







molex[®]









WS-1000
Pneumatic Bench Top Wire Stripping Machine
Operation Manual
Order No. 63801-9200 (AWG wire)
Order No. 63801-9250 (Metric wire)


- Description
- Operation
- Maintenance

Safety Warnings and Information

	<p>Read and understand all of the instructions and safety information in this manual before operating or servicing this tool.</p> <p style="text-align: center;"><u>Keep this manual available when using this tool.</u></p> <p style="text-align: center;">Replacement manuals are available at www.molex.com.</p>
---	---

SAFETY ALERT SYMBOL	
<p>This symbol is used to call your attention to hazards or unsafe practices which could result in an injury or property damage. The signal word, defined below, indicates the severity of the hazard. The message after the signal word provides information for preventing or avoiding the hazard.</p>	
 DANGER	<p>DANGER: Indicates an imminently hazardous situation which, if not avoided, could result in death or serious injury.</p>
 WARNING	<p>WARNING: Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.</p>
 CAUTION	<p>CAUTION: Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. CAUTION may also be used to alert against unsafe practices associated with events that could lead to personal injury.</p>

	<p> WARNING</p> <p>Always wear proper eye protection when Operating or servicing this tool.</p> <p>Failure to wear eye protection could result in serious eye injury from flying debris during test.</p>		<p> WARNING</p> <p>Never use this machine without safety devices that are intended to prevent hands from remaining in the tool.</p> <p>Failure to observe this warning could result in severe injury or death.</p>
	<p> WARNING</p> <p>Never operate, service, install, or adjust this equipment without proper instruction and without first reading and understanding the instructions in this manual and all applicable press and/or wire processing machine manuals.</p>		<p> WARNING</p> <p>Do not use compressed air to clean the equipment. The forces created by compressed air can force debris into the tool.</p> <p>Failure to observe these precautions may result in injury or property damage.</p>

<p> CAUTION</p> <p>Never perform any service or maintenance other than as described in this manual. Never modify, alter or misuse the equipment</p> <p>Molex crimp specifications are valid only when used with Molex terminals and tooling.</p> <p>Failure to observe this precaution may result in injury and / or property damage.</p>
--

 **WARNING**

THE PNEUMATIC BENCH TOP WIRE STRIPPING MACHINE IS NOT INTENDED FOR THE PROCESSING OF MATERIALS OTHER THAN THOSE NORMALLY USED IN INSULATION AND JACKET MATERIALS FOR WIRES AND ELECTRICAL CONDUCTORS.

THE PNEUMATIC BENCH TOP WIRE STRIPPING MACHINE IS ALSO NOT INTENDED FOR THE PROCESSING OF MASSIVE SHIELDS MADE OF COPPER OR HARDER MATERIALS, STEEL WIRE NETWORKS ETC.

Tooling Technical Assistance

Molex offers tooling technical assistance for customers who may need some guidance for tooling adjustments. This support can be obtained by calling either of the two numbers listed below and asking for the Molex Tooling Group.

Call Toll Free 1-800-786-6539 (US) 1-630-969-4550 (Global).

This assistance is limited to the operation and set-up of a customer's Molex tool. Questions with regard to Molex connector products or how to identify the proper tooling and/ or tooling documentation should be directed to your local Molex personnel or Customer Service Representative.

When calling for service on the Pneumatic Bench Top Stripping Machine it is recommended to have the following: a copy of the Operation Manual and a person familiar with the press should be present. The following information is also recommended to supply:

1. Customer name
2. Customer address
3. Person to contact such as (name, title, e-mail, and telephone number)
4. Urgency of request
5. Nature of problem

Molex Application Tooling Group

2200 Wellington Court
Lisle, IL 60532, USA
Tel: +1 (630) 969-4550
Fax: +1 (630) 505-0049

Visit our Web site at <http://www.molex.com>

Table of Contents

WS-1000	1
Pneumatic Bench Top Wire Stripping Machine	1
Safety Warnings and Information	2
Tooling Technical Assistance	3
Section 1	5
General Description	5
Principal Mechanical Parts of the WS-1000 (63801-9200 / 63801-9250).....	6
General Description	7
1.1 Description (See Figure 1-1).....	7
1.2 Features	7
1.3 Technical Specification.....	7
1.4 Delivery Check	7
1.5 Tools.....	7
Section 2	8
Set-Up and Adjustments	8
2.1 Set-up.....	9
Air Supply Hook-Up	9
Safety Devices.....	9
2.2 Operation.....	10
2.3 Adjustments	10
2.4 Installing and Replacing Blades.....	11
2.5 Adjustment of the Brakes	12
Section 3	13
Maintenance	14
3.1 Cleaning	14
3.2 Lubrication	14
3.3 Perishable Parts	15
3.4 Spare Parts	15
3.5 Storage.....	15
Section 4	16
4.1 Main Parts List.....	17
Assembly Drawing	19
4.2.1 Troubleshooting.....	20

Section 1

General Description

1.1 Description

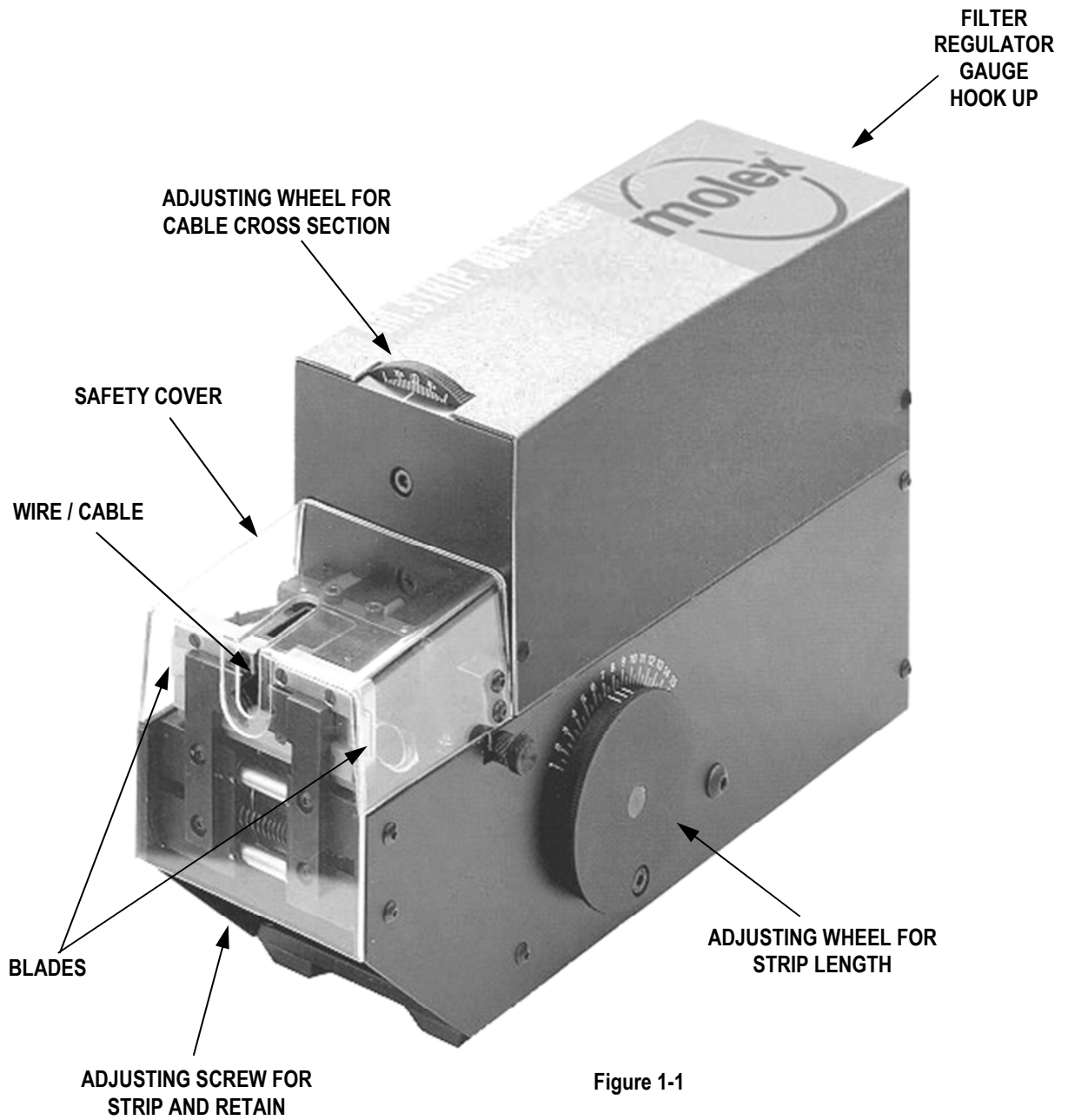
1.2 Features

1.3 Technical Specifications

1.4 Delivery Check

1.5 Tools

Principal Mechanical Parts of the WS-1000 (63801-9200 / 63801-9250)



General Description

1.1 Description (See Figure 1-1)

The WS-1000 Pneumatic Bench Top Wire Stripping Machine, Order no. 63801-9200 for AWG wire and 63801-9250 for metric wire, is a semi-automatic, pneumatic table instrument for the stripping of cables and wires with insulations of different natural and synthetic materials, such as; rubber, PUR, Teflon etc.

The use of special blades, adapted to the cable to be processed, allows the processing of nearly all common round and flat cables.

The Pneumatic Bench Top Wire Stripping Machine can handle extremely short wire leads, less than 9mm in length. It can adjust to change wire strip diameter settings, easily without tools, to process a full range of wire sizes. The V-shaped blades can be adjusted for the full range of wire sizes, quickly in seconds, without tools, for quick production run changeouts. Self-centering clamping jaws and release sensors ensure high quality strips, safely and efficiently.

1.2 Features

- Extremely short stranded wire ends can be processed (distance cover to stripping blades <= 9 mm)
- Exact parallel guide of the blade heads
- Processing with die-blades, prismatic blades and flat stripping blades
- Blade change within seconds and without tools
- Sensor release of the stripping process
- Self-centering clamping jaws
- Air blow-out
- Guard cover for safety
- Putting in the cable from above

1.3 Technical Specification

Dimensions

Width	95.0mm (3.74")
Depth	280.0mm (11.02")
Height	165.0mm (6.50")
Weight	4.3kg (9.5lbs)

Operating Parameters

Cycle Time	0.5 seconds
Operating Air Pressure maximum	3 to 6 bar (43 to 87psi) 6 bar (87psi)
Air Consumption per cycle	0.15l (0.005 cubic feet)

Sound Level

< 70 dB(A)

Cable

Round cables up to 5.0mm (.196") O.D.
 Cross section from 0.15 - 4mm² (26 - 12 AWG)
 Flat cables up to 8mm wide (.315")
 Partial stroke from 1.0 – 15.0mm (0.04 – 0.59")
 Stripping length of 1.5-15.0mm (.06 - .59") (total stripping)
 Removal length of 0 – 15.0mm (0 - .59")

Safety covers

Standard. **Order No.**
63801-9228
4.0mm (.157") maximum insulation diameter

Cover with safety collar (optional)

63801-9229
8.0mm (.315") maximum insulation diameter

1.4 Delivery Check

Carefully remove Wire Stripping Machine from its shipping container and determine that the following items are included in the package.

Description	Quantity
63801-92*0 Pneumatic Bench Top Wire Stripping Machine	1
63801-9243 Hex Wrench 5mm	1
63801-9271 pair of prismatic blades (installed at the factory)	1
63801-9230 pair of rubber pads for clamping jaws	1
63801-9201 Air regulator & shut-off assy	1
TM-638019200 Instruction Manual	1

1.5 Tools

The following tools are recommended for setup and adjustments.

- ✓ Metric standard hex wrench set
- ✓ Adjustable wrench
- ✓ Wire stripper / cutter

Section 2

Set-Up and Adjustments

- 2.1 Setup
- 2.2 Operation
- 2.3 Adjustments
- 2.4 Installing and Replacing Blades
- 2.5 Adjustment of the Brakes

2.1 Set-up

Caution: Always disconnect the air pressure until the system is ready to operate.

Note: Detail nos. in parenthesis () are shown on the Assembly Drawing in Section 5. These are not order nos.

Air Supply Hook-Up

1. Read the following instructions before attempting to operate the tool.
2. An Air Regulator assembly, order no. 63801-9201, is included with this tool. It includes a filter / regulator unit with air shut-off and supply hose. Connect the assembly to the back panel of the machine, with the two included cap screws. See Figure 2-1.
3. Adjust the regulator to an operating pressure of 3 - 6 bar (43 – 87 PSI). The maximum operating pressure is 6 bar (87 PSI).
Operating the tool above the maximum pressure may cause injury or damage to the tool.
4. Before using the machine, make sure the clear plastic safety cover is installed.



Figure 2-1

Safety Devices

The WS-1000 Bench Top Wire Stripping Machine is equipped with all necessary safety devices. However, no system can be completely protected against misuse. All changes and amendments not made by the manufacturer, or other modifications that are not granted in writing by the manufacturer, will void all guarantees and liability claims.

When the safety cover is removed a safety switch will prevent the machine from operating.

The clear plastic safety cover supplied with the unit, order no. 63801-9228 (028.0071), is for cable or wire insulation outer diameters up to 4.0mm.

In addition to the standard safety cover, an optional safety cover, order no. 63801-9229 (028.0072), is available for cable or wire insulation outer diameters over 4.0mm.

The safety cover protects the operator from the hazardous area of the Wire Stripping Machine. Please check regularly that the safety cover functions correctly by unscrewing the safety cover's two knurled screws, and sliding the cover forward (towards the operator)

Note: If the machine works correctly, the safety switch will interrupt the air supply and the machine will not function. If the safety device does not function properly, operation of the machine should be avoided until the safety switch is repaired.

2.2. Operation

The cable is put into the machine through the opening in the safety cover from above or from the front and is pushed against the sensor. This sensor starts the working cycle, which functions as follows:

1. The starting position is where the Clamp Jaws (028.0010 and 028.0011) and blades are open and the Blade Head (028.0014) with sensor is in the front position. Front position is when the Blade Head is placed directly behind the Clamping Jaws
2. The back position is when the Blade Head is placed at the end of its way towards the Front Plate (028.0001).
3. Insert the cable or wire into the slot of the safety cover until the end touches the Sensor (028.0035). See Figure 2-2.
4. The Clamp Jaws will come together and then clamp and center the cable.
5. The blades move together and cut into the insulation of the cable or wire.
6. The complete slide, with blade head and blades, moves backwards to the adjusted removal length. At the same time, the sensor moves backwards.
7. After the slide and the blade head have reached their final position, the clamp jaws open and then the blades. The slide moves backwards to the initial position. At the same time, a small air jet blows the stripping debris into the waste shaft (028.0028).

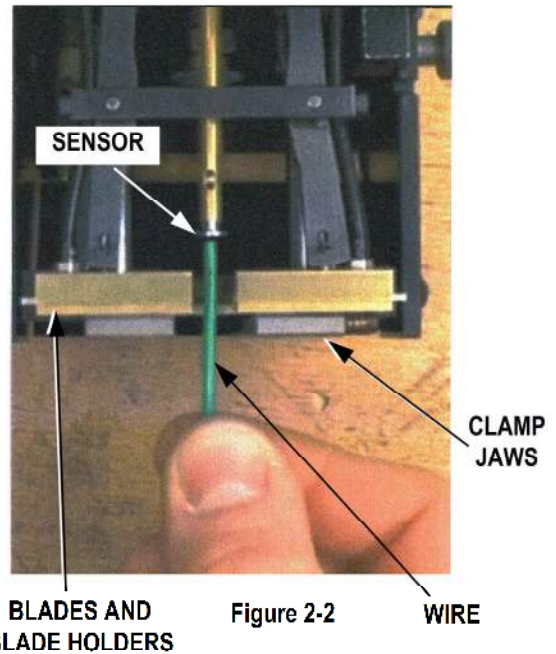


Figure 2-2

2.3. Adjustments

1. **Cable / Wire diameter** (See Figure 2-3)

The adjusting wheel for the conductor diameter of the wire to be stripped, is located in the front at the top of the machine. (028.0015 for metric or 028.0083 for AWG)



Figure 2-3

Note: While using die blades, the adjusting wheel has to be put in the position marked \emptyset .

While using **prismatic blades** or **flat stripping blades**, the adjusting wheel has to be opened wide enough. Adjust the necessary diameter step by step, until satisfactory stripping results are obtained - otherwise, there is risk that the blades will cut into the wires.

The scale values on the adjusting wheel are related to the diameter of the conductor, when prismatic blades are used.

2. Stripping length (See Figure 2-4)

The desired stripping length 1.5 – 15.0mm (.059” to .590”) is adjusted with the adjusting wheel (028.0046) on the right side of the machine in increments of 0.5mm.

Note: The middle scale line is valid when using the Prismatic Blades. The front and rear scale lines are used when using the Flat Blades; The front line is used when the draft angle of the flat blade is facing out and the rear scale line is used when the draft angle of the Flat Blade is facing in (not visible)

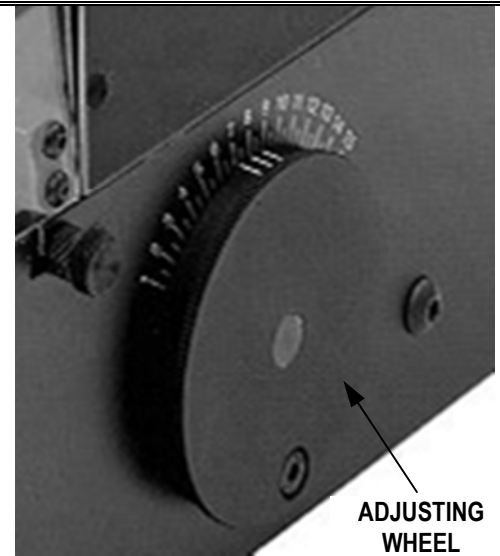


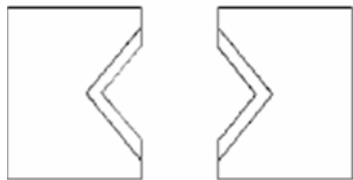
Figure 2-4

3. Removal length / Partial stroke (See Figure 1-1)

The removal length also can be adjusted as required, (from 0 – 15.0mm). This is done by using a 5mm hex wrench to adjust the screw (028.0041), located through the hole on the lower left side of the front plate.

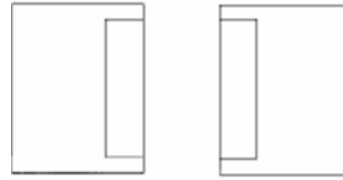
2.4. Installing and Replacing Blades

This machine will accommodate 2 different interchangeable blade sets. The 63801-9200 includes the standard prismatic blades, order no. 63801-9271. There are also optional flat stripping blades available, order no. 63801-9272. Follow the steps below to install and replace them.



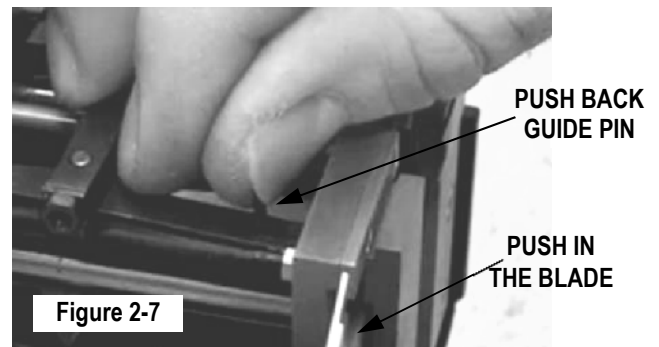
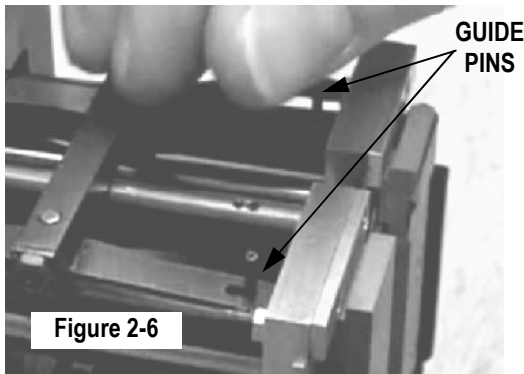
63801-9271 PRISMATIC BLADES

Figure 2-5



63801-9272 FLAT STRIPPING BLADES

1. Remove the safety cover. This is done by loosening (2) knurled screws on each side of the cover and then sliding the cover forward, up and off the machine.
2. Push back the guide pin on the swing lever that is located behind each blade holder, (one side at a time) and pull out the blade from the side. See Figure 2.6.
3. Make sure that the guide slots are clean and free of debris.
4. To Install new blades, push back the guide pin and slide in the blade until the blade clicks onto the guide pin. Make sure that the guide pins catch in the corresponding holes of the blades. See Figure 2-7.



Note: The prismatic blades must be installed so they overlap when closed.

2.5 Adjustment of the Brakes

The correct function of this machine is dependent on two adjustable brakes. Improper adjustment or wear of the brakes can influence the function of the machine and cause faulty stripping results.

The following two malfunctions are possible, due to improperly adjusted brakes:

1. **The blades move together before the clamp jaws close - this means that the cable is not sufficiently clamped and centered.**

Correction:

The brake, below the cylinder (028.6001), requires readjustment:

1. Unscrew the button head screw (028.8033) on the side plate (028.0002).
 2. Turn the screw, located behind the side plate (028.0002), with a 3mm hex wrench, approximately 1 to 3 turns clockwise (CW).
 3. This tightens the brake and increases the brake power.
2. **The slide blade head (028.0014) with blade holder and blade moves back before the blades have moved together – this means that the insulation is removed too late or not at all.**

Caution: Before re-adjusting the brake always disconnect the compressed air from the machine.

Correction:

The brake (028.0040) requires readjustment.

1. Remove the compressed air supply from the machine.
2. Unscrew the cover (028.5001).
3. Turn the screw (009.8050) with a 3mm hex wrench approximately 1 to 3 turns clockwise (CW).
4. Check the correct brake adjustment by pushing back (machine should have no compressed air) the cylinder (028.6001) manually on the unscrewed carrier. The blades will first move together. Then, the cone (028.0053) must move with its binding face against the adjusting screw (028.0036). Finally, it pulls back the complete slide (blade head 028.0014) with blade holders and the blades.
5. In an opposite movement, the slide (blade head 028.0014) is pulled towards the front plate (028.0001). The blades first have to open before the slide (028.0014) moves.

Section 3

Maintenance

- 3.1 Cleaning
- 3.2 Lubrication
- 3.3 Perishable Parts
- 3.4 Spare Parts
- 3.5 Storage

Maintenance

CAUTION: Always disconnect the compressed air supply before all maintenance

In order to insure the best operating condition and machine safety, a regular inspection of all relevant parts and functions should be done, appropriate to the frequency of their use.

3.1 Cleaning

See Chart for recommended Preventive Maintenance Schedule.

An example of a maintenance chart is shown below. Copy and use this chart to track the maintenance of your machine or use this as a template to create you own schedule or use your company's standard chart, if applicable.

The following applies to this machine with tooling installed.

1. For efficient operation, the tooling should be cleaned daily with a soft bristle brush to remove any debris from the tooling area.
2. All hose connections must be free of grit and grime.
3. Machine interior:
From time to time, the working area of the machine should be cleaned with a soft brush. An intermediate cleaning is recommended in case of considerable dirt due to talcum and stripping scrap. Make sure that there are no foreign parts or liquids getting into the case openings.
4. When it is necessary to change the tooling, care should be taken to remove any debris from tapped holes or mounting surfaces. Debris can prevent tooling from being properly locked into position.
5. All rotating and other movable elements are equipped with antifriction bearings or maintenance-free slide bearings. These parts are adequately lubricated and do not require any further maintenance.

CAUTION: Using compressed air to clean tooling is not recommended. Chips can wedge in the tooling and/or fly at an operator.

3.2 Lubrication

Pneumatics

All control valves and cylinders have been adequately lubricated with pneumatic oil, and therefore, do not require any further maintenance.

Filter-Regulator

It will be necessary to check the filter bowl at least once a month, depending on how dirty the air supply is, and empty as required.

Preventive Maintenance Chart

Daily: Clean. See Section 4.1.

CHECK SHEET MONTH _____ YEAR _____

Week	Daily Use	Days of the Week							Solution
		MON	TUE	WED	THU	FRI	SAT	SUN	
1									
2									
3									
4									
Bleeding Air From the System	After prolong use								Run the system thru several cycles.
Cleaning	Hose connections free of grit and dirt.								Use soft cloth

Schedule should be adjusted up or down depending on usage. Molex recommends that a log of preventive maintenance be kept with the tool.

3.3 Perishable Parts

Customers are responsible for maintaining the Pneumatic Bench Top Wire Stripping Machine. Perishable parts are those parts that come in contact with the product and will wear out over time. Molex recommends that all customers keep at least one set of the perishable parts in stock at all times. This will reduce the amount of production down time.

3.4 Spare Parts

Customers are responsible for maintaining the The Pneumatic Bench Top Wire Stripping Machine. Spare parts are available. Moving and functioning parts can be damaged or wear out over time and will require replacement. Molex recommends that the customer keep some or all of them in stock to reduce production down time. These parts are identified in the Parts List. See Section 5.

3.5 Storage

When storing the WS-1000 Pneumatic Bench Top Wire Stripping Machine, disconnect the air supply and store in a dry location.

Section 4

Parts List, Assembly Drawings and Troubleshooting

- 4.1. Parts Lists and Assembly Drawings
- 4.2. Troubleshooting


4.1 Main Parts List

WS-1000 Pneumatic Bench Top Wire Stripping Machine (63801-9200 or 36801-9250)				
Order No	Detail No	Description	RSP / PP Parts and Notes	Quantity
63801-9201	Not shown	Filter Regulator and shut-off valve assy	Pneumatic parts	1
63801-9202	003.6027	Micro Ram Valve	Pneumatic parts	1
63801-9203	009.8050	Screw		3
63801-9204	028.0001	Front Plate		1
63801-9205	028.0002	Side Plate (Right)		1
63801-9206	028.0003	Side Plate (Left)		1
63801-9207	028.0004	Back Plate		1
63801-9208	028.0005	Bottom Plate		1
63801-9209	028.0010	Clamp Jaw, Right		1
63801-9210	028.0011	Clamp Jaw, Left		1
63801-9211	028.0014	Blade Head		1
63801-9212	028.0015	Adjusting Wheel (metric wire sizes)	On 63801-9250	1
63801-9213	028.0017	Sleeve		1
63801-9214	028.0025	Sensor Fork		1
63801-9215	028.0028	Waste Shaft		1
63801-9216	028.0034	Pipe For Sensor		1
63801-9217	028.0035	Sensor		1
63801-9218	028.0036	Adjusting Screw		1
63801-9219	028.0037	Rubber For Ram		1
63801-9220	028.0038	Swing Pin		2
63801-9221	028.0040	Brake		1
63801-9222	028.0041	Screw		1
63801-9223	028.0046	Adjusting Wheel		1
63801-9224	028.0053	Cone		1
63801-9225	028.0054	Pedestal		2
63801-9226	028.0055	Conus Guide		1
63801-9271	028.0060	Prismatic Blades, Pair	PP	1
63801-9272	028.0063	Flat Stripping Blades, Pair	PP Optional part	0
63801-9227	028.0064	Centering Piece		1
63801-9228	028.0071	Safety Cover, Standard	RSP	1
63801-9229	028.0072	Safety Cover 8mm	Optional part	1
63801-9230	028.0075	Pair Of Rubber Pads For Clamping Jaws	RSP Accessories	REF 1
63801-9231	028-0083	Adjusting Wheel (AWG)	On 63801-9200	1
63801-9232	028.5001	Cover		1
63801-9233	028.6001	Short Stroke Cylinder	Pneumatic parts	1
63801-9234	028.6002	5/2 Sliding Valve	Pneumatic parts	1
63801-9235	028.6034	Throttle Return Stroke Valve	Pneumatic parts	1
63801-9236	028.8004	Grooved Ball Bearing		2
63801-9237	028.8005	Grooved Ball Bearing		2
63801-9238	028.8007	DU-Sleeves		4
63801-9239	028.8008	Sleeve (Sinter Bronze)		1

WS-1000 Pneumatic Bench Top Wire Stripping Machine (63801-9200 or 36801-9250)				
Order No	Detail No	Description	RSP / PP Parts and Notes	Quantity
63801-9240	028.8012	Guide Pins		2
63801-9241	028.8013	Swing Levers		2
63801-9242	028.8023	Sleeve (Sinter Bronze)		2
63801-9243	028.8025	Hexagon Socket Wrench 5mm	Accessories	REF 1
63801-9244	028.8033	Button Head Screw		1
63801-9245	028.8034	High-Grade Steel Strand		1
63801-9246	001.8010	Rubber Foot		4
63801-9247	028.5002	Lower Cover		1
63801-9248	028.8031	Compression Spring		2
63801-9249	028.8017	Extension Spring		2
63801-9253	028.8018	Extension Spring		1
63801-9251	028.8016	Compression Spring		2
63801-9252	028.8049	Compression Spring		1
RSP - Part is a Molex Recommended Spare Part.				
PP - Part is a Perishable Part.				

4.2.1 Troubleshooting

Symptom	Cause	Solution
Blades do not open.	▪ Blade guide is dirty.	Clean blade head.
Insulation is cut improperly.	▪ Dull blades.	Install new blades
Machine has excessive air leaking around the safety cover.	▪ Safety switch is not pressed in far enough by the safety cover.	Push safety cover towards the front plate
The cable is not sufficiently clamped and centered.	▪ Worn or improperly adjusted brakes.	See Section 3.5 Adjustment of the Brakes
The insulation is removed too late or not at all.	▪ Worn or improperly adjusted brakes	See Section 3.5 Adjustment of the Brakes
Clamp jaws do not open.	▪ Cable scrap between clamp jaws and safety cover.	Remove cable scrap.

 CAUTION	<p>CAUTION:</p> <p>Molex tooling crimp specifications are valid only when used with Molex terminals and tooling manufactured by Molex and sold by Molex or authorized distributors ("Molex Tooling"). When using tooling other than Molex Tooling with Molex specific connector systems listed in our ATS documents, the Molex tooling qualification does not apply and the responsibility for full qualification of the connector system is that of the customer.</p> <p>Molex accepts no liability for connector performance or tooling support where tooling other than Molex Tooling is used or where Molex Tooling is modified.</p>
---	---

Application Tooling Support
 2200 Wellington Court
 Lisle, IL 60532 USA
 Phone: +1-402-458-TOOL (8665)
 E-mail: applicationtooling@molex.com

Visit our Website at www.molex.com/applicationtooling

FEINTECHNIK
R.Rittmeyer GmbH
Höltenweg 103
48 155 Münster

FEINTECHNIK
RITTMAYER

EC-CERTIFICATE OF CONFORMITY

In accordance with the EC Machinery Directive 98/37/EG Anhang II A




We hereby declare that on the basis of its conception and design and in the version of the relevant and fundamental safety and health regulations, put into circulation by us, the machine mentioned in the following meets the currently valid EC Machinery Directive. This declaration will immediately cease its legal force if the machine is altered in any way without our permittance.

Machine Designation:	AM.STRIP.015
Machine Type:	Pneumatic Stripping Machine
Fundamental EC-Directives:	EC Machinery Directive 98/37/EG Appendix II A
Applied Harmonized Standards:	---
National Standards:	DIN 45 635

Machine No.:

Date:

Signatory Manufacturer:


Renate Rittmeyer-Müller

Position of the Signatory:

Managing Director

AM.STRIP.015.KONF.ENGLISCH.doc