE	- Polytetraflourethelene
PVC	- Poly-vinyl chloride
W	- Width
Н	- Height
L	- Length

#### 1.1 Manufacturing Specifications / Description / Intended Use

The **3M-Matic™ a20 Adjustable Case Sealer** with **AccuGlide™ 2+Taping Heads** is designed to apply a "C" clip of **Scotch**<sup>®</sup> pressure-sensitive film box sealing tape to the top and bottom center seam of regular slotted containers. The **a20** is manually adjustable to a wide range of box sizes (see "Specifications Section – Box Weight and Size Capacities").



#### 3M-Matic<sup>™</sup> a20 Adjustable Case Sealer, Type 10700

#### 1.1 Manufacturing Specifications / Description / Intended Use (continued)

The 3M-Matic<sup>™</sup> case sealing machines have been designed and manufactured in compliance with the legal requirements at the date of inception.

#### 1.2 How to Read and Use the Instruction Manual

This instruction manual covers safety aspects, handling and transport, storage, unpacking, preparation, installation, operation, Setup and adjustments, technical and manufacturing specifications, maintenance, troubleshooting, repair work and servicing, electric diagrams, warranty information, disposal (ELV), a definition of symbols, plus a parts list of the 3M-Matic<sup>™</sup> a20 Adjustable case sealer 3M Industrial Adhesives and Tapes Division 3M Center, Bldg. 220-5E-06 St. Paul, MN 55144-1000 (USA) Edition April 2011 Copyright 3M 2011 All rights reserved. The manufacturer reserves the right to change the product at any time without notice.

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#### 1.2.2 Manual Maintenance

Keep the manual in a clean and dry place near the machine. Do not remove, tear, or rewrite parts of the manual for any reason. Use the manual without damaging it. In case the manual has been lost or damaged, ask your after-sale service for a new copy.

#### 1.2.3 Consulting the Manual

The manual is composed of:

- Pages which identify the document and the machine
- Index of the subjects
- Instructions and notes on the machine
- Enclosures, drawings and diagrams
- Spare parts (last section)

All pages and diagrams are numbered. The spare parts lists are identified by the figure identification number. All the notes on safety measures or possible dangers are identified by the symbol:

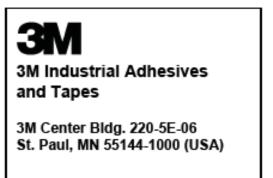


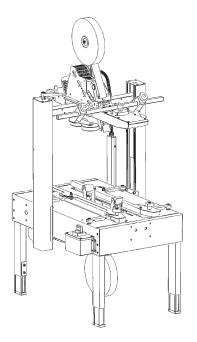
#### 1.2.1 Importance of the Manual

The manual is an important part of the machine; all information contained herein is intended to enable the equipment to be maintained in perfect condition and operated safely. Ensure that the manual is available to all operators of this equipment and is kept up to date with all subsequent amendments. Should the equipment be sold or disposed of, please ensure that the manual is passed on. Electrical and pneumatic diagrams are included in the manual. Equipment using PLC controls and/or electronic components will include relevant schematics or programs in the enclosure and in addition, the relevant documentation will be delivered separately.

#### 1.2.4 How to Update the Manual in Case of Modifications to the Machine

Modifications to the machine are subject to manufacturer's internal procedures. The user receives a complete and up-to-date copy of the manual together with the machine. Afterwards, the user may receive pages or parts of the manual which contain amendments or improvements made after its first publication. The user must use them to update this manual. 2.1 Data Identifying Manufacturer and Machine





3M Company St. Paul, MN 55144 USA	Part Number	<b>3M-N</b> For Industrial Us	Aatic™	C	Dus
Model	Serial Number	Year	Ampere	Watt 4000	563
Туре		Volt	Hertz	Phase	

#### 2.2 Warranty

Equipment Warranty and Limited Remedy: THE FOLLOWING WARRANTY IS MADE IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTY OF MERCHANTABILITY, THE IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE AND ANY IMPLIED WARRANTY ARISING OUT OF A COURSE OF DEALING, A CUSTOM OR USAGE OF TRADE:

3M sells its 3M-Matic<sup>™</sup> a20 Adjustable Case Sealer, Type 10700 with the following warranties:

- 1. The drive belts and the taping head knives, springs and rollers will be free from all defects for ninety (90) days after delivery.
- 2. All other taping head parts will be free from all defects for three (3) years after delivery.
- 3. All other parts will be free from all defects for two (2) years after delivery.

If any part is proved to be defective within its warranty period, then the exclusive remedy and 3M's and seller's sole obligation shall be, at 3M's option, to repair or replace the part, provided the defective part is returned immediately to 3M's factory or an authorized service station designated by 3M. A part will be presumed to have become defective after its warranty period unless the part is received or 3M is notified of the problem no later than five (5) calendar days after the warranty period. If 3M is unable to repair or replace the part within a reasonable time, then 3M at its option, will replace the equipment or refund the purchase price. 3M shall have no obligation to provide or pay for the labor required to install the repaired or replacement part. 3M shall have no obligation to repair or replace (1) those parts failing due to operator misuse, carelessness, or due to any accidental cause other than equipment failure, or (2) parts failing due to non-lubrication, inadequate cleaning, improper operating environment, improper utilities or operator error.

**Limitation of Liability:** 3M and seller shall not be liable for direct, indirect, special, incidental or consequential damages based upon breach of warranty, breach of contract, negligence, strict liability or any other legal theory.

The foregoing Equipment Warranty and Limited Remedy and Limitation of Liability may be changed only by a written agreement signed by authorized officers of 3M and seller.

#### Contents—a20 Adjustable Case Sealer

- (1) **a20** Adjustable Case Sealer, Type 10700
- (1) Upper Assembly Height Adjustment Crank Hardware
- (1) Tool and Spare Parts Kit
- (1) Instruction and Parts Manual

#### 1.1 Manufacturing Specifications / Description / Intended Use (continued)

The 3M-Matic<sup>™</sup> case sealing machines have been designed and manufactured in compliance with the legal requirements at the date of inception.

#### 1.2 How to Read and Use the Instruction Manual

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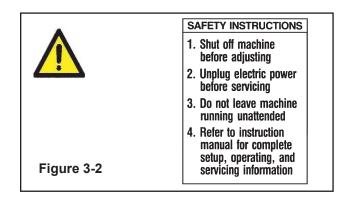
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#### 3.3 Table of Warnings

### 

- To reduce the risk associated with mechanical and electrical hazards:
- Read, understand, and follow all safety and operating instructions before operating or servicing the case sealer.
- Allow only properly trained and qualified personnel to operate and service this equipment.





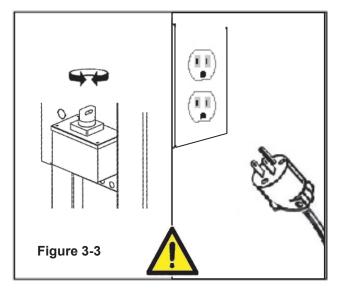
- To reduce the risk associated with hazardous voltage:
- Position electrical cord away from foot and vehicle traffic.

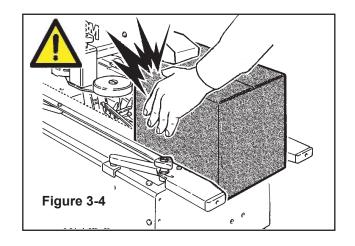
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- To reduce the risk associated with pinch, entanglement and hazardous voltage:
- Turn electrical supply off and disconnect before performing any adjustments, maintenance or servicing the machine or taping heads.



- To reduce the risk associated with pinch and entanglement hazards:
- Do not leave the machine running while unattended.
- Turn the machine off when not in use.
- Never attempt to work on any part of the machine, load tape, or remove jammed boxes from the machine while the machine is running.







- To reduce the risk associated with sharp blade hazards:
- Keep hands and fingers away from tape cutoff blades under orange blade guards. The blades are extremely sharp.

*Ia dcfHJbH* Tape cutting blade. Never remove the safety device which covers the blade on the top and bottom taping units. Blades are extremely sharp. Any error may cause serious injuries (Figure 3-5).



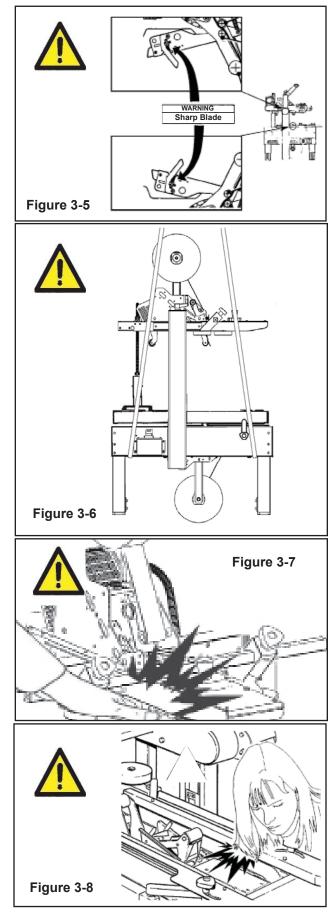
- To reduce the risk associated with fire and explosion hazards:
- Do not operate this equipment in potentially flammable/explosive environments.



- To reduce the risk associated with muscle strain:
- Use the appropriate rigging and material handling equipment when lifting or repositioning this equipment.
- Use proper body mechanics when removing or installing taping heads that are moderately heavy or may be considered awkward to lift.



- To reduce the risk associated with pinch hazards:
- Keep hands clear of the upper head support assembly as boxes are transported through the machine.
- Keep hands, hair, loose clothing, and jewelry away from box compression rollers.
- Always feed boxes into the machine by pushing only from the end of the box.
- Keep hands, hair, loose clothing, and jewelry away from moving belts and taping heads.



#### 3.4 Operator's Qualifications

- Machine Operator
- Mechanical Maintenance Technician
- Electrical Maintenance Technician
- Manufacturer's Technician/Specialist

#### 3.5 Number of Operators

The operations described below have been analyzed by the manufacturer; the recommended number of operators for each operation provides the best and safest work performance.

*Note:* A smaller or greater number of operators could be unsafe.

#### 3.6 Instructions for a Safe Use of the Machine / Definition of Operator's Qualifications

Only persons who have the skills described in the skill levels section should be allowed to work on the machine. It is the responsibility of the user to appoint the operators having the appropriate skill level and the appropriate training for each category of job.

#### 3.7 Residual Hazards

The case sealer **a20** has been designed and incorporates various safety protections which should never be removed or disabled. Notwithstanding the safety precautions conceived by the designers of the machine, it is essential that the operator and service personnel be warned that the following residual hazards exist which cannot be eliminated.

#### 3.8 Recommendations and Measures to Prevent Other Hazards which Cannot be Eliminated

- The operator must stay on the working position shown in the Operation Section. Never touch the running driving belts or put his hands inside any cavity.
- The operator must pay attention to the blades during the tape replacement.

### WARNING

- To reduce the risk associated with mechanical and electrical hazards:
- Read, understand, and follow all safety and operating instructions before operating or servicing the case sealer.
- Allow only properly trained and qualified personnel to operate and service this equipment.

#### 3.9 Personal Safety Measures

Safety glasses, safety gloves, safety helmet, safety shoes, air filters, ear muffs - None is required except when recommended by the user.

### 3.10 Predictable Actions which are Incorrect and Not Allowed

- Never try to stop/hold the box while being driven by the the belts.
   Only use the EMERGENCY STOP BUTTON.
- Never work without the safety protections.
- Never remove or disable the safety devices.
- Only authorized personnel should be allowed to carry out the adjustments, repairs or maintenance which require operation with reduced safety protections. During such operations, access to the machine must be restricted. When the work is finished, the safety protections must immediately be reactivated.
- The cleaning and maintenance operations must be performed after disconnecting the electric power.
- Do not modify the machine or any part of it. The manufacturer will not be responsible for any modifications.
- Clean the machine using only dry cloths or light detergents. Do not use solvents, petrols, etc.
- Install the machine following the suggested layouts and drawings. The manufacturer will not be responsible for damages caused by improper installation.

### 3.11 Operator's Skill Levels Required to Perform the Main Operations on the Machine

The Table shows the minimum operator's skill for each machine operation.

*Important:* The factory manager must ensure that the operator has been properly trained on all the machine functions before starting work.

#### Skill 1: Machine Operator

This operator is trained to use the machine with the machine controls, to feed cases into the machine, make adjustments for different case sizes, to change the tape and to start, stop and restart production.

**Skill 2: Mechanical Maintenance Technician** This operator is trained to use the machine as the MACHINE OPERATOR and in addition is able to:

- · Work with the safety protection disconnected
- · Check and adjust mechanical parts

• Carry out machine maintenance operations/repairs He is not allowed to work on live electrical components

#### Skill 2a: Electrical Maintenance Technician

This operator is trained to use the machine as the MACHINE OPERATOR and in addition is able to:

- Work with the safety protection disconnected
- Check and adjust mechanical parts
- Carry out machine maintenance operations / repairs / adjustments / repair electrical components He is allowed to work on live electrical panels,

#### connector blocks, control equipment, etc.

#### Skill 3: Specialist from the Manufacturer

Skilled operator sent by the manufacturer or its agent to perform complex repairs or modifications (on agreement with the customer).

### WARNING

- To reduce the risk associated with mechanical and electrical hazards:
- Allow only properly trained and qualified personnel to operate and service this machine

#### Operator's Skill Levels Required to Perform the Main Operations on Machine

Operation	Machine Status	Required Operator Skill	Number of Operators
Machine installation and setup	Running with safety protections disabled	2 and 2a	2
Adjusting box size	Stopped by pressing the EMERGENCY STOP button	1	1
Tape replacement	Stopped by pressing the EMERGENCY STOP button	1	1
Blade replacement	Electric power disconnected	2	1
Drive belt replacement	Electric power disconnected	2	1
Ordinary maintenance	Electric power disconnected	2	1
Extraordinary mechanical maintenance	Running with safety protections disabled	3	1
Extraordinary electrical maintenance	Running with safety protections disabled	2a	1

#### 3.12 Component Locations

Refer to **Figure 3-9** below to acquaint yourself with the various components and controls of the case sealer. Also refer to Manual 2 for taping head components.

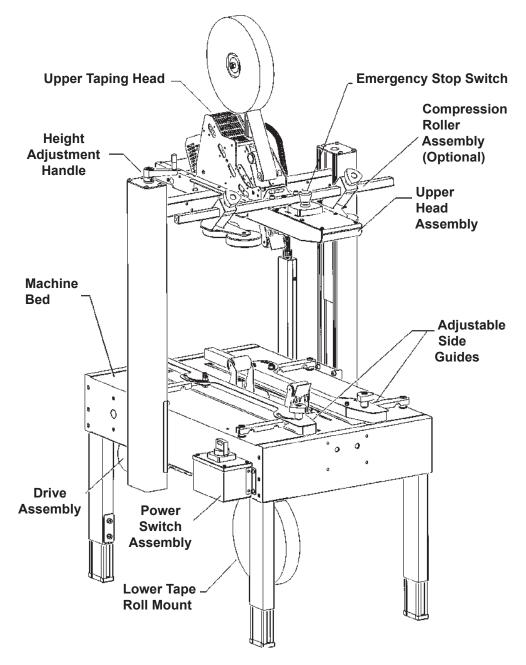


Figure 3-9—a20 Case Sealer Components (Left Front View)

#### 3.13 Table of Warnings and Replacements Labels (continued)

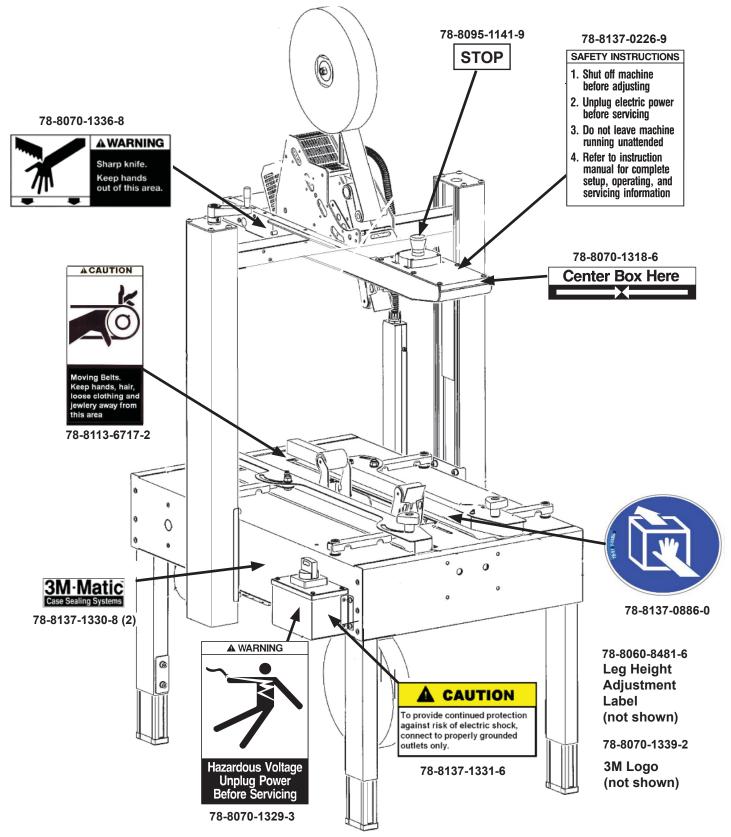


Figure 3-9 - Replacement Labels / 3M Part Numbers

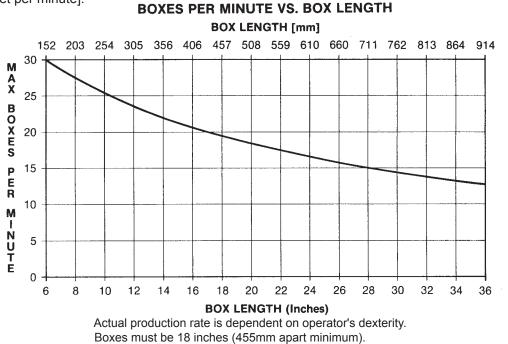
#### 4.1 Power Requirements:

Electrical: 120 Volt, 60Hz, 1Ph

The machine is equipped with a 2.4m [8 foot] standard neoprene covered power cord and a grounded plug. Contact your 3M Representative for power requirements not listed.

#### 4.2 Operating Rate:

Up to 30 cases per minute, depending on box length. Box drive belt speed is approximately 0.38m/s [75 feet per minute].



#### 4.3 Operating Conditions:

Use in dry, relatively clean environments at 4.4°C to 48.9°C [40°F to 120°F] with clean, dry boxes.

*Note:* Machine should not be washed down or subjected to conditions causing moisture condensation on components.



#### 4.4 Tape:

Scotch<sup>®</sup> pressure-sensitive film box sealing tapes.

#### 4.5 Tape Width:

36mm [1 1/2 inches] minimum to 48mm [2 inches] maximum

a20-NA

#### 4.6 Tape Roll Diameter:

Up to 405mm [16 inches] maximum on a 76mm [3 inches] diameter core.

(Accommodates all system roll lengths of Scotch® film tapes.)

#### 4.7 Tape Application Leg Length—Standard:

70mm ± 6mm [2.75 inches ± 0.25 inches ]

#### Tape Application Leg Length—Optional:

50mm ± 6mm [2 inches ± 0.25 inches] See "Removing Taping Heads Procedure—Changing the Tape Leg Length".

#### 4.8 Box Board:

Style: regular slotted containers, RSC 125–275P.S.I. bursting test, single wall or double wall B or C flute. 23–44 lbs. per inch of width Edge Crush Test (ECT)

#### 4.9 Box Weight and Size Capacities:

A. Filled Box Weight: 5 lbs.–65 lbs. [2.3kg–29.5kg]. Contents must support flaps.

Maximum		
nlimited		
6mm [21.5 inches] 6mm [21.5 inches]		
1		

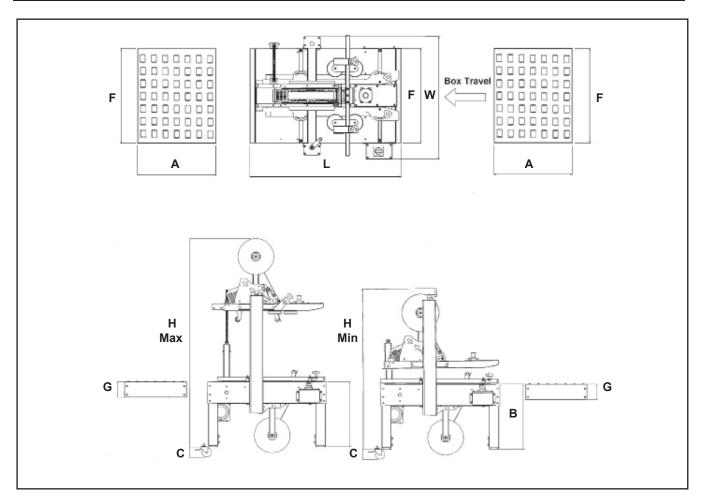
- \* Cartons narrower than 250mm [10 inches] in width may require more frequent belt replacement because of limited contact area.
- \*\* 90mm [3.5 inches] height with heads adjusted to apply 50mm [2 inches] tape leg lengths. See "Removing Taping Heads Procedure—Changing the Tape Leg Length".
- *Note:* The case sealer can accommodate most boxes within the size range listed above. However, if the box length (in direction of seal) to box height ratio is 0.6 or less, test-run several boxes to ensure proper machine performance.

#### DETERMINE THE BOX LIMITATIONS BY COMPLETING THIS FORMULA:

#### BOX LENGTH IN DIRECTION OF SEAL = SHOULD BE GREATER THAN 0.6 BOX HEIGHT

Any box ratio approaching this limitation should be test run to ensure performance. Test-run any box ratio approaching this limitation to ensure performance.

**4.10 Machine Noise Level:** Acoustic pressure measured at a distance of 1m. from machine with Scotch PVC adhesive tape in operation; 78dB Acoustic radiation pressure at 1.6m. height with Scotch PVC adhesive tape in operation; 73dB Measurement taken with appropriate instrument: (Type SPYRI-MICROPHON 11).



#### 4.11 Machine Dimensions:

	W	L	н	<b>A</b> *	В	C**	F	G
<b>Minimum</b> mm [Inches]	813 [32.0]	1000 [39.4]	1355 [53.5]	460 [18.1]	545 [21.5]**	106 [4.2]	620 [24.5]	130 5.1
<b>Maximum</b> mm [Inches]			2038 [80.25]**		800 [31.5]**			

\* Infeed/Exit conveyors are optional

\*\* Casters are optional

Weight: 175kg [385 lbs] crated (approximate) 162kg [334 lbs] uncrated (approximate)

#### 4.12 Setup Recommendations:

- Machine must be level.
- Customer supplied infeed and exit conveyors (if used) should provide straight and level box entry and exit.
- Exit conveyors (powered or gravity) must convey sealed boxes away from machine.

#### 5.1 Shipment and Handling of Packed Machine

- The machine is fixed on the pallet with four bolts and can be lifted by using a fork truck.
- The package is suitable to travel by land and by air.
- Optional sea freight package is available.

### Packaging Overall Dimensions (Figure 5-1)

See Specifications.

During the shipment it is possible to stack a maximum of 2 machines (Figure 5-2).

#### 5.2 Packaging for Overseas Shipment (Optional - Figure 5-3)

The machines shipped by sea freight are covered by an aluminum/polyester/polythene bag which contains dehydrating salts.

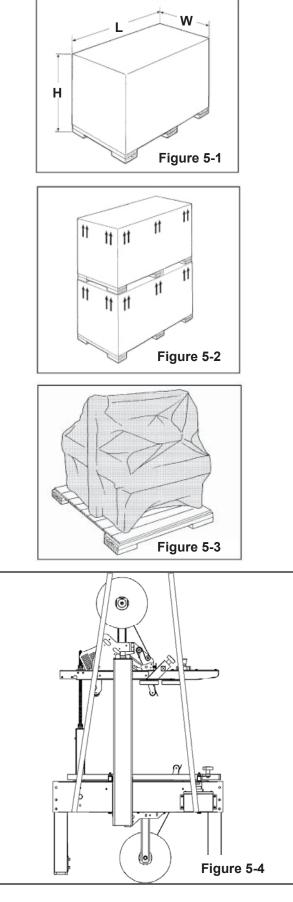
### 5.3 Handling and Transportation of Uncrated Machine

The uncrated machine should not be moved except for short distances and indoors ONLY. Without the supporting pallet, the machine is exposed to damage and may cause injuries. To move the machine, use belts or ropes, paying attention to place them in the points indicated using care to not interfere with the lower taping head **(Figure 5-4).** 

#### 5.4 Storage of the Packed or Unpacked Machine

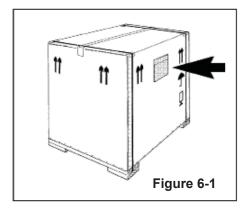
If the machine is not used for a long period, please take the following precautions:

- Store the machine in a dry and clean place.
- If the machine is unpacked it is necessary to protect it from dust.
- Do not stack anything over the machine.
- It is possible to stack a maximum of two (2) machines (if they are in their original packing).

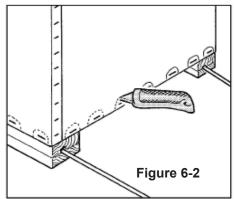


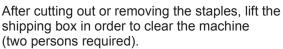
#### 6.1 Uncrating

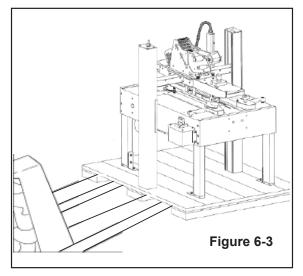
The envelope attached to the shipping box contains the uncrating instructions of the machine (Figure 6-1).



Cut straps. Cut out staple positions along the bottom of the shipping box (or remove staples with an appropriate tool - **Figure 6-2**)





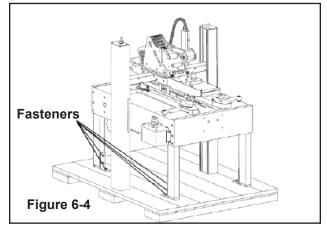


Transport the machine with a fork-lift truck to the operating position.

Lift the pallet at the point indicated in **Figure 6-3** (weight of machine + pallet = see **Section 4**).

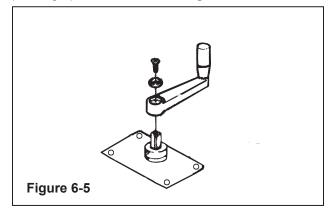
#### **Removal of Pallet**

Using a 10mm combination wrench, remove the fasteners that secure the case sealer legs to pallet at each leg (as shown in **Figure 6-4)**.



Remove the leg height adjustment cap screws and replace with the cap screws from the tool kit. Loosen both cap screws. Remove and replace them one at a time to keep the inner threaded plate in position.

Using a 3mm hex wrench, remove the Height Adjustment Handle and reinstall it with the handle pointing upward as shown in **Figure 6-5**.



#### 6.2 Disposal of Packaging Materials

The **a20** package is composed of:

- Wooden pallet
- Cardboard shipping box
- Wooden supports
- Metal fixing brackets
- PU foam protection
- PP plastic straps
- Dehydrating salts in bag
- Special bag of laminated polyester/aluminium/ Polyethylene (sea freight package only)
- Polyethylene protective material

For the disposal of the above materials, please follow the environmental directives or the law in your country.

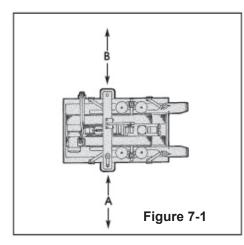
#### 7.1 Operating Conditions

(see Section 4).

#### 7.2 Space Requirements for Machine Operation and Maintenance Work

Minimum distance from wall (Figure 7-1):

A = 1.0m. (39.4 inches) B = 0.7m. (27.6 inches) Minimum height = 2.7m. (106.3 inches)

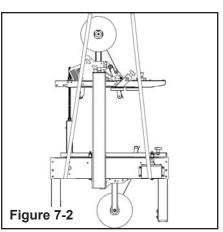


### 

- To reduce the risk associated with mechanical and electrical hazards:
- Read, understand, and follow all safety and operating instructions before operating or servicing the case sealer.

#### 7.3 Tool Kit Supplied with the Machine

A tool kit containing some tools are supplied with the machine. These tools should be adequate to set-up the machine, however, other tools supplied by the customer will be required for machine maintenance. 7.4 Machine Positioning / Bed Height



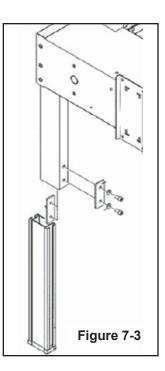
### WARNING

- To reduce the risk associated with muscle strain:
- Use the appropriate rigging and material handling equipment when lifting or repositioning this equipment.
- Use proper body mechanics when removing or installing taping heads that are moderately heavy or may be considered awkward to lift.

1 - Lift the machine with belts or ropes paying attention to place the belts in the points (**Figure 7-2**).

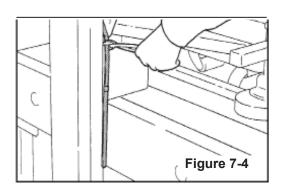
To set the machine bed height, do the following:

- 2 Adjust machine bed height. The case sealer is equipped with four adjustable legs that are located at the corners of the machine frame. The legs can be adjusted to obtain different machine bed heights (Figure 7-3). Also refer to the "Specifications" section.
- 3 Lock the screws.
- 4 Repeat the operation for all legs.
  (It is not necessary to fix or anchor the machine to the floor).



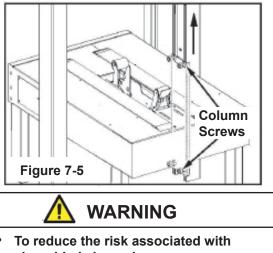
#### 7.5 Removal of Plastic Ties

Cut the plastic which attaches the top head to the frame and remove the polystyrene blocks (**Figure 7-4**).

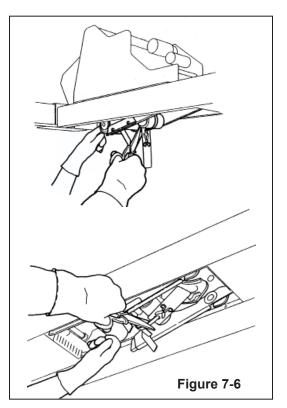


#### 7.6 Assembly Completion

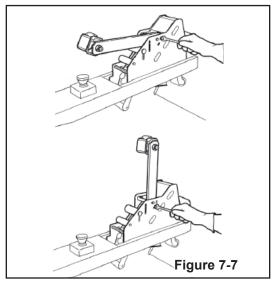
- 1. Using a 6mm hex wrench, loosen the four (4) screws (Figure 7-5) in the column without the height adjustment handle.
- 2. Raise the column by hand until it reaches the stop at the bottom end of the column.
- 3. Fasten the four (4) column screws.
- 4. Using a 6mm hex wrench, loosen the four (4) screws that secure the column (with the handle) to the machine bed.
- 5. Turn the height adjustment handle counterclockwise to raise the column until it reaches the stop.
- 6. Fasten the four (4) column screws.
- 7. Raise the upper head by turning the height adjustment handle clockwise and remove the polystyrene blocks.



- sharp blade hazards:Keep hands and fingers away from tape
- cutoff blades under orange blade guards. The blades are extremely sharp.



- Cut the plastic ties holding the upper and lower taping heads in position. Hold taping head buffing roller while cutting the plastic tie. Allow buffing/applying arms to extend slowly. (Figure 7-6).
- 9. Verify that the upper and lower taping heads move freely by pushing the buffing roller into the taping head.
- 10. Ensure that the tape drum bracket assembly (located on the upper and lower taping heads) is mounted vertically, as shown in **Figure 7-7.**
- *Note:* The tape drum bracket assembly may be pivoted to provide tape roll clearance if necessary.





- To reduce the risk associated with sharp blade hazards:
- Keep hands and fingers away from tape cutoff blades under orange blade guards. The blades are extremely sharp.

#### 7.7 Completion of Taping Heads

See Manual 2 for Complete Instructions.

*Important* – Do not cut against the apply roller - roller damage could occur.

### \Lambda WARNING

- To reduce the risk associated with mechanical and electrical hazards:
- Read, understand, and follow all safety and operating instructions before operating or servicing the case sealer.
- To reduce the risk associated with hazardous voltage:
- Position electrical cord away from foot and vehicle traffic.

#### 7.8 Preliminary Electric Inspection

Before connecting the machine to the mains, please carry out the following operations:

- **7.8.1** Make sure that the socket is provided with an earth protection circuit and that both the mains voltage and the frequency match the specifications on the name plate.
- **7.8.2** Check that the connection of the machine to the mains meets the safety regulations in your country.
- **7.8.3** The user will be responsible for testing the short-circuit current in its facility and should check that the short-circuit amperage setting of the machine is compatible with all the components of the mains system.

#### 7.9 Machine Connection to the Mains

- Push the LATCHING EMERGENCY STOP BUTTON.
- The main switch is normally turned OFF.

Connect the power cord supplied with the machine to a wall socket using a plug which complies with the safety regulations of your country.

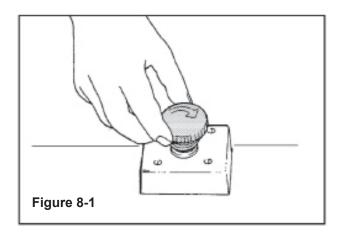
#### 7.10 Inspection of Phases (For Three-Main Phases Only)

(N/A for this machine)

#### 8.1 Description of the Working Cycle

After having closed the top flaps of the carton, the operator pushes it under the top infeed end in order to avoid the opening of the top flaps. Further pushing causes the two top and bottom belts to drive the box through the taping heads which automatically seal the top and bottom seams.

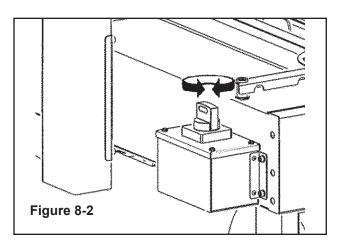
The carton is then expelled on the exit conveyor.



#### 8.2 Definition of Running Mode

The case sealer **a20** has only one (automatic) operating mode with:

- The EMERGENCY STOP BUTTON unlocked (Figure 8-1)
- The main rotary switch start switch "ON" (Figure 8-2)

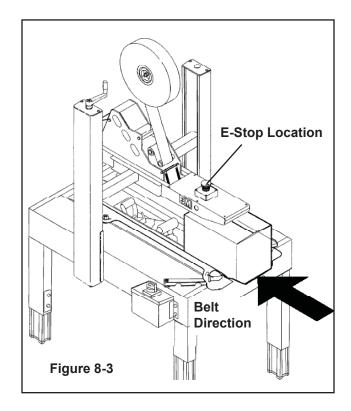


#### 8.3.1 Normal Stop Procedure

When the main switch is turned OFF, the machine stops immediately at any point of the working cycle. The same thing happens in case of electrical failure or when the machine is disconnected from the mains.

#### 8.3.2 Emergency Stop

The LATCHING EMERGENCY STOP BUTTON is located on the top center of the machine (This part is not produced by the machine manufacturer **Figure 8-1**).

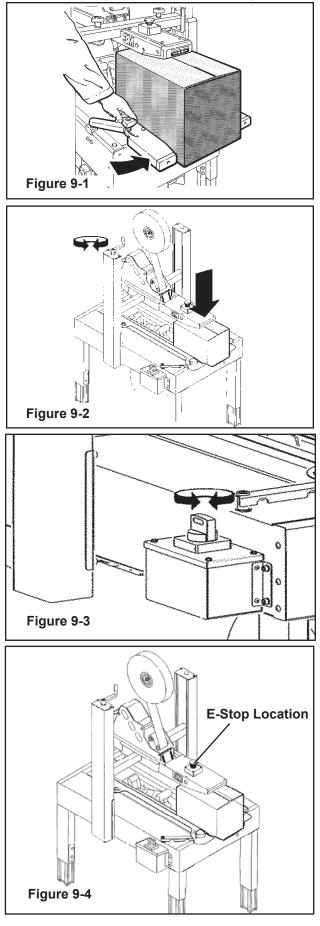


9.1 Box Width Adjusting Knobs

9.2 Box Height Adjusting Crank



9.4 Latching Emergency Stop Button



#### 10.1 Blade Guards

Both the top and bottom taping units have a blade guard (See Manual 2: AccuGlide™ 2+ STD 2 Inch Taping Heads).

#### Important!

Use care when working near blades as blades are extremely sharp. If care is not taken, severe injury to personnel could result.

#### **10.2 Emergency Stop Button**

The box drive belts are turned on and off with the electrical switch on the side of the machine frame.

The machine electrical supply can be turned off by pressing the latching emergency stop switch. To restart machine, rotate the emergency stop switch clockwise to release the switch latch. Restart machine by pushing the Start button (Figure 10-1).

#### Important!

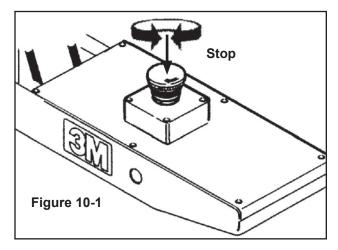
All adjustments and tape loading require that the machine is stopped and the emergency stop button is locked.

Main electric switch "OFF". Severe injury to personnel could result by lack of observing these elementary rules



### • To reduce the risk associated with hazardous voltage:

Position electrical cord away from foot and vehicle traffic.



#### 10.3 Electric System / Circuit Breaker

The electric system is protected by a ground wire whose continuity has been tested during the final inspection. The system is also subject to insulation and dielectric strength tests.

#### **Circuit Breaker**

The case sealer is equipped with a circuit breaker which trips if the motors are overloaded. Located inside the electrical enclosure on the side of the machine frame just below the machine bed, the circuit breaker has been pre-set and requires no further maintenance.

### WARNING

- To reduce the risk associated with mechanical and electrical hazards:
- Allow only properly trained and qualified personnel to operate and service this equipment.

If circuit is overloaded and circuit breaker trips, unplug machine from electrical power:

- 1. Determine cause of overload and correct.
- 2. Plug in machine.
- 3. Press machine "On" button to resume case sealing.
- *Important:* The use of an extension cord is not recommended. However, if one is needed for temporary use, it must:
- Have a wire size of 1.5mm diameter [AWG 16]
- Have a maximum length of 30.5m [100 ft]
- Be properly grounded.

#### 11.1 Box Width Adjustment

Place box on infeed end of frame bed and align top flap center seam with arrows on front of upper frame. Move in and lock the side by tightening the appropriate knobs (**Figure 11-1**).

#### 11.2 Box Height Adjustment

Lower top head by turning the height adjustment crank clockwise until it lightly presses the case **(Figure 11-2).** 

#### 11.3 Adjustment of Top Flap Compression Rollers (Optional)

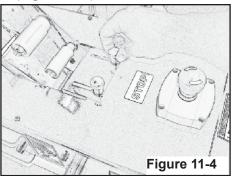
*Note:* This step applies to machines with the optional box compression rollers.

For machines with the optional box compression rollers, move the top flap compression rollers until they contact the sides of the box. Tighten knobs to secure rollers in operating position (Figure 11-3).

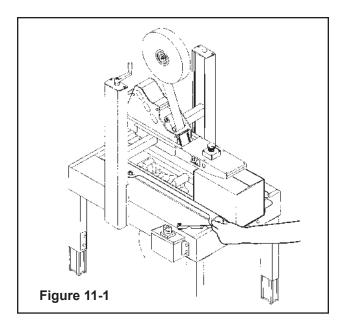
#### 11.4 Changing the Tape Leg Length

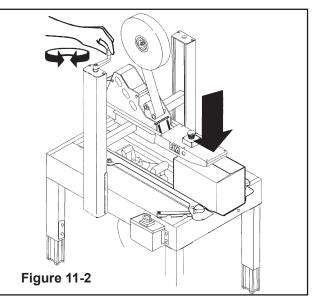
Taping heads are preset to apply 70mm [2.75 inches] long tape legs. To change tape leg length to 50mm [2.0 inches], refer to Instructions below and also to Manual 2, "Removing Taping Heads Procedure -Changing the Tape Leg Length".

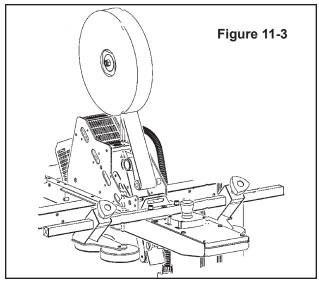
- 1. Remove tape from upper taping head and raise upper assembly to a convenient working height.
- 2. Loosen the upper taping head clamp thumb screws. Move the clamp away from the taping head (Figure 11-4).



- 3. Slide head forward and lift upward to remove
- 4. Raise upper assembly to provide working room around lower taping head and remove tape from taping head.
- 5. Lift the lower taping head straight up to remove it from the case sealer bed (Figure 11-5).
- 6. Refer to Manual 2, "Adjustments—Changing Tape Leg Length", for taping head setup.
- 7. Replace taping heads in the reverse order of disassembly.







a20-NA

#### 11.5 Run Boxes to Inspect Adjustment (Figure 11-6)

*Important:* Before starting the machine, verify that no tools or other objects are on the conveyor bed.

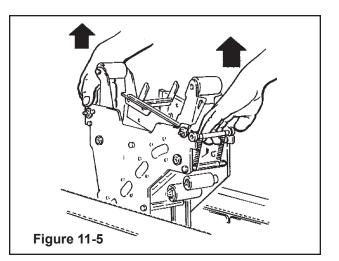
Turn electrical switch to **On** to start drive belts. Move box forward under upper taping head until it is taken away by the drive belts. Always push at the end of the box. If box is hard to move under head or is crushed, raise the head slightly. If box movement is jerky or stops under upper head, lower the upper head slightly to add more pressure between box and drive belts.

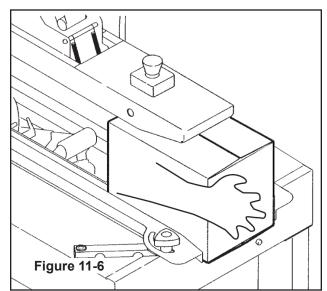


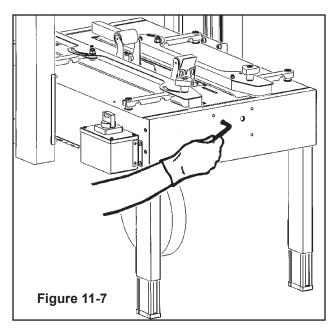
- To reduce the risk associated with pinch hazards:
- Keep hands clear of the upper head support assembly as boxes are transported through the machine.
- Keep hands, hair, loose clothing, and jewelry away from box compression rollers.
- Always feed boxes into the machine by pushing only from the end of the box.
- Keep hands, hair, loose clothing, and jewelry away from moving belts and taping heads.
- **Note** The upper head has a unique feature for overstuffed boxes. The head will raise up to 13mm [0.5 inches] to compensate for this condition.
- *Important* If drive belts are allowed to slip on box, excessive belt wear will occur.

Refer to **Figure 11-7** and adjust belt tension as follows (for belt replacement and tension specifications - refer to **Section 13 / Maintenance and Repairs**):

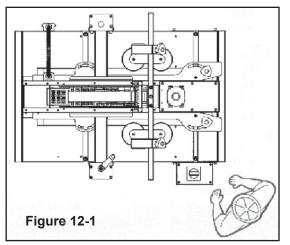
- 1. Using a 17mm open end wrench, loosen, but do not remove, the M10 lock nut.
- Reset the tension on the drive belts as needed. Adjust the M8 tension screws in (clockwise) to increase tension or out (counterclockwise) to decrease tension. Tighten lock nut to secure tension setting.





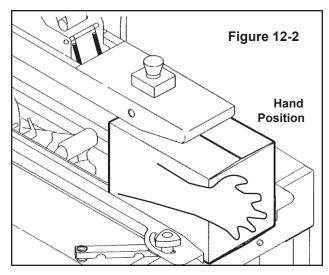


12.1 Operator's Correct Working Position and **Operational Flow (Figure 12-1).** 



Once the box has been filled, close its top flaps and push it between the top and bottom drive belts. Always keep hands in position as shown in Figure 12-2.

The box will be automatically sealed with adhesive tape on the top and bottom box seams. Then the box will be expelled on the exit conveyor.



#### 12.2 Starting the Machine

*Important:* Before starting the machine, verify that no tools or other objects are on the conveyor bed.

Turn the main rotary switch ON after the EMERGENCY BUTTON is released (Figure 12-3).

#### **12.3 Starting Production**

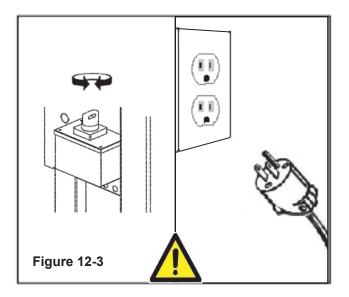
After having adjusted the machine according to the box dimensions (height-width), let the machine run without cartons and check its safety devices. Then start the working cycle.

#### 12.4 Tape Replacement and Threading

#### See Manual 2: AccuGlide<sup>™</sup> 2+ STD 2 Inch Taping Heads.

Press the

LATCHING EMERGENCY STOP BUTTON.



#### 12.5 Box Size Adjustment

Repeat all the operations shown in Section 11 - Setup and Adjustments.

#### 12.6 Cleaning

Before carrying out any cleaning or maintenance operation stop the machine by turning the OFF rotary switch on the main and disconnect the electric power (Figure 12-3).

#### 12.7 Table of Operation Adjustments -**Operator Qualifications**

- 1 Tape loading and threading 1 2 Tape web alignment 1 3 Adjustment of one way tension roller 1 4 Adjustment to box size (H and W) 1 5 Top flap compression rollers 1 6 Adjustment of tape applying spring 1
- 7 Conveyor bed height adjustment
- 1 8 Special Adjustment-Changing tape leg length 2
- 9 Special Adjustment-Column re-positioning 2

#### 12.8 Safety Devices Inspection

- 1 Taping units blade guard
- 2 Latching emergency stop button
- 3 STOP (OFF) main rotary switch

a20-NA

#### 12.9 Troubleshooting Guide

not convey boxes V T e T T T T n	Narrow boxes Worn drive belts or friction rings Top taping head does not apply enough pressure Top flap compression roller too tight Taping head applying spring holder missing Taping head applying spring set too high	Check machine specifications. Boxes are narrower than recommended causing slippage and premature belt wear Replace drive belts or friction rings Adjust the box height adjustment using the crank handle Readjust compression rollers Replace spring holder Reduce spring pressure
not turn E N N	Worn or missing friction rings Drive belt tension too low Electrical disconnect Motor not turning Motor capacitor Motor fan cover dented	Replace friction rings Adjust belt tension Check power and electrical plug Evaluate and correct
mechanisms d	Machine's minimum height stop does not match tape head leg length setting	Check manual to make sure taping heads match machine setting
Drive belts break	Worn belt Improper setup causing boxes to jam	Replace belt
Light boxes tip back on exit	Upper head assembly down too far	Carefully adjust upper head assembly
as boxes pass through machine	Dry compression rollers Dry column bearings Defective column bearings	Lubricate compression rollers Lubricate column bearings Replace column bearings

taping heads.

### 13.1 Safety Measures (see section 3)

Carrying out maintenance and repairs may imply the necessity to work in dangerous situations. (See **Section 3**)

	•
	🗥 WARNING
•	To reduce the risk associated with mechanical and electrical hazards:
-	Read, understand, and follow all safety and operating instructions before operating or servicing the case sealer.
-	Allow only properly trained and qualified personnel to operate and service this equipment.
•	To reduce the risk associated with pinch, entanglement and hazardous voltage:
-	Turn electrical supply off and disconnect before performing any adjustments, maintenance or servicing the machine or

### 13.3 Recommended Frequency of Inspection and Maintenance Operations

Operation	Frequency	Qualification	Sections	
Inspection safety feature	es daily	1	13.4	
Cleaning of machine	weekly	1	13.5	
Cleaning of cutter blade	weekly	2	13.6	
Oiling of felt pad	weekly	2	13.7	
Lubrication	monthly	2	13.7-13.8	
Blade replacement	when worn	2	See Manual 2	
Drive belt replacement	when worn	2	13.10	

### 13.4 Inspections to be Performed Before and After Every Maintenance Operation

Before every maintenance operation, turn the main rotary switch OFF and disconnect the plug from the control panel. During the maintenance operation only the operator responsible for this duty must work on the machine. At the end of every maintenance operation, check the safety devices.

### 13.5 Check Efficiency of Safety Features

- 1. Blade guard assembly upper taping head
- 2. Blade guard assembly lower taping head
- 3. Latching Emergency stop button with mechanical lock (interrupt supply of electrical power)
- 4. Turn the main rotary switch STOP/OFF
- 5. Safety guards drive belts

# 13.2 Tools and Spare Parts Supplied with the Machine

See Spare Parts Order Section.

### 13.6 Cleaning of Machine

### **Qualification / Skill 1**

A weekly cleaning with dry rags or diluted detergents is necessary. Cardboard boxes produce a significant quantity of dust and paper chips when processed or handled in case sealing equipment. If this dust is allowed to build up on machine components, it can cause component wear and overheating of drive motors. The dust buildup is best removed from the machine with a vacuum cleaner. Depending on the number of cartons processed, this cleaning should be done weekly. Excessive buildup that cannot be removed by vacuuming should be removed with a damp cloth.

# 13.7 Cleaning of Cutter Blade

### Qualification / Skill 2

- Should tape adhesive buildup occur, carefully wipe clean with oily cloth or brush. Oil prevents the buildup of tape adhesive (Figure 13-1).
- Worn or damaged cutter blades must be replaced promptly in order to guarantee a perfect cut of the tape. Lubricate the felt pad on the blade guard without saturating it.

### 13.8 Lubrication

Most of the machine bearings, including the drive motor, are permanently lubricated and sealed and do not require additional lubricant.

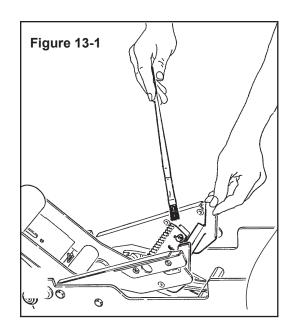
Figures illustrate the taping head and frame points which should be lubricated every 250 hours of operation. Lubricate the rotating and pivoting points noted by the arrows with a synthetic lubricant. At the same time, a small amount of Silicone should be applied to the end of each spring where the loop is secured to an eyelet (Figures 12.2)

(Figures 13-2).

*Note:* Wipe off excess Silicone. It will attract dust which can cause premature equipment wear and jamming. Take care that Silicone is not left on the surface of rollers around which tape is threaded, as it can contaminate the tape's adhesive.

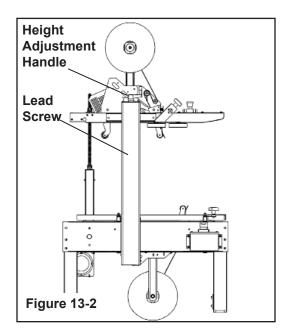
### **13.9 Lubrication Products**

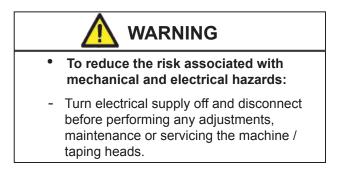
• Synthetic Silicone Spray may be used on Lead Screw (Figure 13-2).



# WARNING

- To reduce the risk associated with sharp blade hazards:
- Keep hands and fingers away from tape cutoff blades under orange blade guards. The blades are extremely sharp.

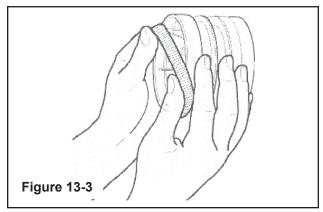




### 13.10 Drive Pulley Ring and Drive Belt Replacement

**Drive Pulley Rings** 

Before installing a new belt, check the orange plastic drive pulley rings for wear. If torn, broken, or worn smooth, replace the rings (Figure 13-3).



### **Box Drive Belt Replacement**

*Note* – 3M recommends the replacement of drive belts in pairs, especially if belts are unevenly worn.

Replacing Drive Belts

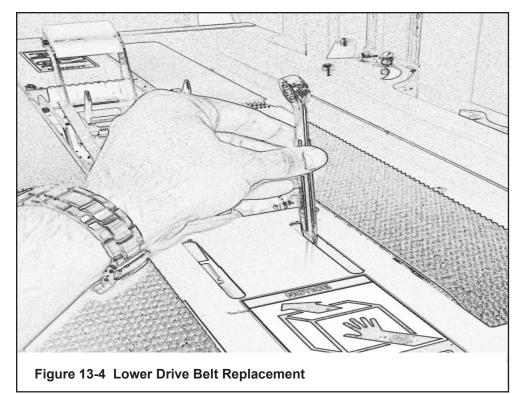
- 1. Using a 17mm open-end wrench, loosen, but do not remove the lock nut as shown in **Figure 13-4.**
- 2. Using a 6mm hex wrench, loosen tension screw until all belt tension is removed as shown in **Figure 13-4.**
- 3. Pull out belt splicing pin.

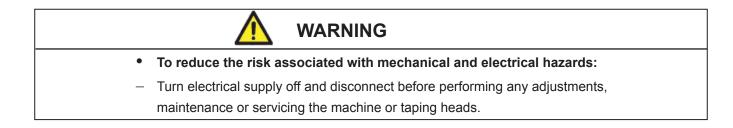
*Tip:* The old belt may be used to install the new belt. Attach the new belt to the old belt and pull the new belt into the position while simultaneously removing the old belt.

- 4. If using the old belt, continue with the next step. If the old belt cannot be used to install a new belt, remove the lower cover between the belts).
- 5. Place new belt over pulleys with laced splice at top.
- 6. Insert splicing pin.

*Important:* Pin must not extend beyond edge of belt.

 Adjust belt tension as explained on the following page and in "Setup and Adjustments-Box Drive Belt Tension."



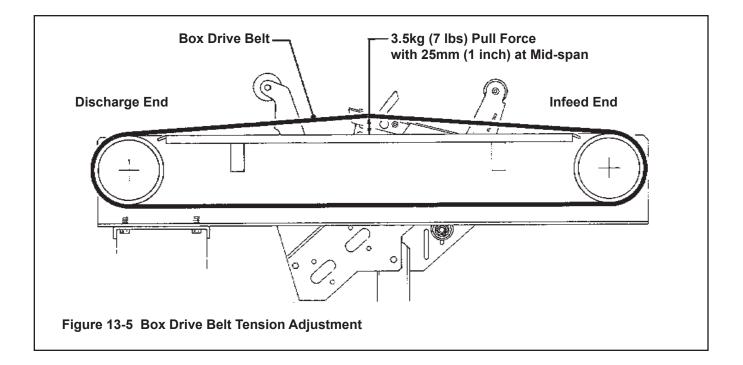


### 13.11 Box Drive Belt Tension

The two (2) continuously moving drive belts convey boxes through the tape applying mechanism. The box drive belts are powered by an electric gear motor.

Tension adjustment of these belts may be required during normal operation (for Belt Tension Adjustment - refer to **Section 11** / **Setup and Adjustments**). Belt tension must be adequate to positively move the box through the machine and the belts should run fully on the surface of the pulleys at each end of the frame. The idler pulleys on the infeed end are adjusted in or out to provide proper belt tension. Each belt is adjusted separately.

Belt tension is obtained by tightening the adjustment screw so that a moderate pulling force of 3.5kg [7 lbs.] applied at the mid span, as shown in **Figure 13-5**, will deflect the belt 25mm [1 inch]. This will assure positive contact between the belt and the drive pulley on the discharge end of the drive assembly.



### 13.12 List of the Maintenance Operations

### Date: Description of Operation


### **14-ADDITIONAL INSTRUCTIONS**

### 14.1 Information for Disposal of Machine

The machine is composed of the following materials:

- Steel structure
- Nylon rollers
- Drive belts in PVC
- Nylon pulleys

For machine disposal, follow the regulations published in each country.

### 14.2 Emergency Procedures

In case of danger/fire: Disconnect plug of power cable from power supply. (Figure 14-1)

### IN CASE OF FIRE

Use a fire extinguisher containing CO2 (Figure 14-2).

# Figure 14-1

### 15-ENCLOSURES / SPECIAL INFO.

### 15.1 Statement of Conformity

See Section 1.1.

### **15.2 Emission of Hazardous Substances**

Nothing to report

### 15.3 List of Safety Features

List of components/assemblies with safety functions

- LATCHING EMERGENCY STOP BUTTON
- Thermal cut-out relay
- Fixed guards upper drive belts
- Blade guard assemblies on both taping heads
- *Important:* Install earth wire protection on electrical installation.

All safety features/components must be explained and highlighted to all operators and to the person responsible for spare parts in order to ensure that these components are always on hand or ordered as a priority procedure.

ONLY USE ORIGINAL REPLACEMENT PARTS

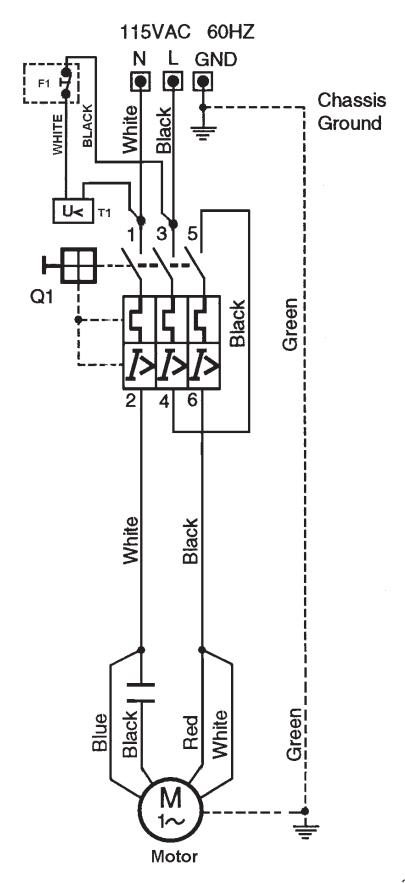
### 15.4 Copies of Test Reports, Certifications (etc.) Required by User

NA

Figure 14-2

### 16.1 Electric Diagram

1 Phase



### 16.2 Spare Parts Order

### **Replacement Parts Ordering Information and Service**

Refer to the first page of this instruction manual "Replacement Parts and Service Information".

### Order parts by quoting the following information:

(Refer to the Identification Plate on the Machine)

- MACHINE MODEL
- SERIAL NUMBER
- FIGURE NO.
- POSITION
- 3M PART NO. (11 DIGITS)
- DESCRIPTION
- QUANTITY

Refer to Manual 2 for recommended taping head spare parts.

### Important!

The machine is constantly revised and improved by our designers. The spare parts catalogue is also periodically updated. It is very important that all the orders of spare parts make reference to the serial number of the machine (located on the identification plate on the machine).

The manufacturer reserves the right to modify the machine at any time without notice.

### It is suggested that the following spare parts be ordered and kept on hand.

 a20
 Operation
 Description

 2
 78-8070-1531-4
 Belt, Drive with Pin

### Tool Kit

A tool kit, part number 78-8060-8476-6, is available as a stock item. The kit contains the necessary open-end and hex socket wrenches for use with the metric fasteners on the case sealer. The threading tool, part number 78-8076-4726-4, contained in above kit is also available as a replacement stock item.

### Labels

In the event that any labels are damaged or destroyed, they must be replaced to ensure operator safety. Refer to **Section 3 - Safety**.

### a20 Adjustable Case Sealer, Type 10700 Frame Assemblies

### To Order Parts:

- 1. Refer to first illustration, **Frame Assemblies,** for the **Figure Number** that identifies a specific portion of the machine.
- 2. Refer to the appropriate **Figure or Figures** to determine the parts required and the parts reference number.
- 3. The Parts List that follows each illustration, includes the **Reference Number**, **Part Number** and **Part Description** for the parts on that illustration.

*Note* – The complete description has been included for standard fasteners and some commercially available components. This has been done to allow obtaining these standard parts locally, if desired.

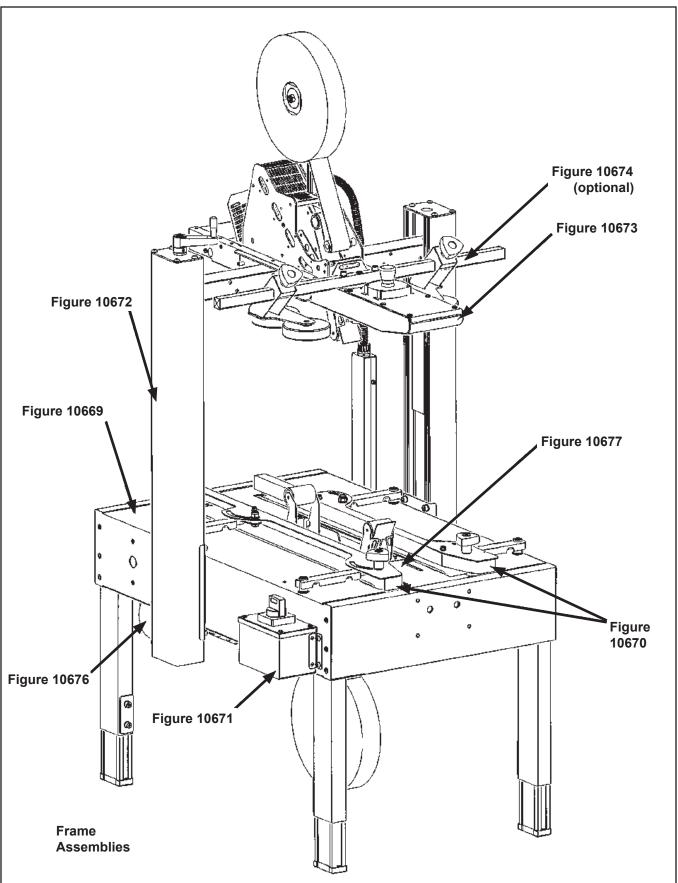
- 4. Order parts by Part Number, Part Description and Quantity required. Also include the model/machine name, machine type, and serial number that are located on the identification plate.
- 5. Refer to the first page of this instruction manual "**Replacement Parts and Service Information**" for replacement parts ordering information.

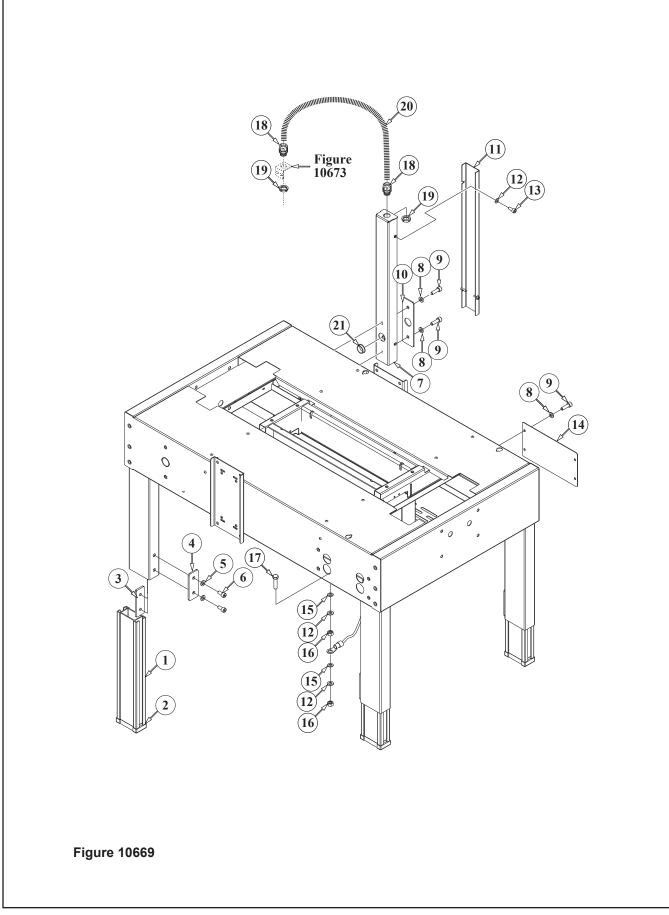
*Important* – Not all the parts listed are normally stocked items. Some parts or assemblies shown are available only on special order. Contact 3M/Tape Dispenser Parts to confirm item availability.

### **Options and Accessories**

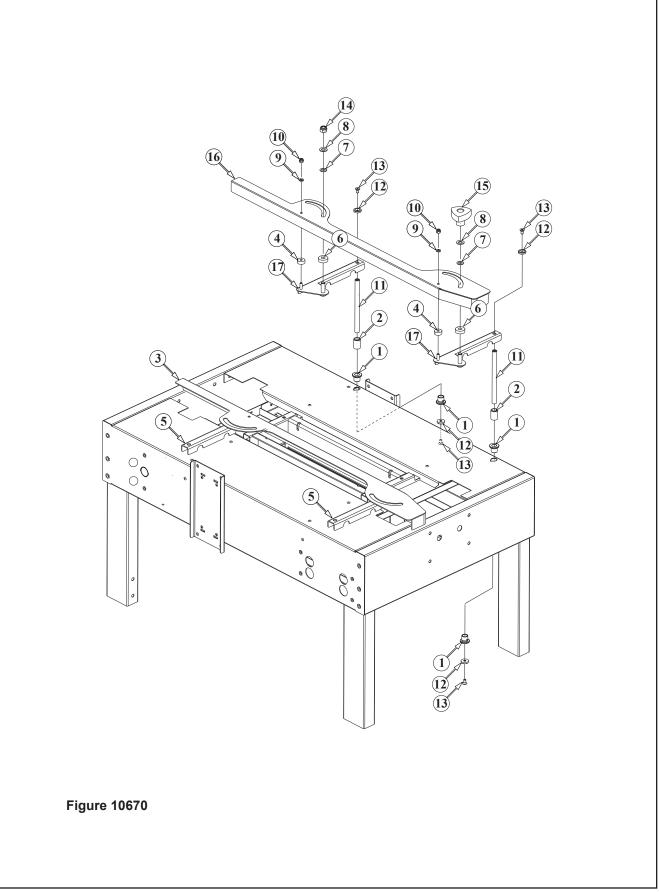
For additional information on the options and accessories listed below, contact your 3M Representative.

Part Number	Option/Accessory
70-0064-2997-4	Box Hold-Down Attachment, Model 10700
70-0064-2998-2	Caster Kit Attachment
70-0064-2999-0	Conveyor Extension Attachment
70-0064-0353-2	AccuGlide™ 2+ STD 2 Inch Upper Taping Head, Type 10500
70-0064-0354-0	AccuGlide™ 2+ STD 2 Inch Lower Taping Head, Type 10500
70-0064-3000-6	Compression Roller Kit
78-8060-8476-6	Tool and Parts Kit

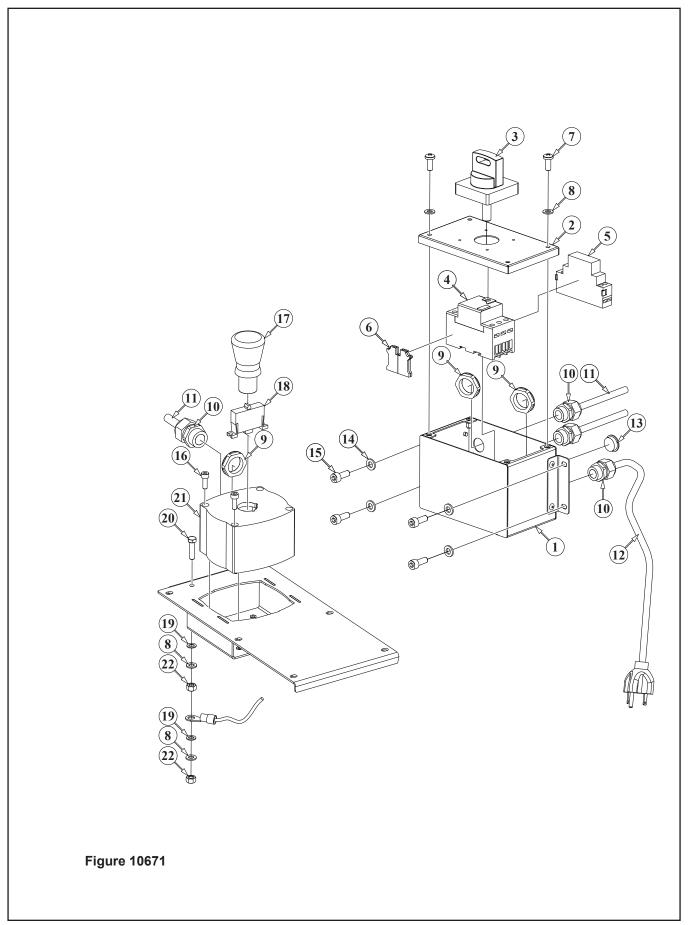




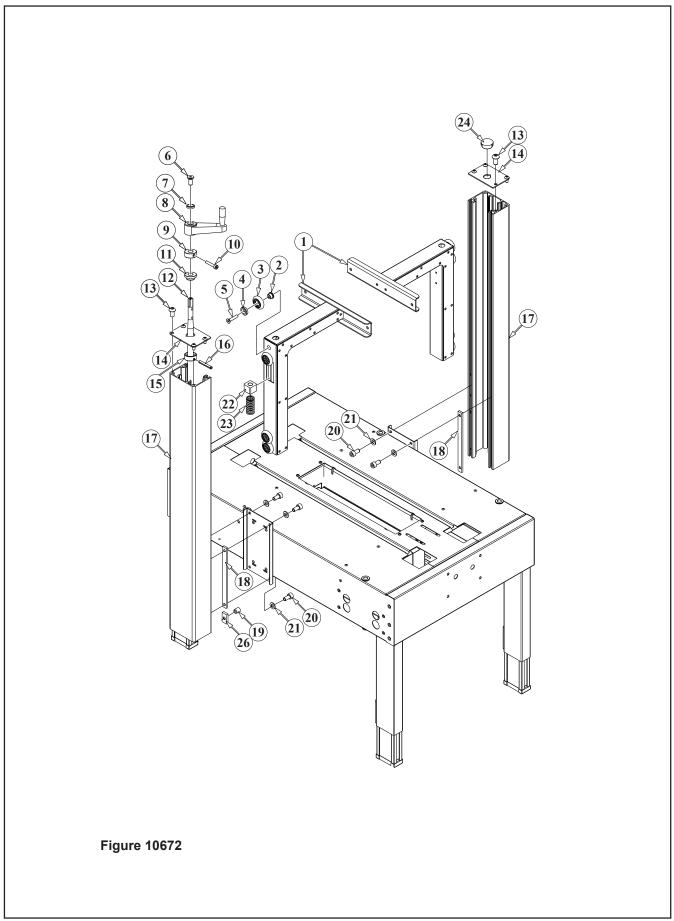
Ref. No.	3M Part No.	Description
10669-1	78-8137-0640-1	Inner Leg
10669-2	78-8137-0641-9	Foot
10669-3	78-8137-0635-1	Plate - Leg
10669-4	78-8129-6100-7	Bracket
10669-5	78-8017-9318-9	Washer - Plain M8
10669-6	26-1003-7963-0	Screw - Special, M8
10669-7	78-8137-0636-9	Housing - Wire
10669-8	26-1000-0010-3	Washer - Flat - M6
10669-9	78-8010-7210-5	Screw - Special - M6
10669-10	78-8137-0637-7	Plate - Housing
10669-11	78-8137-0638-5	Cover - Housing
10669-12	78-8005-5741-1	Washer - Flat - M5
10669-13	26-1003-7949-9	Screw - Special - M5
10669-14	78-8137-0795-3	Plate - Side Cover
10669-15	78-8046-8217-3	Washer - Special
10669-16	78-8010-7417-6	Nut
10669-17	78-8060-8488-1	Screw - M5
10669-18	78-8137-0651-8	Union - PG 11
10669-19	78-8137-0652-6	Union Nut - PG 11
10669-20	78-8137-0650-0	Sleeve - 16 mm
10669-21	78-8076-4702-5	Grommet



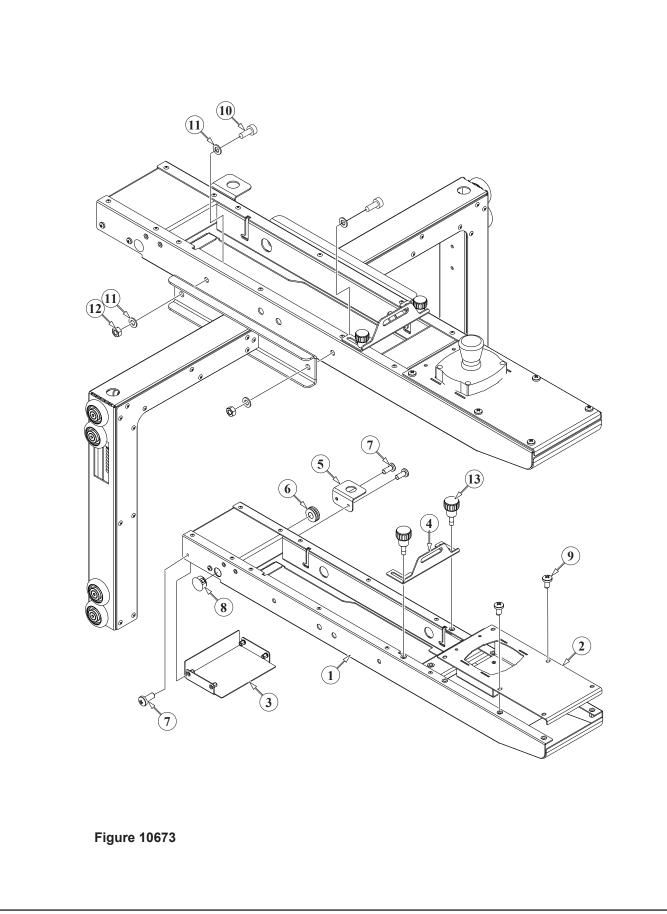
Ref. No.	3M Part No.	Description
10070 1		
10670-1	78-8091-0565-9	Bushing
10670-2	78-8137-0642-7	Spacer
10670-3	78-8137-0643-5	Guide - L/H
10670-4	78-8137-0644-3	Spacer
10670-5	78-8137-0645-0	Lever - L/H
10670-6	78-8137-0646-8	Spacer
10670-7	78-8017-9074-8	Washer - Nylon 15 mm
10670-8	26-1004-5510-9	Washer - Plain - M10
10670-9	26-1000-0010-3	Washer - Flat M6
10670-10	78-8091-0418-1	Nut - Self-Locking - M6
10670-11	78-8137-0647-6	Shaft
10670-12	78-8076-5477-3	Washer - Special
10670-13	26-1002-5830-5	Screw - M6
10670-14	26-1003-6918-5	Nut - Plastic Insert M10
10670-15	78-8070-1549-6	Knob M10
10670-16	78-8137-0648-4	Guide - R/H
10670-17	78-8137-0649-2	Lever - R/H



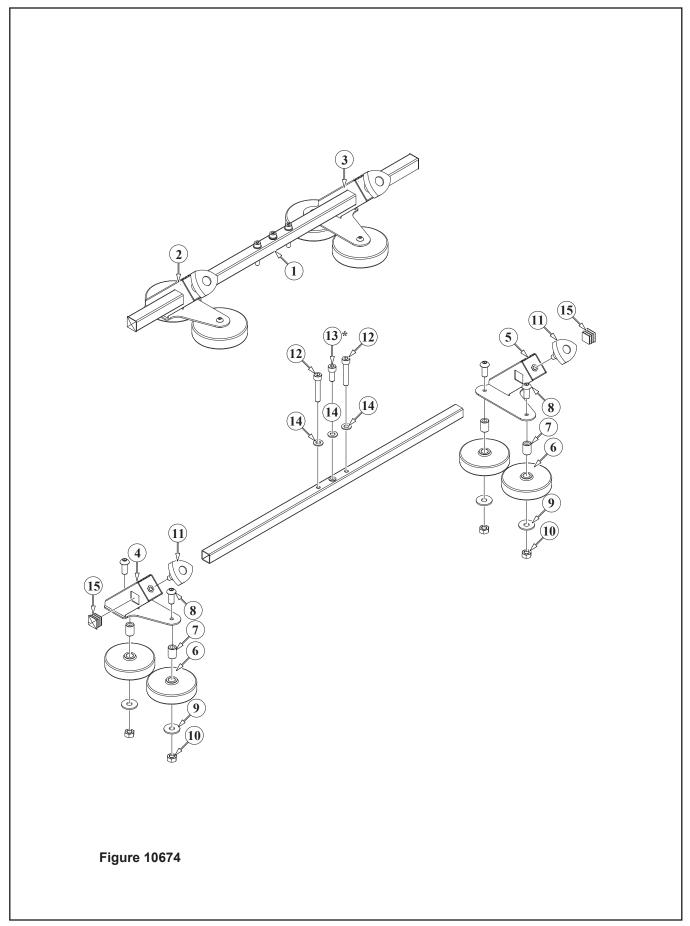
Ref. No.	3M Part No.	Description
10671-1	78-8137-0601-3	Box - Switch
10671-2	78-8137-0602-1	Cover
10671-3	78-8137-0606-2	Lockable Twist Knob - Allen Bradley
10671-4	78-8137-0603-9	Switch - Terminal - Allen Bradley 2.5-4
10671-5	78-8137-0604-7	Coil - Under Voltage 120V 60 Hz
10671-6	78-8094-6384-3	Terminal
10671-7	78-8094-6145-8	Screw - Phillips - M5
10671-8	78-8005-5741-1	Washer - Flat - M5
10671-9	78-8129-6469-6	Nut - Special - M20
10671-10	78-8137-0607-0	Grip - Cord - Skintop St 20
10671-11	78-8060-8053-3	Wire
10671-12	78-8028-7909-4	Power Cord - U.S.A.
10671-13	78-8137-0796-1	Grommet - EZ DG16
10671-14	26-1000-0010-3	Washer - Flat M6
10671-15	26-1003-7957-2	Screw - M6
10671-16	26-1003-7943-2	Screw - M4
10671-17	78-8137-0609-6	Switch - E-Stop - 40 800FM-MT44
10671-18	78-8137-0797-9	Terminal Switch
10671-19	78-8137-0611-2	Washer - Special
10671-20	78-8060-8488-1	Screw - M5
10671-21	78-8137-0608-8	Box - E-Stop, Yellow - Allen Bradley
10671-22	78-8010-7417-6	Nut - M5



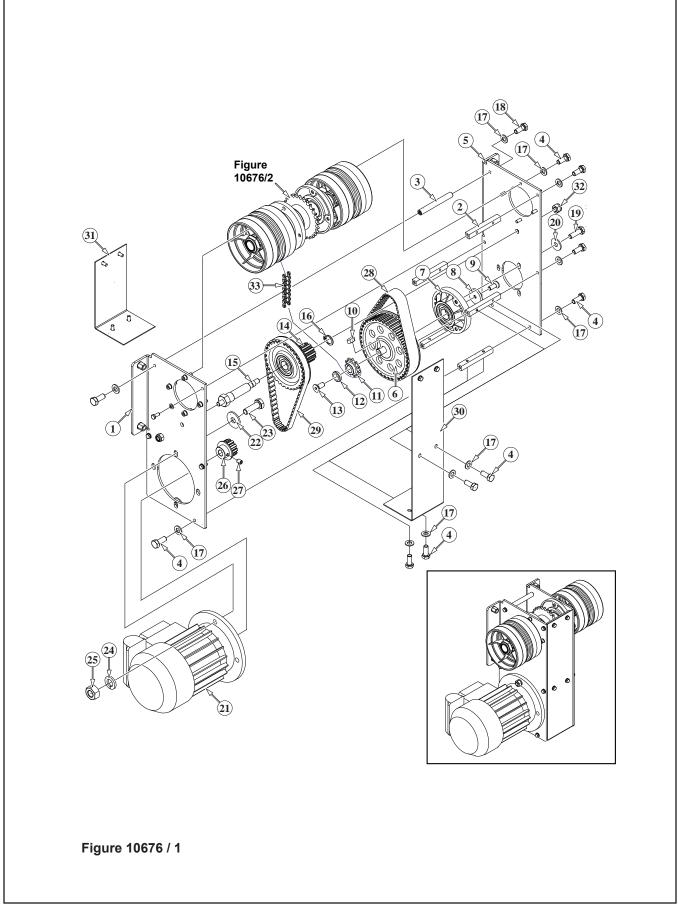
Ref. No.	3M Part No.	Description
10672 1	79 9127 0620 2	Column - Inner
10672-1	78-8137-0620-3	
10672-2	78-8137-0515-5	Bushing
10672-3	78-8137-0621-1	Bearing - Ball
10672-4	78-8076-5477-3	Washer - Special - 6.5 x 20 x 4
10672-5	78-8137-0622-9	Screw M6
10672-6	26-0001-5862-1	Screw - Flat Soc. Hd - M5 x 12
10672-7	78-8060-8073-1	Washer - Motor
10672-8	78-8129-6118-9	Handle
10672-9	78-8129-6142-9	Nut
10672-10	26-1003-7946-5	Screw - Soc. Hd M4 x 25
10672-11	78-8060-8125-9	Bushing
10672-12	78-8129-6141-1	Screw - Leading
10672-13	78-8129-6124-7	Screw - Cup Hd M8 x 16
10672-14	78-8137-0617-9	Plate - Column
10672-15	78-8129-6143-7	Bushing
10672-16	78-8054-8586-5	Pin
10672-17	78-8137-0614-6	Column - Outer
10672-18	78-8137-0615-3	Plate - Column
10672-19	10-0000-0030-3	Set Screw M8 x 10
10672-20	26-1003-7963-0	Screw - Soc. Hd M8 x 16
10672-21	78-8017-9318-9	Washer Plain Metric 8 mm
10672-22	78-8129-6125-4	Nut
10672-23	78-8054-8969-3	Spring
10672-24	78-8114-4703-2	Plug / 17
10672-25	78-8137-0620-3	Column, Inner
10672-26	78-8137-0516-3	Plate, Column



Ref. No.	3M Part No.	Description
10673-1	78-8137-0623-7	Support - Upper Head - with Insert
10673-2	78-8137-0626-0	Plate - Cover
10673-3	78-8137-0624-5	Bracket - Upper with Insert
10673-4	78-8137-0628-6	Plate - Lock
10673-5	78-8137-0625-2	Plate
10673-6	78-8052-6659-6	Grommet
10673-7	78-8094-6145-8	Screw - Phillips, M5 x 12
10673-8	78-8137-0803-5	Plug /17
10673-9	78-8137-0627-8	Screw - M6 x 10
10673-10	26-1003-7964-8	Screw - Soc. Hd. Hex Soc. Dr M8 x 20
10673-11	78-8017-9318-9	Washer - Plain - 8 mm
10673-12	26-1003-6904-5	Nut - Hex - M8
10673-13	78-8137-0629-4	Knob

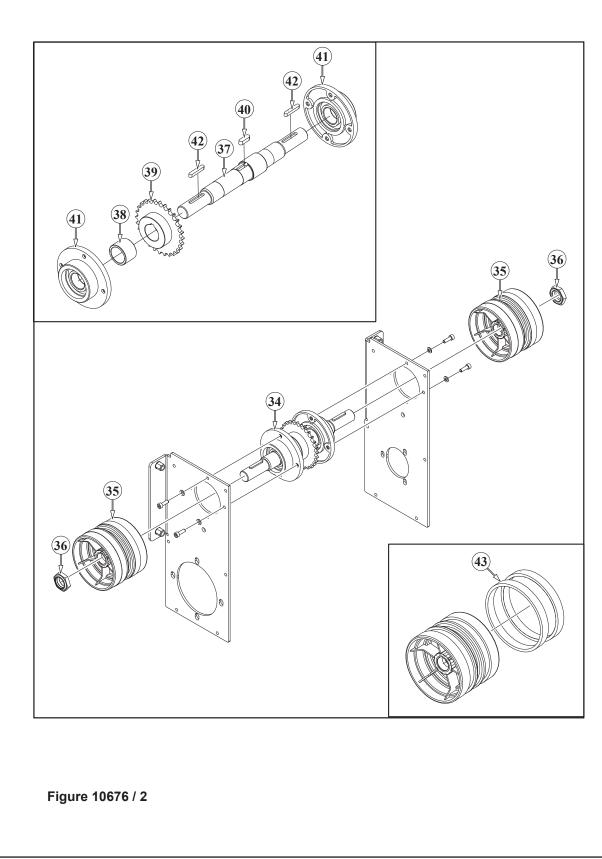


Ref. No.	3M Part No.	Description
10674-1	78-8070-1599-1	Tube - Roller Support
10674-2	78-8137-0631-0	Assembly - Pressure Roller - L/H
10674-3	78-8137-0632-8	Assembly - Pressure Roller - R/H
10674-4	78-8137-0613-8	Support - Roller - L/H
10674-5	78-8137-0612-0	Support - Roller - R/H
10674-6	78-8054-8648-3	Roller - Pressure
10674-7	78-8055-0622-3	Bushing
10674-8	78-8137-0799-5	Screw - M8 x 35
10674-9	26-1004-5507-5	Washer M8
10674-10	26-1003-6904-5	Nut M8
10674-11	78-8137-0633-6	Knob
10674-12	26-1003-7969-7	Screw - Hex Soc. Hd M8 x 45 (a20)
10674-13	26-1003-7964-8	Screw - Hex Soc. Hd M8 x 20 (a70)
10674-14	78-8017-9318-9	Washer - Plain - 8 mm
10674-15	78-8052-6652-1	Cap End



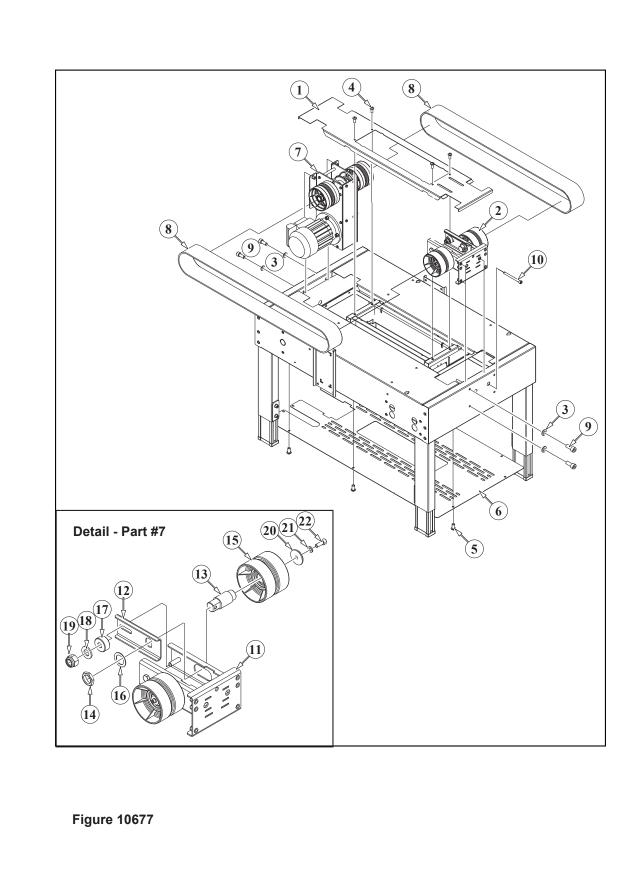
### Figure 10676 / 1

Ref. No.	3M Part No.	Description	
10676-1	78-8137-0653-4	Frame - L/H Gearbox	
10676-2	78-8054-8977-6	Spacer	
10676-3	78-8054-8975-0	Spacer	
10676-4	26-1003-5820-4	Screw - Special - M5	
10676-5	78-8137-0654-2	Frame - R/H Gearbox	
10676-6	78-8054-8980-0	Pulley Timing Belt	
10676-7	78-8054-8979-2	Housing - Bearing	
10676-8	78-8054-8577-4	Washer - Special	
10676-9	26-1001-9843-6	Screw - Flat - M6	
10676-10	78-8028-8244-5	Кеу	
10676-11	78-8054-8981-8	Sprocket	
10676-12	78-8054-8877-8	Washer	
10676-13	26-0001-5862-1	Screw - M5	
10676-14	78-8054-8978-4	Pulley - with Bearing	
10676-15	78-8076-4531-8	Shaft - Timing Pulley	
10676-16	78-8016-5855-6	E-Ring	
10676-17	78-8005-5741-1	Washer - Flat - M5	
10676-18	78-8032-0382-3	Screw - Special - M5	
10676-19	78-8010-7193-3	Screw - Special - M6	
10676-20	78-8042-2919-9	Washer - Triple - M6	
10676-21	78-8046-8267-8	Motor - 110V 60 Hz	
10676-22	26-1004-5507-5	Washer - M8	
10676-23	78-8017-9301-5	Screw - M8	
10676-24	78-8005-5736-1	Lockwasher, - M8	
10676-25	26-1003-6904-5	Nut - M8	
10676-26	78-8054-8982-6	Pulley - Timing	
10676-27	26-1003-8816-9	Screw - Set - M5 x 6	
10676-28	78-8057-5808-9	Belt - Timing - 187L100	
10676-29	78-8057-5724-8	Belt - Timing - 187L050	
10676-30	78-8137-0655-9	Cover - Front	
10676-31	78-8137-0656-7	Cover - Rear	
10676-32	78-8076-4580-5	Nut - Self-Locking - M8	
10676-33	78-8054-8987-5	Chain	



### Figure 10676 / 2

Ref. No.	3M Part No.	Description	
10676-34	78-8137-0657-5	Drive Shaft	
10676-35	78-8076-5105-0	Pulley Assembly - Drive	
10676-36	78-8060-8416-2	Nut - Special - M20 x 1	
10676-37	78-8076-4581-3	Shaft - Gear Box	
10676-38	78-8054-8984-2	Bushing	
10676-39	78-8054-8986-7	Sprocket - 3/8" Pitch - 28 Teeth	
10676-40	78-8057-5811-3	Key - 6 x 6 x 20 mm	
10676-41	78-8054-8983-4	Flange - Radial Ball Bearing	
10676-42	78-8057-5739-6	Key - M5 x 5 x 30 mm	
10676-43	78-8052-6713-1	Ring - Polyurethane	



Ref. No.	3M Part No.	Description
10677-1	78-8137-0658-3	Conveyor
10677-2	78-8137-0659-1	Tension Belts - Assembly
10677-3	78-8017-9318-9	Washer - 8 mm
10677-4	78-8094-6145-8	Screw - Phillips M5
10677-5	78-8010-7209-7	Screw - Hex. Soc. Hd M6 x 12
10677-6	78-8137-0660-9	Cover
10677-7	78-8137-0661-7	Gear Box - Assembly
10677-8	78-8070-1531-4	Belt - with Hook
10677-9	26-1003-7964-8	Screw - M8
10677-10	78-8114-4633-1	Screw - Hex. Soc. Hd M8 x 100
10677-11	78-8137-0663-3	Support - Belt Tension
10677-12	78-8137-0664-1	Plate
10677-13	78-8137-0665-8	Shaft - Pulley
10677-14	78-8137-0666-6	Nut - Special, M25
10677-15	78-8052-6710-7	Roller
10677-16	78-8137-0667-4	Washer - Flat, M25
10677-17	78-8070-1518-1	Spacer - Shaft
10677-18	26-1004-5510-9	Washer - Flat, M10
10677-19	26-1003-6918-5	Nut - Plastic Insert M10
10677-20	78-8052-6709-9	Washer - Special
10677-21	78-8010-7435-8	Washer - M6
10677-22	26-1003-7957-2	Screw - M6



**Instructions and Parts List** 

3M-Matic<sup>™</sup>

# AccuGlide<sup>™</sup> 2+ STD 2 Inch Upper and Lower Taping Heads

# Type 10500

Serial No.\_

For reference, record taping head(s) serial number(s) here.



**3M Industrial Adhesives and Tapes** 3M Center, Building 220-5E-06 St. Paul, MN 55144-1000 Important Safety Information BEFORE INSTALLING OR OPERATING THIS EQUIPMENT Read, understand, and follow all safety and operating instructions.

# Spare Parts

It is recommended you immediately order the spare parts listed in the "Spare Parts/Service Information" section. These parts are expected to wear through normal use, and should be kept on hand to minimize production delays.

AccuGlide<sup>™</sup> is a Trademark of 3M, St. Paul, MN 55144-1000 Printed in U.S.A. © **3M 2011 44-0009-2036-1 (F121611-NA)** 

#### **Replacement Parts and Service Information**

To Our Customers:

This is the 3M-Matic<sup>™</sup>/AccuGlide<sup>™</sup>/Scotch<sup>®</sup> equipment you ordered. It has been set up and tested in the factory with Scotch<sup>®</sup> tapes. If technical assistance or replacement parts are needed, call or fax the appropriate number listed below.

Included with each machine is an Instructions and Parts List manual.

Technical Assistance / Replacement Parts and Additional Manuals:

Call the 3M-Matic<sup>™</sup> Help line at 1-800 328-1390. Provide the customer support coordinator with the model/ machine name, machine type, and serial number that are located on the identification plate (For example: Model 200a / Accuglide 2+ / 2 inch - Type 10500 - Serial Number 13282).

United States -	Identificat	ion Plate	
United States -			
3M Tape Dispenser Parts	3M Company St. Paul, Part Number	3M-Matic™	ED.
241 Venture Drive	Model	For Industrial Use Only Year W	att 4000563
1-800-344-9883	Serial Number		
Amery, WI 54001-1325	Туре	Volt Hertz Pi	lase
Fax: 1-715-268-8153			

#### Minimum billing on parts orders will be \$25.00. Replacement part prices available on request. \$10.00 restocking charge per invoice on returned parts

Note : Outside the U.S., contact the local 3M subsidiary for parts ordering information.



**3M Industrial Adhesives and Tapes** 3M Center, Building 220-5E-06 St. Paul, MN 55144-1000 3M-Matic<sup>™</sup>, AccuGlide<sup>™</sup> and Scotch<sup>™</sup> are Trademarks of 3M St. Paul, MN 55144-1000 Printed in U.S.A. THIS PAGE IS BLANK

To Our Customers:

This is the 3M-Matic<sup>™</sup>/AccuGlide<sup>™</sup>/Scotch<sup>®</sup> equipment you ordered. It has been set up and tested in the factory with Scotch<sup>®</sup> tapes. If any problems occur when operating this equipment and you desire a service call or phone consultation, call, write, or fax the appropriate number listed below.

Included with each machine is an Instructions and Parts List manual.

# SERVICE, REPLACEMENT PARTS, AND ADDITIONAL MANUALS

AVAILABLE DIRECT FROM:

Order parts by part number, part description, and quantity required. Also, when ordering parts or additional manuals, include model/machine name, machine type, and serial number that are located on the identification plate.



**3M Industrial Adhesives and Tapes** 3M Center, Building 220-5E-06 St. Paul, MN 55144-1000 3M-Matic<sup>™</sup>, AccuGlide<sup>™</sup> and Scotch<sup>™</sup> are Trademarks of 3M, St. Paul, MN 55144-1000 Printed in U.S.A. THIS PAGE IS BLANK

#### Instruction Manual

#### AccuGlide<sup>™</sup> 2+ STD 2 Inch Upper and Lower Taping Heads Type 10500

Table of Contents	Page
Replacement Parts and Service Information	. i - ii
Table of Contents	. iii
Equipment Warranty and Limited Remedy	. iv
Intended Use	. 1
Taping Head Contents / How to Use Manual	. 3
Important Safeguards	. 4 - 5
Specifications Dimensional Drawing	
Installation Receiving and Handling Installation Guidelines Tape Leg Length Tape Width Adjustment	. 8 . 8 . 8
Operation Tape Loading – Upper Taping Head Tape Loading – Lower Taping Head	. 10
Maintenance Blade Replacement Blade Guard Blade Oiler Pad Cleaning Applying/Buffing Roller Replacement.	. 12 . 12 . 12 . 12 . 13
Adjustments Tape Latch Alignment Tape Drum Friction Brake Applying Mechanism Spring One-Way Tension Roller Tape Leg Length Leading Tape Leg Length Adjustment Changing Tape Leg Length From 70 to 50 mm [2-3/4 to 2 Inch]	. 14 . 14 . 15 . 15 . 16 . 16
Troubleshooting Guide	. 17 - 18
Spare Parts/Service Information Recommended Spare Parts Replacement Parts and Service	. 19 . 19
Replacement Parts Illustrations and Parts List Yellow Section	20-37

#### **General Information - Warranty**

# Equipment Warranty and Limited Remedy: THE FOLLOWING WARRANTY IS MADE IN LIEU OFALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE AND ANY IMPLIED WARRANTY ARISING OUT OF A COURSE OF DEALING, CUSTOM OR USAGE OF TRADE:

3M sells its AccuGlide<sup>™</sup> 2+ STD 2 Inch Upper and Lower Taping Heads, Type 10500 with the following warranty:

- 1. The Taping Head blade, springs and rollers will be free from defects in material and manufacture for ninety (90) days after delivery.
- 2. All other Taping Head parts will be free from defects in material and manufacture for three (3) years after delivery.

If any part is defective within this warranty period, your exclusive remedy and 3M's and seller's sole obligation shall be, at 3M's option, to repair or replace the part. 3M must receive actual notice of any alleged defect within a reasonable time after it is discovered, but in no event shall 3M have any obligation under this warranty unless it receives such notice within five (5) business days after the expiration of the warranty period. All notices required hereunder shall be given to 3M solely through the 3M-Matic<sup>™</sup> Help line (800-328-1390). To be entitled to repair or replacement as provided under this warranty, the part must be returned as directed by 3M to its factory or other authorized service station designated by 3M. If 3M is unable to repair or replace the part within a reasonable time after receipt thereof, 3M, at its option, will replace the equipment or refund the purchase price. 3M shall have no obligation to provide or pay for the labor required to remove any part or equipment or to install the repaired or replacement part or equipment. 3M shall have no obligation to repair or replace those parts failing due to normal wear, inadequate or improper maintenance, inadequate cleaning, non-lubrication, improper operating environment, improper utilities, operator error or misuse, alteration or modification, mishandling, lack of reasonable care, or due to any accidental cause.

**Limitation of Liability:** Except where prohibited by law, 3M and seller will not be liable for any loss or damage arising from this 3M equipment, whether direct, indirect, special, incidental, or consequential, regardless of the legal theory asserted, including breach of warranty, breach of contract, negligence, or strict liability.

*Note:* The foregoing Equipment Warranty and Limited Remedy and Limitation of Liability may be changed only by a written agreement signed by authorized representatives of 3M and seller.

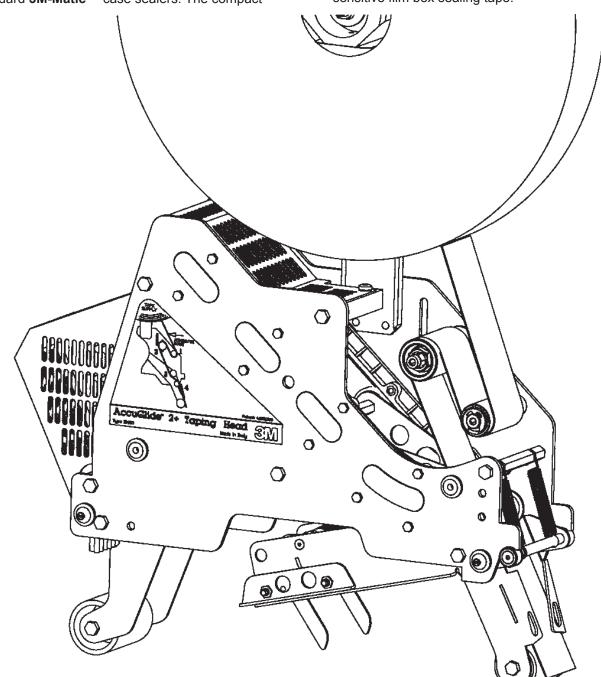
AccuGlide<sup>™</sup>, Scotch<sup>™</sup>, and 3M-Matic<sup>™</sup> are Trademarks of 3M, St. Paul, Minnesota 55144-1000

#### Intended Use

The intended use of the AccuGlide<sup>™</sup> 2+ STD 2 Inch Upper and Lower Taping Heads is to apply a "C" clip of Scotch<sup>®</sup> pressure-sensitive film box sealing tape to the top and/or bottom center seam of regular slotted containers.

These taping heads are incorporated into most standard **3M-Matic**<sup>™</sup> case sealers. The compact

size and simplicity of the taping head also makes it suitable for mounting in box conveying systems other than **3M-Matic**<sup>™</sup> case sealers. This includes replacement of other types of taping, gluing or stapling heads in existing case sealing machines. The **AccuGlide**<sup>™</sup> **2+ STD Taping Heads** have been designed and tested for use with Scotch<sup>®</sup> pressuresensitive film box sealing tape.



AccuGlide<sup>™</sup> 2+ STD 2 Inch Upper Taping Head, Type 10500

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#### **Taping Head Contents**

#### AccuGlide<sup>™</sup> 2+ STD 2 Inch Upper and Lower Taping Heads consist of:

Qty.	Part Name
1	Taping Head Assembly
1	Tape Drum and Bracket Assembly
1	Hardware and Spare Parts Kit
1	Threading Tool
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#### **General Information**

This instruction manual covers safety aspects, handling and transport, storage, unpacking, preparation, installation, operation, set-up and adjustments, technical and manufacturing specifications, maintenance, troubleshooting, repair work and servicing, electric diagrams, warranty information, disposal (ELV), a glossary with a definition of symbols, plus a parts list of the 3M-Matic<sup>™</sup> Accugllide 2+ (2 inch) 3M Industrial Adhesives and Tapes Division 3M Center, Bldg. 220-5E-06 St. Paul, MN 55144-1000 (USA) Edition December 2011/Copyright 3M 2011. All rights reserved The manufacturer reserves the right to change the product at any time without notice.

#### How to use this Manual

The manual is an important part of the machine; all information contained herein is intended to enable the equipment to be maintained in perfect condition and operated safely. Ensure that the manual is available to all operators of this equipment and the manual is kept up to date with all subsequent amendments. Should the equipment be sold or disposed of, please ensure that the manual is passed on with the machine.

Electrical and pneumatic diagrams are included in the manual. Equipment using PLC controls and/or electronic components will include relevant schematics or programs in the enclosure (or will be delivered separately as needed)

Keep the manual in a clean and dry place near the machine. Do not remove, tear or rewrite parts of the manual for any reason. Use the manual without damaging it. However, if the manual has been lost or damaged, ask your after sale service for a new copy (if it is possible, please have the manual name, part number, and revision information and/or model/machine name, machine type, and serial number) that are

located on the identification plate (For example: Accuglide 2+/2 inch - Type 10500 - Serial Number 13282).

#### Note:

All the important warning notes related to the operation of the machine are identified by the symbol:



#### Updating the Manual

Modifications to the machine are subject to manufacturer's internal procedures. The user may receive pages or parts of the manual which contain amendment made after its first publication. The user must use them to update this manual.

This safety alert symbol identif es important safety messages in this manual. READ AND UNDERSTAND THEM BEFORE INSTALLING OR OPERATING THIS EQUIPMENT.

#### Explanation of Signal Word Consequences

**CAUTION:** Indicates a potentially hazardous situation, which, if not avoided, may result in minor or moderate injury and/or property damage.



WARNING: Indicates a potentially hazardous situation, which, if not avoided, could result in death or serious injury and/or property damage.



# WARNING

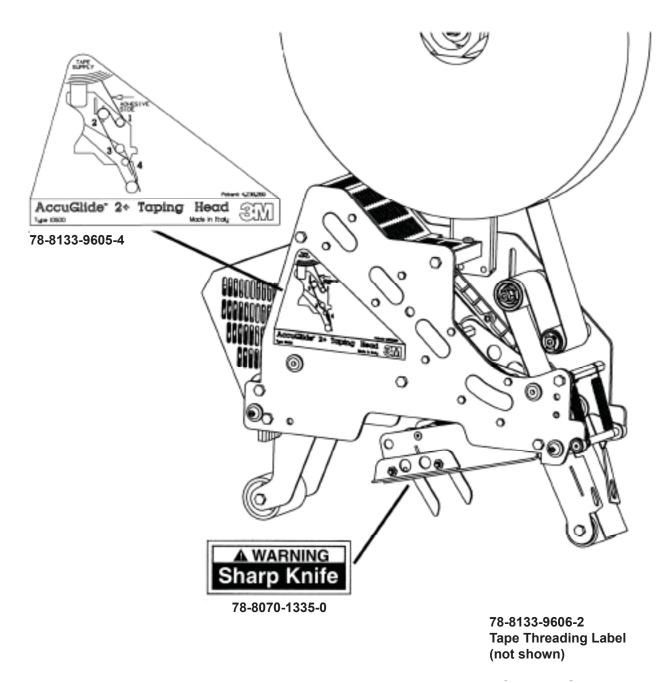
- To reduce the risk associated with mechanical hazards:
- Read, understand and follow all safety and operating instructions before operating or servicing the case sealer
- Allow only properly trained and qualified personnel to operate and/or service this equipment
- To reduce the risk associated with shear, pinch, and entanglement hazards:
- Turn air and electrical supplies off on associated equipment before performing any adjustments, maintenance, or servicing the taping heads
- Never attempt to work on the taping head or load tape while the box drive system is running
- To reduce the risk associated with sharp blade hazards:
- Keep hands and fingers away from tape cutoff blades under orange blade guards. The blades are extremely sharp

# CAUTION

- To reduce the risk associated with muscle strain:
- Use proper body mechanics when removing or installing taping heads that are moderately heavy or may be considered awkward to lift
- To reduce the risk associated with impact hazards:
- Place the taping head on a smooth level surface when maintaining or servicing this equipment

(Important Safeguards continued on next page)

*Important -* In the event the following safety labels are damaged or destroyed, they must be replaced to ensure operator safety. See "Replacement Parts Illustrations and Parts Lists" for label part numbers.





#### **Specifications**

#### 1. Tape:

For use with Scotch<sup>®</sup> pressure-sensitive film box sealing tapes.

#### 2. Tape Width:

36mm or 1-1/2 inches minimum to 48mm [2 inches] maximum.

#### 3. Tape Roll Diameter:

Up to 405mm [16 inches] maximum on a 76.2mm [3 inch] diameter core. (Accommodates all system roll lengths of Scotch<sup>®</sup> film tapes.)

#### 4. Tape Application Leg Length - Standard:

70mm ± 6mm [2-3/4 inches ±1/4 inch]

#### Tape Application Leg Length - Optional:

50mm ± 6mm [2 inches ± 1/4 inch] (See "Adjustments – Tape Leg Length.")

#### 5. Box Size Capacities:

For use with center seam regular slotted containers.

#### Minimum

#### Maximum

	[4-3/4 inches]	(most "3M-Matic" Case Sealers) (with optional 2 inch leg length)	Unlimited Limited by Case Sealer
Width – 115mm	[4-1/2 inches]		

When upper and lower taping heads are used on "**3M-Matic**" case sealers, refer to the respective instruction manual specifications for box weight and size capacities.

#### 6. Operating Rate:

Conveyor speeds up to 0.40m/s [80FPM] maximum.

#### 7. Operating Conditions:

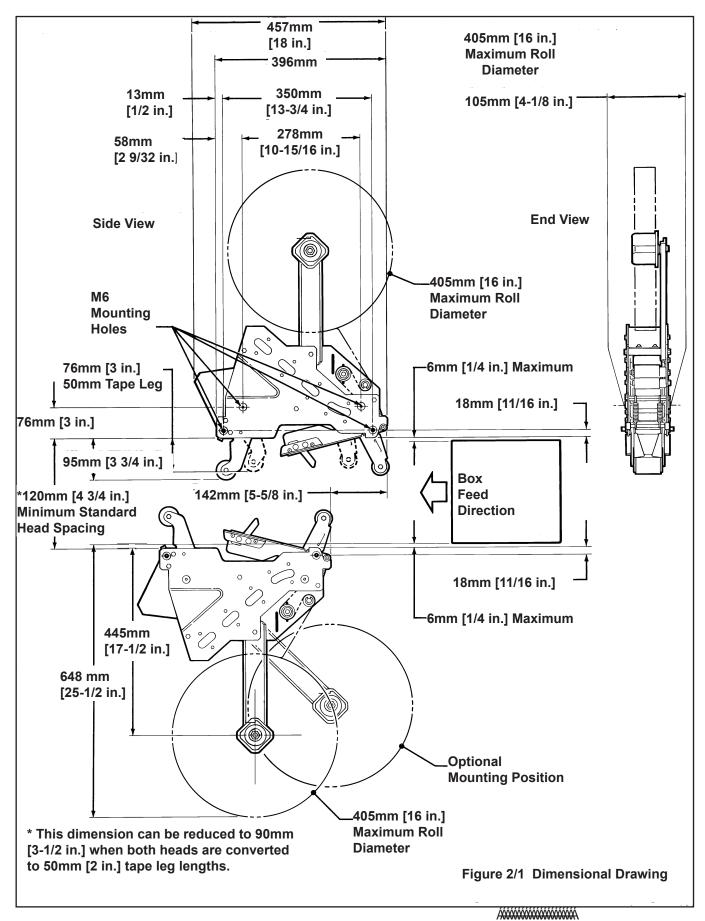
Use in dry, relatively clean environments at 5° to 40°C [40° to 105°F] with clean dry boxes.

*Important* – Taping heads should not be washed down or subjected to conditions causing moisture condensation on components.

#### 8. Taping Head Dimensions:

Length	_	457mm	[18 inches]	
Height	_	560mm	[22 inches]	(with tape drum)
Width	_	105mm	[4-1/8 inches]	(without mounting spacers)
Weight	_	Package	d: 7.7kg [17	lbs.]
-		Unpacka	ged: 6.7kg [15	lbs.]

(Specifications continued on next page.)



#### Installation



- To reduce the risk associated with sharp blade hazards:
- Keep hands and fingers away from tape cutoff blades under orange blade guards.
   The blades are extremely sharp

#### **Receiving And Handling**

After the taping head assembly has been unpackaged, examine the unit for damage that might have occurred during transit. If damage is evident, file a damage claim immediately with the transportation company and also notify your 3M Representative.

#### **Installation Guidelines**

The taping head assembly can be used in converting existing or in custom made machinery. It can be mounted for top taping or bottom taping. Refer to "Box Size Capacities," as well as **Figure 2-1** in the Specifications section, for the following points in making such installations:



- To reduce risk associated with muscle strain:
- Use proper body mechanics when removing or installing taping heads that are moderately heavy or may be considered awkward to lift

*Important* – Always conduct a hazard review to determine appropriate guarding requirements when the installation is in an application other than 3M-Matic<sup>™</sup> equipment

- The box conveying system must positively propel the box in a continuous motion, not exceeding 0.40 m/s [80 feet per minute], past the taping head assembly since the box motion actuates the taping mechanism.
- 2. If a pusher or cleated conveyor is being used, steps should be taken in the conveyor design to prevent the pusher from contacting the applying or buffing roller arms resulting in damage to the taping head.

 Figure 2-1 illustrates the typical mounting relationship for opposing taping head assemblies to allow taping of box heights down to 90mm [3-1/2 inches]. To tape box heights down to 70mm [2-3/4 inches], the taping heads must be completely staggered so only one tape seal is being applied at one time.

**Note** – AccuGlide<sup>TM</sup> 2+ STD Upper Taping Head is supplied with a buffing arm guard. Adjustments to this guard may be required to install the taping head into some older design 3M-Matic<sup>TM</sup> case sealers.

- 4. Mounting studs are provided with the taping head, but special installations may require alternate means for mounting.
- 5. Box hold-down or guide skis should be provided and the taping head mounted so that the side plates are 6mm [1/4 inch] maximum away from the ski surface on which the box rides.

#### Tape Leg Length

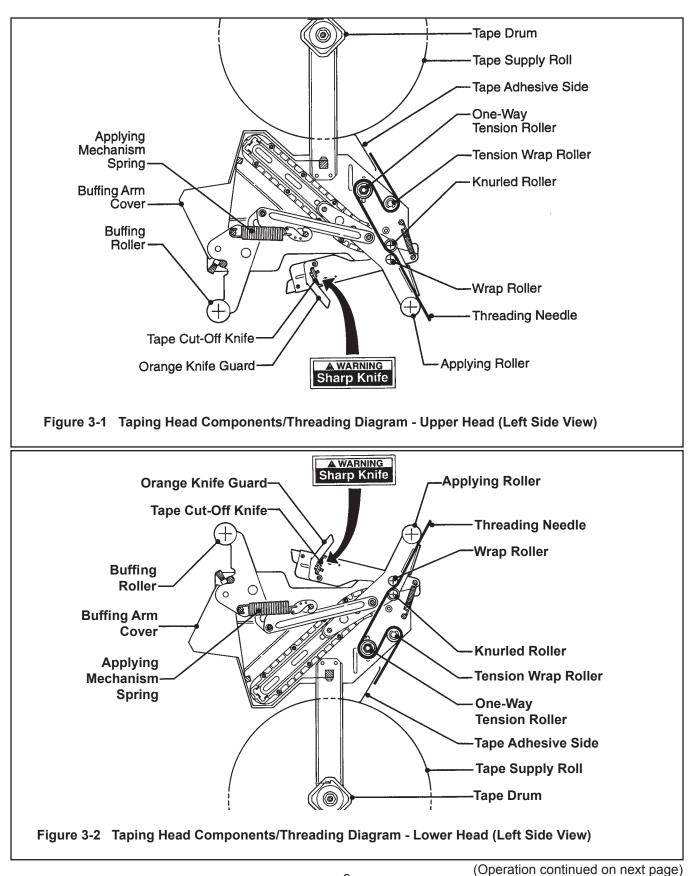
Taping heads are factory set to apply standard 70mm [2-3/4 inch] tape legs. The heads can be converted to apply 50mm [2 inch] tape legs if desired but both upper and lower heads must be set to apply the same tape leg length. See "Adjustments – Changing Tape Leg Length From 70 to 50mm [2-3/4 to 2 Inches]."

Also, the conveyor speed at which the product moves through the taping heads, affects the leading and trailing tape leg length. See "Adjustments section – Leading Tape Leg Length Adjustment."

#### Tape Width Adjustment

Taping heads are factory set to apply 48mm [2 inch] wide tape. If it is necessary to align the tape or to apply narrower tapes, refer to "Adjustments – Tape Web Alignment" for set-up procedure.

#### Operation



#### **Operation** (continued)



- To reduce the risk associated with shear, pinch, and entanglement hazards:
- Turn air and electrical supplies off on associated equipment before performing any adjustments, maintenance, or servicing the machine or taping heads
- Never attempt to work on the taping heads or load tape when the box drive system is running
- To reduce the risk associated with sharp blade hazards:
- Keep hands and fingers away from tape cutoff blades under orange blade guards.
   The blades are extremely sharp

It is recommended that the detailed instructions and sketches in this manual be referred to the first few times the taping head is loaded/threaded until the operator becomes thoroughly familiar with the tape loading operation.

*Note* – Remove tape roll before removing taping head from machine to minimize weight.



- To reduce the risk associated with muscle strain:
- Use proper body mechanics when removing or installing taping heads that are moderately heavy or may be considered awkward to lift
- To reduce the risk associated with impact hazards:
- Place the taping head on a smooth level surface when maintaining or servicing this equipment

#### Tape Loading – Upper Taping Head

- 1. Place the upper taping head in a convenient working position.
- 2. Use **Figures 3-3 to 3-5** and tape threading label. Position the tape supply roll so the adhesive side of tape is facing the front of the taping head as it is pulled from the supply roll.
- 3. Attach the threading needle to the end of the roll. Guide the threading needle around the wrap roller (Position 1) then back around the one-way tension roller (Position 2).
- Continue pulling the threading needle down and guide it between the two rollers on the apply arm (Position 3).

- 5. Pull the threading needle down until the tape travels between the apply plate and the ears of the apply arm (Position 4) until it extends past the applying roller. When properly threaded the adhesive side of the tape should be facing the knurled rollers at position 2 and also position 3.
- 6. Cut away any excess tape.

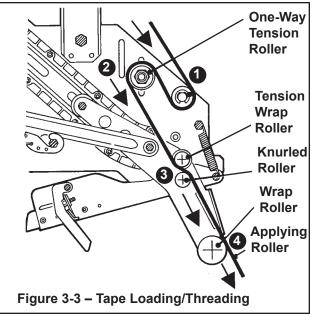
*Important* – Do not cut against the apply roller - roller damage could occur.

#### Tape Loading – Lower Taping Head

- 1. Remove the lower taping head from the conveyor bed or associated equipment and place it a convenient working position.
- 2. The lower taping head is loaded and threaded in the same manner as the upper head. Follow the upper taping head tape loading/threading procedure.

#### Figure 3-3

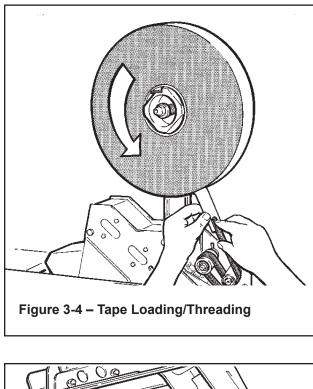
Insert threading needle through rollers in direction indicated by arrows.



2+ STD 2" Taping Head - NA

#### Figure 3-4

Place tape roll on tape drum to dispense tape with adhesive side forward. Seat tape roll fully against back flange of drum. Adhere tape lead end to threading needle as shown.

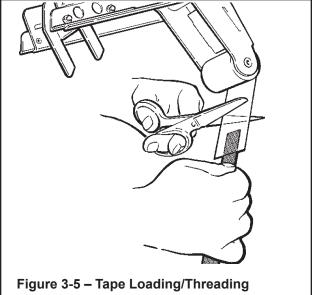




- To reduce the risk associated with sharp blade hazards:
- Keep hands and fingers away from tape cutoff blades under orange blade guards. The blades are extremely sharp.

Manually turn tape roll to create slack tape while pulling threading needle through tape applying mechanism until needle is through and tape is in alignment with applying roller.

Excess tape can be cut with a scissors at applying roller.



#### Maintenance



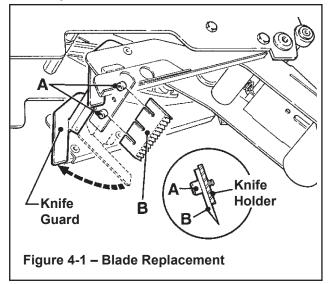
- To reduce the risk associated with shear, pinch, and entanglement hazards:
- Turn air and electrical supplies off on associated equipment before performing any adjustments, maintenance, or servicing the taping heads
- Never attempt to work on the taping head or load tape while the box drive system is running
- To reduce the risk associated with sharp blade hazards:
- Keep hands and fingers away from tape cutoff blades under orange blade guards. The blades are extremely sharp

The AccuGlide<sup>™</sup> 2+ STD 2 Inch Taping Head has been designed for long, trouble free service. The taping head will perform best when it receives routine maintenance and cleaning. Taping head components that fail or wear excessively should be promptly repaired or replaced to prevent damage to other portions of the head or to the product.

Blade Replacement, Upper and Lower Taping Heads – Figure 4-1



- Keep hands and fingers away from tape cutoff blades under orange blade guards. The blades are extremely shar
- 1. Loosen, but do not remove, the blade screws (A). Remove and discard old blade.
- 2. Mount the new blade (B) with the beveled side away from the blade holder.



 Bottom the blade slots against the screws. (This will position the blade at the correct angle.) Tighten the blade screws to secure the blade.

**Note** – Check the blade position to insure proper clearance between blade and guard by slowly pivoting the blade guard back.

#### **Blade Guard**

The blade guard covers the blade whenever a box is not being taped. Periodically check to be sure the blade guard is functioning properly and returning to cover the blade. Replace any defective parts.

#### **Blade Oiler Pad**



 Keep hands and fingers away from tape cutoff blades under orange blade guards. The blades are extremely sharp

To reduce adhesive build-up, the taping heads are equipped with a factory pre-lubricated felt oiler pad that provides a film of oil on the cutting edge of the blade. Blade maintainance should include keeping the felt oiler pad saturated with SAE #30 nondetergent oil.

Should tape adhesive build-up occur on blade, carefully wipe the blade clean with an oily cloth.

(Maintenance continued on next page.)



- To reduce the risk associated with shear, pinch, and entanglement hazards:
- Turn air and electrical supplies off on associated equipment before performing any adjustments, maintenance, or servicing the taping heads
- Never attempt to work on the taping head or load tape while the box drive system is running
- To reduce the risk associated with sharp blade hazards:
- Keep hands and fingers away from tape cutoff blades under orange blade guards. The blades are extremely sharp

#### Cleaning

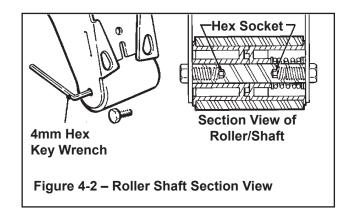
Regular slotted containers produce a great deal of dust and paper chips when conveyed through taping heads. If this dust is allowed to build-up on the heads, it can cause wear on the moving parts. Excessive dirt build-up should be wiped off with a damp cloth. Cleaning should be done once per month, depending on the number and type of boxes used. If the boxes used are dirty, or if the environment in which the heads operate is dusty, cleaning on a more frequent basis may be necessary.

 Note – Never attempt to remove dirt from taping heads by blowing it out with compressed air. This can cause the dirt to be blown inside the components onto sliding surfaces. Dirt in these areas can cause serious equipment damage. Never wash down or subject taping heads to conditions causing moisture condensation on components. Serious equipment damage could result.

#### **Applying/Buffing Roller Replacement**

Replacing roller requires removal of shaft and mounting screws. With no area on the shaft to grip, the shaft often turns when attempting to remove the second screw.

To ease removal of second screw, a 4mm hex socket has been provided at the bottom of the threads in both ends of the shaft. Insert a 4mm hex key wrench into this socket after removing one screw to hold the shaft for removal of the second screw (**Figure 4-2**).



#### Adjustments



- To reduce risk associated with shear, pinch, and entanglement hazards:
- Turn air and electrical supplies off associated equipment before performing any adjustments, maintenance, or servicing the machine or taping heads.
- Never attempt to work on the taping head or load tape while the box drive system is running.

#### Tape Latch Alignment – Figure 5-1

The Latching tape drum assembly is pre-set to accommodate 48mm [2 inch] wide tape. The tape drum assembly is adjustable to provide alignment of narrower tapes.

To move the latch to a position that corresponds to a new tape core width (Figure 5-1):

- 1. Remove screw from the latch.
- 2. Move to the latch to the position that corresponds to the tape core width.
- 3. Replace screw in the new latch location.

To adjust or center the tape width on the centerline of the taping head, and therefore box center seam, **(Figure 5-2):** 

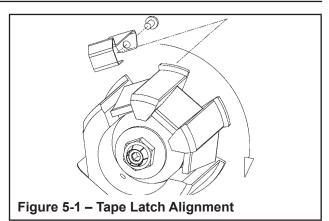
- 1. Loosen the locking hex nut behind tape drum bracket on tape drum shaft. Use an adjustable wrench or 25mm open end wrench.
- 2. Turn tape drum shaft in or out to center the tape web (use 5mm hex wrench).
- 3. Tighten locking hex nut to secure the adjustment.

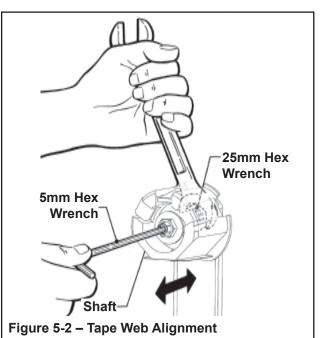
No other components require adjustment for tape web alignment.

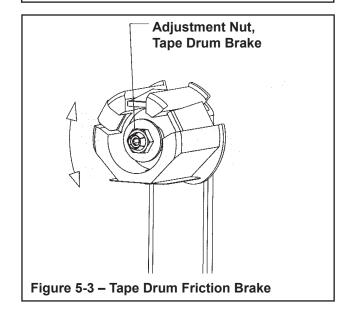
#### Tape Drum Friction Brake – Figure 5-3

The tape drum friction brake on each taping head is pre-set for normal operation to prevent tape roll over travel. Should tension adjustment be required, turn the self-locking nut on the shaft to vary compression of the spring. Turn the nut clockwise to increase the braking force, and counterclockwise to decrease the braking force. Adjust brake to minimum tension to prevent excessive tape roll over travel.

**Note** – Excess braking force will cause poor tape application and may lead to tape tabbing on the trailing tape leg.

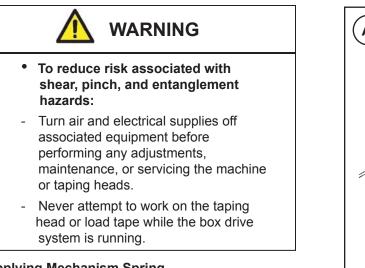






2+ STD 2" Taping Head - NA

(Adjustments continued on next page.)



#### Applying Mechanism Spring

To obtain access to the spring, remove the taping head cover (four mounting screws). Replace cover when finished.

The applying mechanism spring, shown in **Figures 5-4A and 5-4B**, controls applying and buffing roller pressure on the box and returns the mechanism to the reset position. The spring pressure is pre-set, as shown in **Figure 5-4A** for normal operation, but is adjustable.

If a tape gap appears on the trailing surface of the box increase spring pressure. If the front of the box is being crushed by the applying roller decrease spring pressure.

Removing the spring end loop from the spring holder and placing loop in other holes provided, as shown in **Figure 5-4B**, will adjust the spring pressure.

#### One-Way Tension Roller Figure 5-5

The one-way tension roller is factory set. When replacing this assembly, the roller must have 0,5 kg [1 lb.] minimum tangential force when turning.

To Adjust Tension:

- 1. Wrap a cord or small strap (non-adhesive) 4-6 turns around the tension roller.
- 2. Attach a spring scale to the end of the cord or strap.
- 3. Turn the adjusting nut with the socket wrench provided, until a force of approximately 0.5 kg to 0.9 kg [1 to 2 lbs.] is required to turn the roller by pulling on the spring scale.

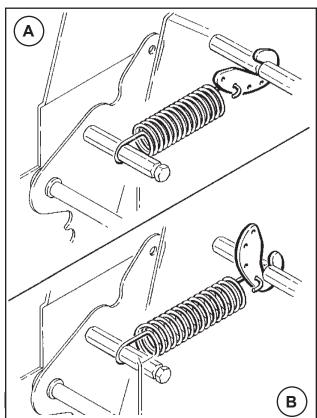
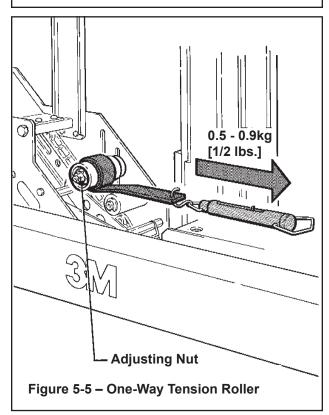


Figure 5-4 – Applying Mechanism Spring



2+ STD 2" Taping Head - NA

2011 December

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- To reduce the risk associated with shear, pinch, and entanglement hazards:
- Turn air and electrical supplies off associated equipment before performing any adjustments, maintenance, or servicing the machine or taping heads.
- Never attempt to work on the taping head or load tape while the box drive system is running.

# Tape Leg Length



- To reduce the risk associated with sharp blade hazards:
- Keep hands and fingers away from tape cutoff blades under orange blade guards. The blades are extremely sharp

#### Leading Tape Leg Length Adjustment – Figure 5-6

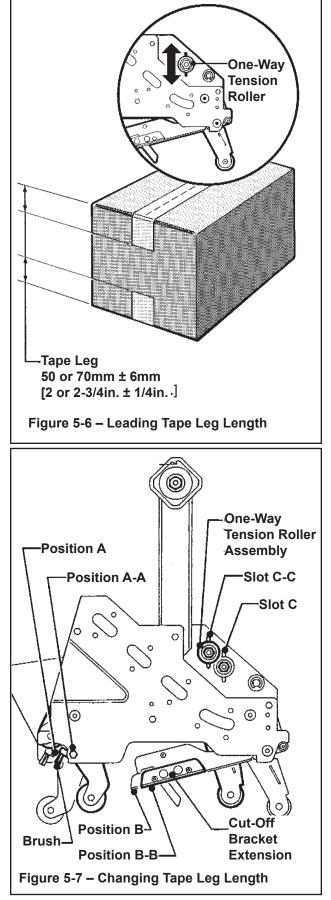
The one-way tension roller position is adjustable to control the leading tape leg length.

Moving this roller farther away from the box top or bottom surface will decrease the leading leg length. Moving it closer to the box top or bottom surface will increase the leading leg length.

# Changing Tape Leg Length from 70 to 50mm [2-3/4 to 2 Inches] – Figure 5-7

- **Note** When changing tape leg length, both upper and lower heads must be adjusted to apply the same leg lengths.
- 1. Remove and retain two hex head screws and remove the brush from normal position "A" on side frame.
- 2. Remount and secure brush in position "A-A" on side frame forward of normal location using original fasteners.
- 3. Remove cut-off bracket extensions from position "B".
- 4. Remount cut-off bracket extensions in forward position "B-B".
- 5. Remove and retain the one-way tension roller assembly from slot "C" in frame.
- 6. Remount tension roller assembly near top of slot "C-C" in frame using original fasteners.
- 7. Adjust tension roller according to "Leading Tape Leg Length Adjustment" above.

16



## Troubleshooting

# Troubleshooting Guide

Problem	Cause	Correction
The tape leg on the front of the case is too long	The tape is threaded incorrectly	The tape must go around the wrap roller before going around the one-way tension roller
	The tape tension is too low	Adjust the one-way tension roller
	The knurled roller drags	Check for adhesive build-up between the knurled roller and its shaft. Clean and lubricate shaft. Remove all lubricant from roller surfaces.
	Tape tracks to one side or drags on the support tabs of applying frame	Adjust the tape web alignments
	The one-way tension roller is not correctly positioned	Position the roller in its mounting slot so that the tape extends just beyond the centerline of the applying roller
	Taping head is not set up properly	Check leg length adjustments
The blade does not cut tape or the tape end is jagged or shredded	The blade is dull and/or has broken teeth	Replace the blade
	Tape tension is insufficient	Increase tape tension by adjusting the one-way tension roller
	Adhesive has built up on the blade	Clean and adjust the blade
	The blade is not positioned properly	Make sure the blade is bottomed out against the mounting bolts
	The blade is dry	Lubricate the blade oiler pad on the blade guard
	The blade is in backwards	Mount the blade so that the beveled edge is away from the entrance of the head
	One or both cutter springs are missing or stretched	Replace the defective spring(s)
	Tension roller surface is not fully contacting the taping head frame	Make sure one-way bearing is below the surface of the tension roller. If not, press bearing further into roller or replace roller.

# Troubleshooting Guide

Problem	Cause	Correction
Tape is tabbing on the trailing leg on the back of the box	There is excess tension on the tape drum assembly and/or the one-way tension roller assembly	Adjust the one-way tension roller and/or the tape drum assembly
	Rollers in the tape path do not rotate freely	Clean adhesive deposits from the surface, ends, and shafts of the rollers. Then lubricate roller shafts. Remove all lubricant from roller surfaces.
	The blade is not cutting tape properly	Refer to tape cutting problems
	The tape is threaded incorrectly	Re thread the tape
	Applying mechanism spring has too little tension	Move spring hook to next tighter hole
The tape end does not stay in	The tape is incorrectly threaded	Re thread the tape
application position in front of the applying roller	Flanged knurled roller overruns on return of applying mechanism to its rest position	Adjust tension roller position in mounting slot to lengthen tape leg
	Applying roller overruns on return of applying mechanism to its rest position	There should be a slight drag when rotating the applying roller. If not, check friction springs and/ or friction pins and replace if necessary
	The one-way tension roller is not correctly positioned	Position roller in it mounting slot so that tape end extends beyond centerline of applying roller
	The one-way tension roller is defective	Replace the one-way tension roller
Tape not centered on box seam	Tape drum not centered	Reposition tape drum
	Centering guides not centered	Adjust centering guides
	Box flaps not of equal length	Check box specifications

#### Spare Parts/Service Information

#### **Recommended Spare Parts**

Listed are a set of spare parts that will periodically require replacement due to normal wear. These parts should be ordered to keep the taping heads in production:

Qty.	Part Number	Description	
4	78-8076-4500-3	Stud – Mounting	
1	78-8070-1274-1	Spring – Upper Extension (Silver)	
1	78-8017-9173-8	Blade – 65 mm/2.56 Inch	
2	78-8052-6602-6	Spring – Cutter	
1	78-8076-4726-4	Tool – Tape Threading	

AccuGlide<sup>™</sup> 2+ STD 2 Inch Upper Taping Head

AccuGlide<sup>™</sup> 2+ STD 2 Inch Lower Taping Head

Qty.	Part Number	Description
1	78-8017-9173-8	Blade – 65 mm/2.56 Inch
2	78-8052-6602-6	Spring – Cutter
4	78-8076-4500-3	Stud – Mounting
1	78-8070-1273-3	Spring – Lower Extension (Black)
1	78-8076-4726-4	Tool – Tape Threading

In addition to the above set of spare parts supplied with the taping head, it is suggested that the following spare parts be maintained which will require replacement under normal wear of the taping head.

Qty.	Part Number	Description
1	78-8057-6179-4	Roller – Applying
1	78-8057-6178-6	Roller – Buffing
1	78-8113-7030-9	Spring – Torsion

#### **Replacement Parts and Service**

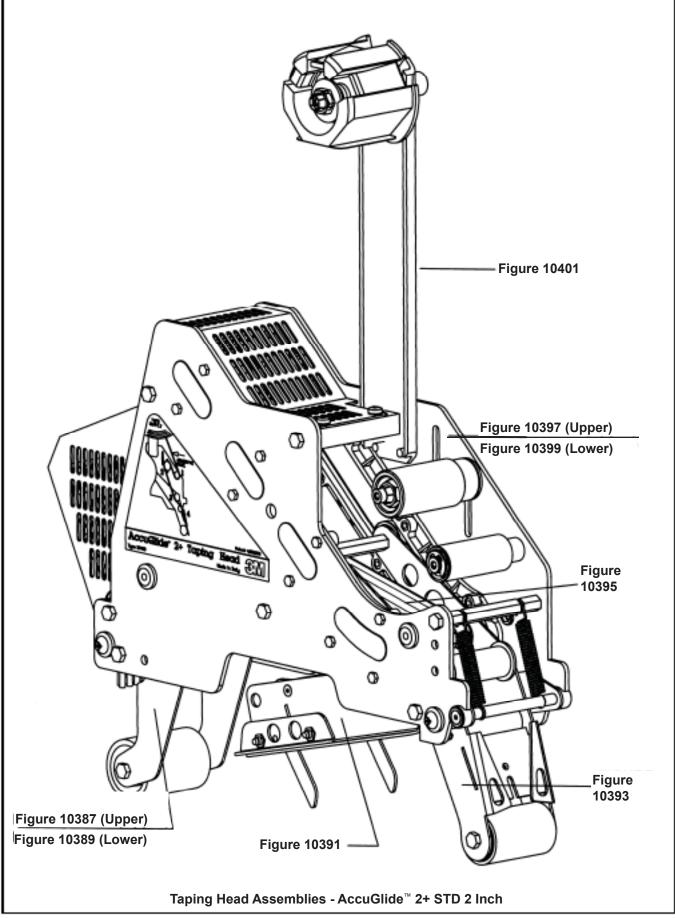
Refer to the first page of this instruction manual "Replacement Parts and Service Information".

Replacement Parts Illustrations and Parts Lists AccuGlide™ 2+ STD 2 Inch Upper Taping Head, Type 10500 AccuGlide™ 2+ STD 2 Inch Lower Taping Head, Type 10500

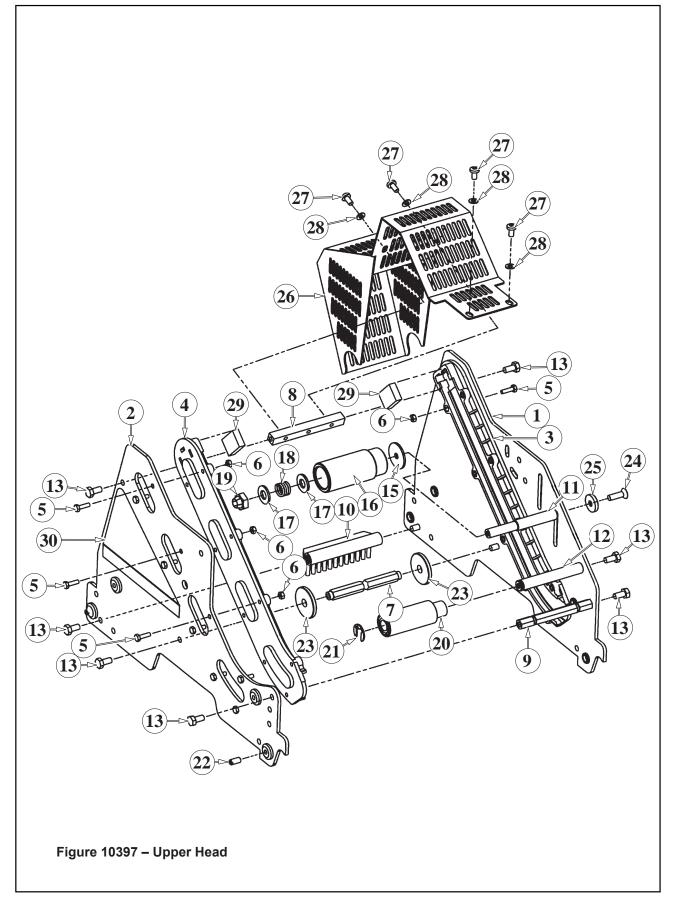
1. Refer to the **Taping Head Assemblies** Figure to find all the parts illustrations identified by **f gure numbers**.

2. Refer to the figure or figures to determine the **individual parts** required and the **parts reference number**.

- 3. The **replacement parts list**, that follows each illustration, includes the **part number** and **part description** for the parts in that illustration.
- Note The complete description has been included for standard fasteners and some commercially available components. This has been done to allow obtaining these standard parts locally, should the customer elect to do so.
- 4. Refer to the first page of this instruction manual **"Replacement Parts and Service Information"** for replacement parts ordering information.
- *Important* Not all the parts listed are normally stocked items. Some parts or assemblies shown are available only on a special order basis. Contact 3M/Tape Dispenser Parts to confirm item availability.



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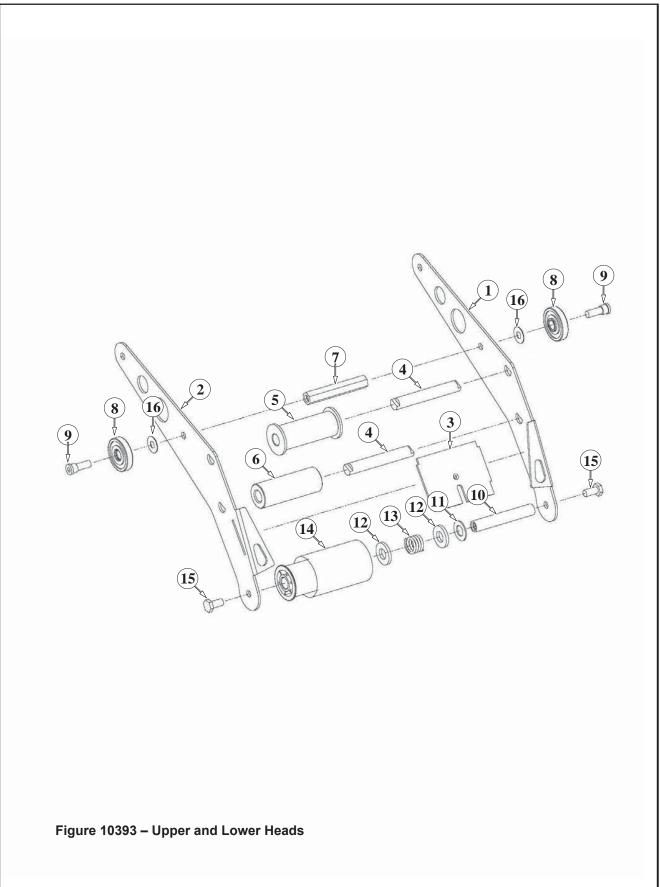


# Figure 10397 – 2" Upper Head

Ref. No.	3M Part No.	Description
40007.4	70 0400 0450 0	Frank Track Manual Hanna Arabanaha
10397-1	78-8133-9456-2	Frame – Tape Mount Upper Assembly
10397-2	78-8133-9458-8	Frame – Front Upper Assembly
10397-3	78-8068-4143-9	Guide – #1
10397-4	78-8068-4144-7	Guide – #2
10397-5	78-8060-7818-0	Screw – Hex Hd, M4 x 12
10397-6	78-8010-7416-8	Nut – Hex Jam, M4
10397-7	78-8070-1251-9	Spacer – Spring
10397-8	78-8054-8764-8	Spacer – 10 x 10 x 90 mm
10397-9	78-8052-6560-6	Spacer – Front
10397-10	78-8060-7936-0	Brush Assembly
10397-11	78-8052-6564-8	Shaft – Tension Roller
10397-12	78-8052-6568-9	Shaft – Wrap Roller
10397-13	26-1003-5829-5	Screw – Hex Hd, M6 x 12
10397-15	78-8100-1009-6	Washer – Special
10397-16	78-8052-6565-5	Roller – Top Tension
10397-17	26-1004-5510-9	Washer – Plain, M10
10397-18	78-8052-6567-1	Spring – Compression
10397-19	78-8017-9077-1	Nut – Self Locking, M10 x 1
10397-20	78-8052-6569-7	Roller – Wrap
10397-21	26-1000-1613-3	Ring – Retaining, Tru-Arc #1-420-0120-100
10397-22	78-8076-4500-3	Stud – Mounting
10397-23	78-8076-5242-1	Stop – Cut-Off Frame
10397-24	78-8060-8179-6	Screw – Flat Hd Hex, M6 x 20
10397-25	78-8076-5477-3	Washer – Special /6.5 x 20 x 4
10397-26	78-8100-1047-6	Guard – Head
10397-27	78-8060-8087-1	Screw – M5 x 10
10397-28	78-8005-5741-1	Washer – Flat, M5
10397-29	78-8133-9615-3	Bumper
10397-30	78-8133-9605-4	Label – Threading, English Language
	aning Head - NA	2011 b[ c^{ à^!

GÉÁSTD 2" Taping Head - NA

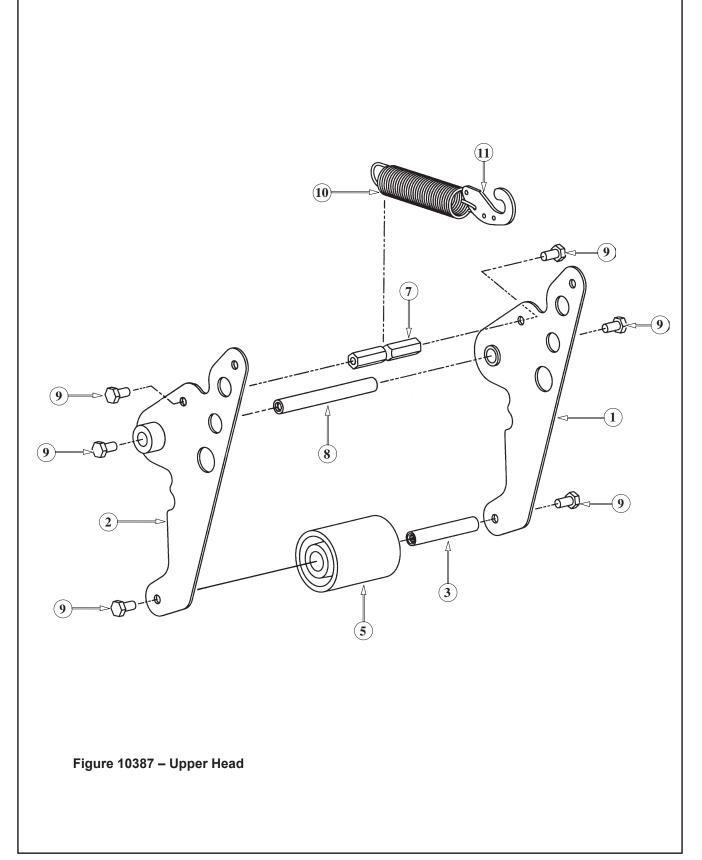
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## AccuGlide<sup>™</sup> 2+ STD 2 Inch

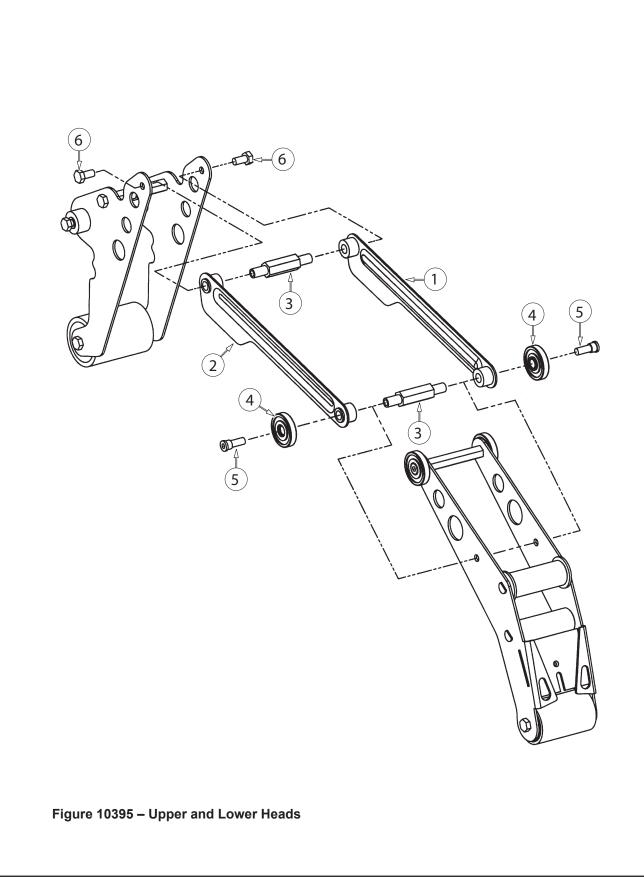
# Figure 10393 – 2" Upper and Lower Heads

Ref. No.	3M Part No.	Description
10393-1	78-8133-9509-8	Applying Arm #1
10393-2	78-8133-9510-6	Applying Arm #2
10393-3	78-8070-1221-2	Plate – Tape
10393-4	78-8070-1309-5	Shaft Roller
10393-5	78-8070-1367-3	Roller – Knurled Assembly
10393-6	78-8070-1266-7	Roller – Wrap
10393-7	78-8052-6580-4	Spacer
10393-8	78-8017-9082-1	Bearing – Special, 30 mm
10393-9	78-8017-9106-8	Screw – Bearing Shoulder
10393-10	78-8052-6575-4	Shaft – Roller
10393-11	78-8017-9074-8	Washer – Nylon, 15 mm
10393-12	26-1004-5510-9	Washer – Friction
10393-13	78-8052-6567-1	Spring – Compression
10393-14	78-8137-1438-9	Assembly – Applying Roller
10393-15	26-1003-5829-5	Screw – Hex Hd, M6 x 12
10393-16	78-8094-6151-6	Washer - Flat, 6.5 ID x 15 OD x 0.5 Thk



### Figure 10387 – 2" Upper Head

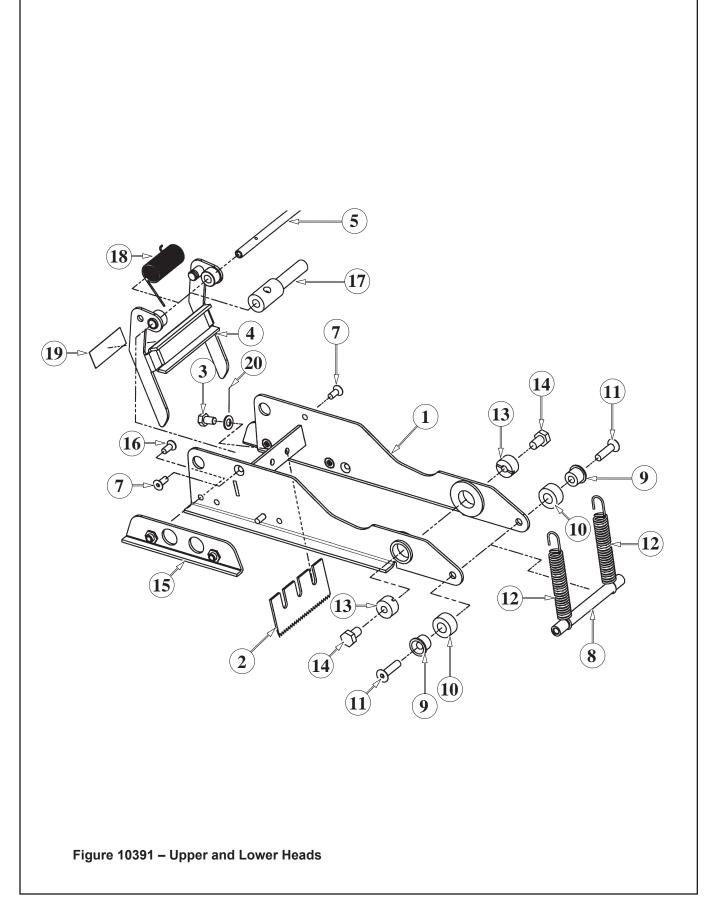
Ref. No.	3M Part No.	Description
10387-1	78-8070-1392-1	Buffing Arm – Sub Assembly
10387-2	78-8070-1391-3	Buffing Arm – Sub Assembly
10387-3	78-8052-6575-4	Shaft – Roller
10387-5	78-8137-1398-5	Roller - Buffing Assembly
10387-7	78-8070-1220-4	Spacer – Spring
10387-8	78-8017-9109-2	Shaft – 10 x 90 mm
10387-9	26-1003-5829-5	Screw – Hex Hd, M6 x 12
10387-10	78-8070-1274-1	Spring – Upper (Silver)
10387-11	78-8070-1244-4	Holder – Spring



# AccuGlide<sup>™</sup> 2+ STD 2 Inch

# Figure 10395 – 2" Upper and Lower Heads

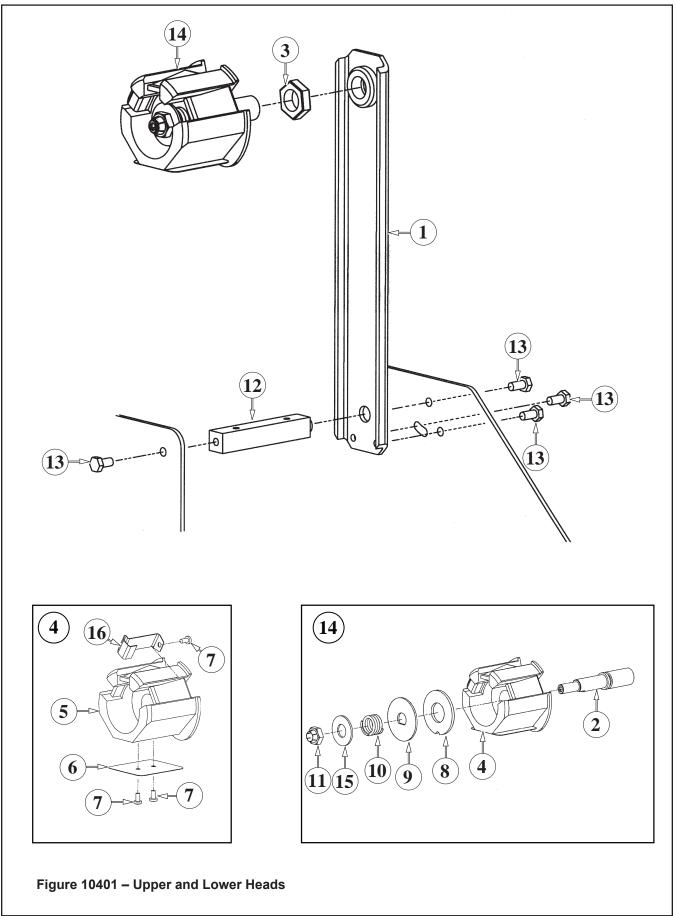
Ref. No.	3M Part No.	Description	
Rel. NO.	SIM Part NO.	Description	
10395-1	78-8070-1388-9	Link – Arm Bushing Assembly	
10205 0	70 0070 1000 7	Link Arm Duching Accomply	
10395-2	78-8070-1389-7	Link – Arm Bushing Assembly	
10395-3	78-8070-1271-7	Shaft – Pivot	
40005 4	70 0017 0000 1		
10395-4	78-8017-9082-1	Bearing – Special 30 mm	
10395-5	78-8017-9106-8	Screw – Bearing Shoulder	
		5	
10395-6	26-1003-5829-5	Screw – Hex Hd, M6 x 12	



# Figure 10391 – 2" Upper and Lower Heads

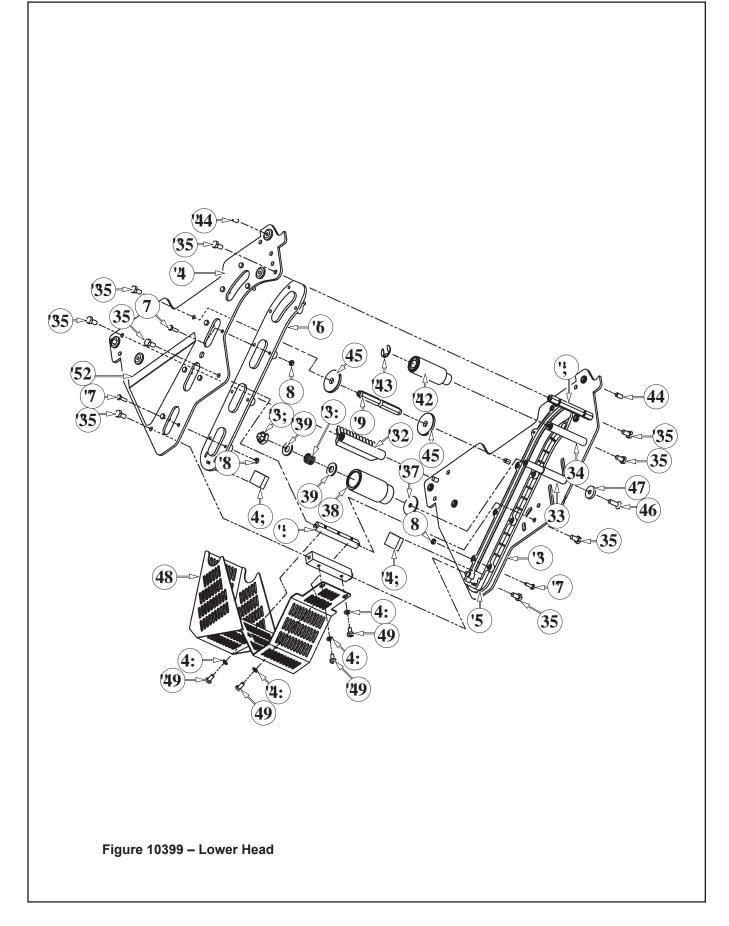
Ref. No.	3M Part No.	Description
10391-1	78-8070-1217-0	Frame – Cut-Off Weldment
10391-2	78-8017-9173-8	Blade – 65 mm/2.56 Inch
10391-3	26-1003-8596-7	Screw - Hex Hd M5 x 8 w/ Ext. Tooth Lockwasher
10391-4	78-8070-1371-5	Blade Guard Assembly – W/English Language Label
10391-5	78-8052-6597-8	Shaft – Blade Guard
10391-7	26-1005-4758-2	Screw – Flat Hd, Soc Dr, M4 x 10
10391-8	78-8017-9135-7	Shaft – Spacer
10391-9	78-8052-6600-0	Spacer
10391-10	78-8070-1269-1	Bumper
10391-11	26-1005-4757-4	Screw – Flat Hd, Soc Dr, M5 x 20
10391-12	78-8052-6602-6	Spring – Cutter
10391-13	78-8017-9132-4	Pivot – Cutter Lever
10391-14	26-1003-5828-7	Screw – Spec, Hex Hd, M6 x 10
10391-15	78-8070-1216-2	Slide – Extension
10391-16	26-1008-6574-5	Screw – Flat Hd, Phil Dr, M4 x 10
10391-17	78-8113-7031-7	Bushing – 58.5 mm Long
10391-18	78-8113-7030-9	Spring – Torsion
10391-19	78-8070-1335-0	Label – Warning, English

AccuGlide<sup>™</sup> 2+ STD 2 Inch



# Figure 10401 – 2" Latch Upper and Lower Heads

Ref. No.	3M Part No.	Description
10401-1	78-8070-1395-4	Bracket – Bushing Assembly
10401-2	78-8076-4519-3	Shaft – Tape Drum, 50 mm
10401-3	78-8017-9169-6	Nut – M18 x 1
10401-4	78-8098-8827-0	Tape Drum Sub Assembly – 2 Inch Wide
10401-5	78-8098-8749-6	Tape Drum
10401-6	78-8098-8817-1	Leaf Spring
10401-7	26-1002-5753-9	Screw – Self Tapping
10401-8	78-8060-8172-1	Washer – Friction
10401-9	78-8052-6271-0	Washer – Tape Drum
10401-10	78-8100-1048-4	Spring – Core Holder
10401-11	78-8017-9077-1	Nut – Self Locking, M10 x 1
10401-12	78-8100-1046-8	Spacer – Bracket
10401-13	26-1003-5829-5	Screw – Hex Hd, M6 x 12
10401-14	78-8098-8814-8	Tape Drum Assembly – 2 Inch Head
10401-15	26-1004-5510-9	Washer – Plain, M10
10401-16	78-8098-8816-3	Latch – Tape Drum

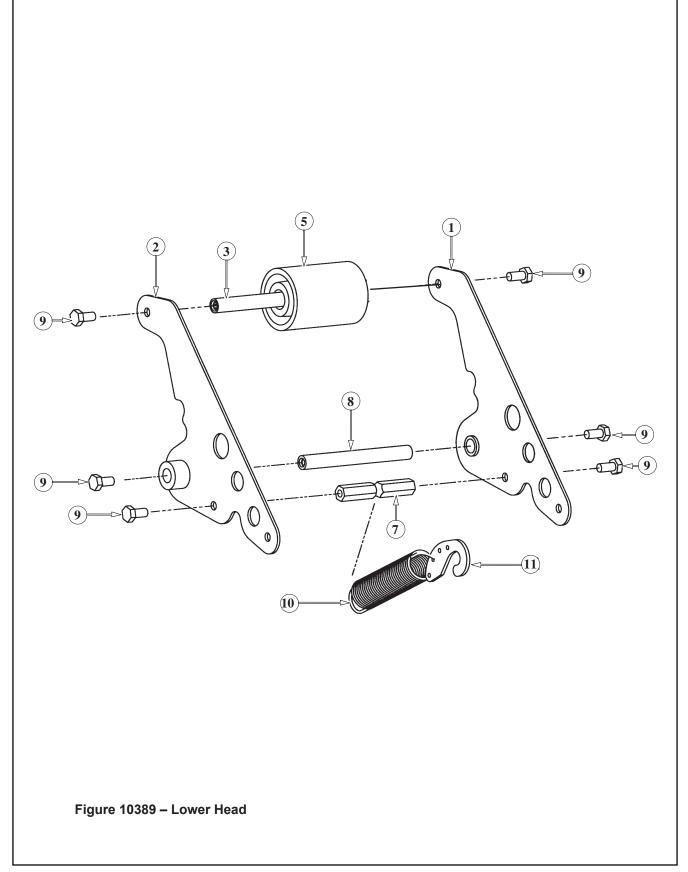


# Figure 10399 – 2" Lower Head

Ref. No.	3M Part No.	Description	
10399-1	78-8133-9502-3	Frame – Tape Mount Lower Assembly	
10399-2	78-8133-9500-7	Frame – Front Lower Assembly	
10399-3	78-8068-4144-7	Guide – #2	
10399-4	78-8068-4143-9	Guide – #1	
10399-5	78-8060-7818-0	Screw – Hex Hd, M4 x 12	
10399-6	78-8010-7416-8	Nut – Hex, M4	
10399-7	78-8070-1251-9	Spacer – Spring	
10399-8	78-8054-8764-8	Spacer – 10 x 10 x 90 mm	
10399-9	78-8052-6560-6	Spacer – Front	
10399-10	78-8060-7936-0	Brush Assembly	
10399-11	78-8052-6564-8	Shaft – Tension Roller	
10399-12	78-8052-6568-9	Shaft – Wrap Roller	
10399-13	26-1003-5829-5	Screw – Hex Hd, M6 x 12	
10399-15	78-8100-1009-6	Washer – Special	
10399-16	78-8052-6606-7	Roller – Tension Bottom	
10399-17	26-1004-5510-9	Washer – Plain, M10	
10399-18	78-8052-6567-1	Spring – Compression	
10399-19	78-8017-9077-1	Nut – Self Locking, M10 x 1	
10399-20	78-8052-6569-7	Roller – Wrap	
10399-21	26-1000-1613-3	Ring – Retaining, Tru-Arc #1-420-0120-100	
10399-22	78-8076-4500-3	Stud – Mounting	
10399-23	78-8076-5242-1	Stop – Cut-Off Frame	
10399-24	78-8060-8179-6	Screw – Flat Hd Hex, M6 x 20	
10399-25	78-8076-5477-3	Washer – Special /6.5 x 20 x 4	
10399-26	78-8100-1047-6	Guard – Head	
10399-27	78-8060-8087-1	Screw – M5 x 10	
10399-28	78-8005-5741-1	Washer – Flat, M5	
10399-29	78-8133-9615-3	Bumper	
10399-30	78-8133-9606-2	Label – Threading, English Language	

GÉÁSTD 2" Taping Head - NA

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# Figure 10389 – Lower Head

Ref. No.	3M Part No.	Description
10389-1	78-8070-1391-3	Buffing Arm Sub Assembly, #1
10389-2	78-8070-1392-1	Buffing Arm Sub Assembly, #2
10389-3	78-8052-6575-4	Shaft – Roller
10389-5	78-8137-1398-5	Roller - Buffing Assembly
10389-7	78-8070-1220-4	Spacer – Spring
10389-8	78-8017-9109-2	Shaft – 10 x 90 mm
10389-9	26-1003-5829-5	Screw – Hex Hd, M6 x 12
10389-10	78-8070-1273-3	Spring – Lower (Black)
10389-11	78-8070-1244-4	Holder – Spring

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