



## Cutting Flexible Metal Hose in the relaxed and compressed state with the 6000 series abrasive cutting machines



### Introduction

Many different types of flexible metal hose exist. Some are compressible whilst others although flexible do not compress. It is important when choosing a suitable cut to length machine to consider the properties of the hose to be cut.

The choice of hose feeding system combined with length measuring system is important. We offer 2 methods of feeding the hose. The standard drive unit feeds the hose between profiled rollers with tension adjustment on the upper roller. A series of guides eliminates snaking of the hose. The other method also involves the use of rollers which have been machined to a very close tolerance combined with an encoder wheel which corrects for slippage.

There are 3 length measuring systems depending on the requirements:

- (i) End stop system for cutting hose which does not compress or is to be cut in the compressed state
- (ii) Double proximity switch end stop for cutting in the relaxed state
- (iii) Encoder measuring system. for long length and for frequent changes of length and batch size, does not require an end stop

The metal hose or conduit is cut with a thin alumina bonded cutting wheel. A consideration of whether the hose can be cut with coolant or whether only dry cutting is permissible will also affect the build of the cutting machine

### 6000 ser. cutting machine range for cutting the flexible metal hose

- Standard & heavy duty abrasive cutting machines
- Length measurement- (i) end stop, (ii) double switch for cutting hose in the relaxed state (iii) encoder measuring system

Specification / Model	6000	6000C	6100	6200	6200C	6300
Std machine	X	X	X			
Heavy Duty machine				X	X	X
End stop	X			X		
2 step prox. switching		X			X	
Encoder Measuring			X			X
Close tolerance	X			X		
Keypad data entry			X			X

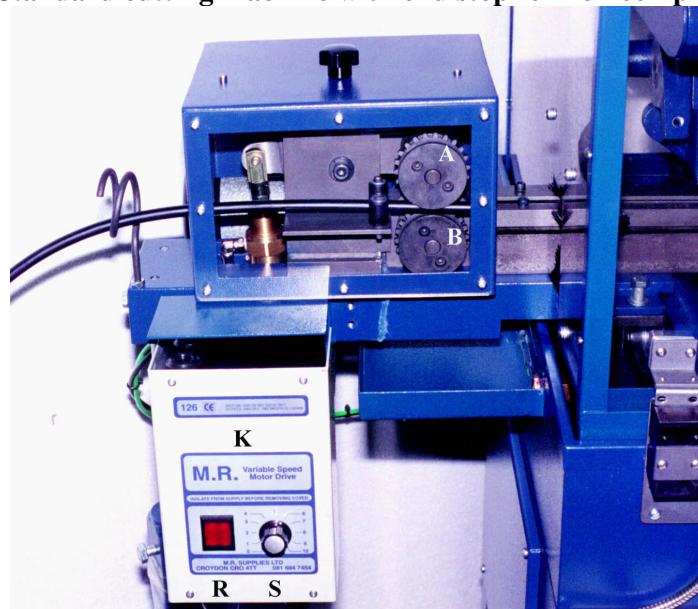
- Advantages of **end stop system**:  
close tolerance cutting, suited for large production runs, more economical pricing, cut length limited to 5m/15ft
- Advantage of **2 step proximity switching**  
Suited for compressible hose, cut length limited to 5m/15ft
- Advantages of **encoder measuring system**:  
long lengths (10m/30ft+), keypad entry for length and quantity, ease of frequent length changes and smaller footprint

---

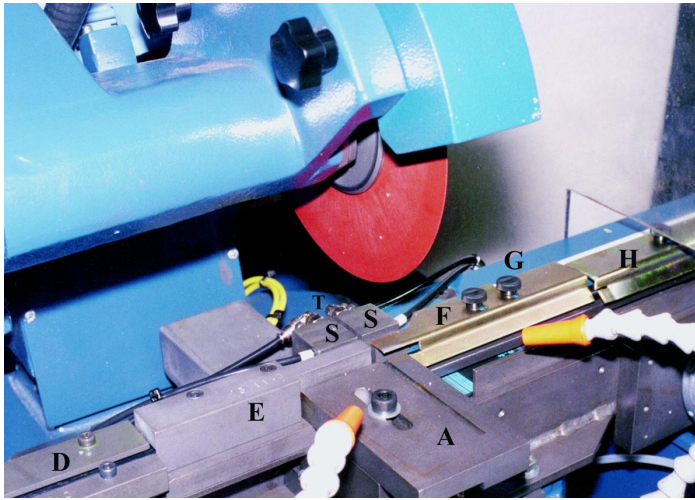
**Models 6000/6000C/6200/6200C end stop machines for cutting the hose which does not compress**



**Model 6000 Standard cutting machine with end stop for non compressible hose**



**Drive unit for hose showing upper & lower rollers & variable speed control**



**Pneumatic vise area, showing cutting wheel & first part of ejection flap. Wheels wear compensation is built into the system  
This type of pneumatic vise is fitted on all models**

## **Specification of Models 6000/6000C/6200/6200C Conduit Cutting Machines**

Floor standing cabinet with clear view canopy.  
Hinged front access panel with time delay safety interlock switch.  
Access side ports for cable drive and ejection flap.  
Front Control panel for operation

### **Cutting Head**

#### **Model 6000/6000C**

Wheel spindle diameter 12.7mm  
Indirectly driven by 2.2KW /3HP, 3 phase motor  
Cutting discs up to 230mm/9in can be used  
Pneumatic raise/lower of cutting head  
Adjustable feed rate.

#### **Model 6200/6200C**

Wheel spindle diameter 32mm/1.25in  
Indirectly driven by 3.6KW/ 5HP, 3 phase motor  
Cutting discs up to 250mm/10in can be used  
Pneumatic raise/lower of cutting head  
Adjustable feed rate.

### **PLC**

Programmable logic controller to control automatic cutting cycle  
Programmed with ladder logic from laptop computer

### **Wheel Wear**

Wheel wear compensation system consisting of optical fibres for wheel edge detection and a detector for sensing movement of the cutting head linkage

### **Vise**

pneumatic vise with front jaw holding of both sides of the cut cable

Front jaw carbide tipped for longer life  
Encoder Measuring & Feeding System

### **Conduit Feed System**

Precision feed rollers with upper roller pneumatically powered. Precision cable guide and intermediate guide to vise

### **Ejection Flap**

Cut pieces of cable eject through flap into collector

Cut lengths up to 3m standard.(5m possible)

Longer flap length available as an option

Inclined collector fitted under flap

**Model 6000/6200** Adjustable End Stop with integrated sensor

**Model 6000C/6200C** 2 stage proximity switch

### **Coolant Circulation**

External 10gal Coolant Tank model 6000

External 20 gal Coolant Tank model 6200

Circulation pump 55 lit/min capacity

### **Safety features**

As per CE requirements

**Services: Power: 3phase 3.5KVA**

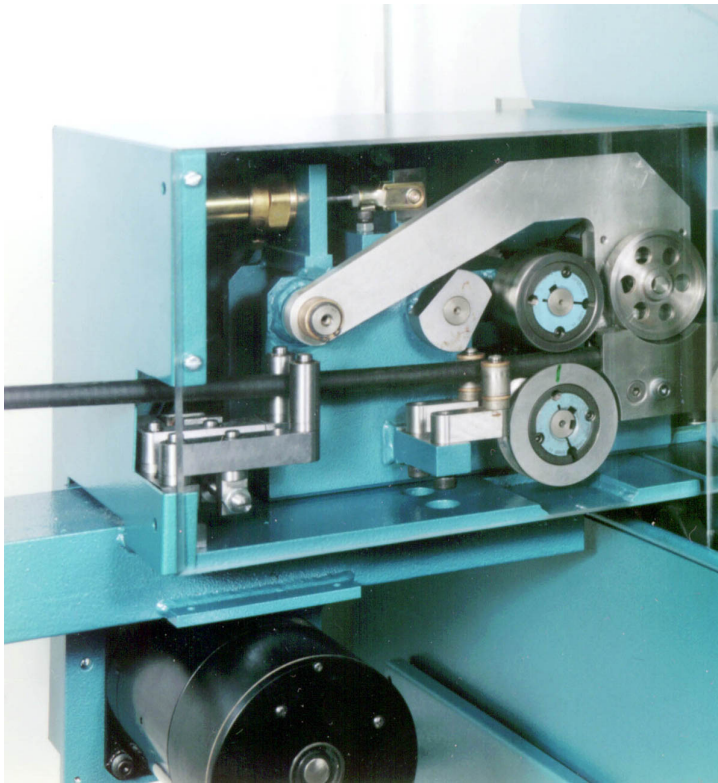
**Airline: dry air at 5bar/80psi**

### **Additional Options**

600-610	2.2KW Inverter for wheel speed variation 2000 to 6000 rpm	600-230	LH + RH Pneumatic vises for improved grip on the offcut side. Adjustable pressure control
620-610	4KW Inverter for wheel speed variation 2000 to 6000 rpm		(deduct standard pneumatic vise)
600-615	Constant Peripheral Speed Control (600/620-610 Inverter must be fitted)	600-700	Extraction spark chute for dry cutting
600-640	Remote Control Pan	620-700	Extraction spark chute for dry cutting
600-260	Set of hardened Profile Rollers with cable guide	600-720	DRO Readout of End Stop Position (3m flap)
600-290	Pneumatic clamp on Cable Drive for use with flexible conduit	600-330	Conveyor for short length ejection
600-293	Adjustable pressure control on drive rollers	600-740	Lifting End Stop for use with Compressible Conduit
		600-328	Additional length of Ejection Flap per 1 m (up to 5m maximum length)

---

### **Models 6100/6300 encoder measuring machines for cutting the outer conduit**



**Cable drive showing upper & lower rollers, stepper motor, encoder wheel**



**Keypad entry for cut length, quantity and kerf.  
Sequential batches are possible**

### **Specification of Models 6100 /6300 Conduit Cutting Machines**

#### **General**

Floor standing cabinet with clear view canopy.  
Hinged front access panel with time delay safety interlock switch.  
Access side ports for cable drive and ejection flap.  
Remote Control unit for operation

#### **Cutting Head**

##### **Model 6100**

Wheel spindle diameter 12.7mm  
Indirectly driven by 2.2KW /3HP, 3 phase motor  
Cutting discs up to 230mm/9in can be used  
Pneumatic raise/lower of cutting head  
Adjustable feed rate.

##### **Model 6300**

Wheel spindle diameter 32mm/1.25in  
Indirectly driven by 3.6KW/ 5HP, 3 phase motor  
Cutting discs up to 250mm/10in can be used  
Pneumatic raise/lower of cutting head  
Adjustable feed rate.

#### **PLC**

Programmable logic controller to control automatic cutting cycle  
Programmed with ladder logic from laptop computer

#### **Wheel Wear**

Wheel wear compensation system consisting of optical fibres for wheel edge detection and a detector for sensing movement of the cutting head linkage

#### **Vise**

pneumatic vise with front jaw holding of both sides of the cut cable  
Front jaw carbide tipped for longer life  
Encoder Measuring & Feeding System

#### **Hose Feed System**

Precision feed rollers with upper roller pneumatically powered. Encoder arm resting on cable. Precision cable guide and intermediate guide

#### **Remote Control Unit & software**

Data input for cut length, quantity, and kerf is via a keypad on the remote panel.  
Software for successive batches

#### **Coolant Circulation**

External 10gal Coolant Tank model 6100  
External 20 gal Coolant Tank model 6300  
Circulation pump 55 lit/min capacity

#### **Safety features**

As per CE requirements

**Services: Power: 3phase 3.5KVA**

**Airline: dry air at 5bar/80psi**

### Additional Options

**600-610** 2.2KW Inverter for wheel speed variation 2000 to 6000 rpm

**620-610** 4KW Inverter for wheel speed variation 2000 to 6000 rpm

**600-615** Constant Peripheral Speed Control

(600/620-610 Inverter must be fitted

**600-640** Remote Control Panel - additional

**610-260** Set of hardened Profile Rollers with cable guide with precision cable guide

**600-290** Pneumatic clamp on Cable Drive for use with flexible conduit

**610-293** Adjustable pressure control on drive rollers

**600-230** LH + RH Pneumatic vises for improved grip on the offcut side.

Adjustable pressure control

(deduct standard Pneumatic Vise)

**610-700** Extraction spark chute for dry cutting

### Ordering Information- all cutting machines

**8-600-001-00 Model 6000** Hose cutting machine, w/end stop 380-415V 3 Ph

**8-600-002-00 Model 6000** Hose cutting machine w/end stop 208-220V- 3 Ph

**8-600-005-00 Model 6000C** Hose cutting machine, w/2 stage prox. stop 380-415V 3 Ph

**8-600-006-00 Model 6000C** Hose cutting machine, 2 stage prox. stop 380-415V 3 Ph

**8-620-001-00 Model 6200** Heavy Duty Conduit cutting machine w/end stop 380-415V 3Ph

**8-620-002-00 Model 6200** Heavy Duty Hose cutting machine, w/end stop 208-220V 3Ph

**8-610-001-00 Model 6100** Conduit cutting machine, encoder system 380-415V 3 Ph

**8-610-002-00 Model 6100** Conduit cutting machine, encoder system 208-220V 3 Ph

**8-630-001-00 Model 6300** Heavy Duty Conduit cutting machine, encoder system 380-415V 3 Ph

**8-630-002-00 Model 6300** Heavy Duty Conduit cutting machine, encoder system 208-220V 3 Ph

### Accessories

**600-610** 2.2KW Inverter for wheel speed variation 2000 to 6000 rpm [6000 (C)/ 6100]

**620-620** 4KW Inverter for wheel speed variation 2000 to 6000 rpm [6200/6300]

**600-615** Constant Peripheral Speed Control (600/620-610 Inverter must be fitted

**600-640** Remote Control Panel - additional

**600-260** Set of hardened Profile Rollers with cable guide with precision cable guide

**610-260** Set of hardened Profile Rollers with cable guide with precision cable guide

**600-290** Pneumatic clamp on Hose Drive for use with flexible conduit

**600-293** Adjustable pressure control on drive rollers

**600-230** LH + RH Pneumatic vises for improved grip on the offcut side. Adjustable pressure control

(deduct standard Pneumatic Vise)

**600-700** Extraction spark chute for dry cutting

**620-700** Extraction spark chute for dry cutting



**Benetec, Inc**  
99 Phoenix Ave, Enfield CT 06082  
PO Box 822, Enfield CT 06083-0822  
Tel: 860 745 4455 Fax: 860 745 1210  
e-mail: [sales@benetecmetlab.com](mailto:sales@benetecmetlab.com)