

# **DREX<sup>®</sup>-TOOLS**

## **AND GROUP ITALIA SRL**

**CARBIDE ROLLER BURNISHING TOOLS  
SERIE D90**

**INSTRUCTIONS MANUAL  
MID121004-ING**

## **CARBIDE ROLLER BURNISHING TOOLS SERIE D90 MID121004-ING**

### **PLACING ON THE MACHINE**

The tool must be installed on a Tool holder suitable to insert a shank with a dimension of 20 or 25 mm.. It must be positioned so the middle of the Roll is in line with part's axle.

### **PREPARATION OF THE WORKPIECE**

Surfaces to be roll burnished are first prepared by turning reaching a roughness of 2-2.5 micron.

### **TOOL SETTING FOR BURNISHING EXTERNAL DIAMETERS**

Before starting to work, the spring compression must be adjusted and the appropriate feed rate set. These adjustments are determined as follows: First determine the correct adjustment of the spring compression; bring the carbide roll in touch with the surface to be burnished and compress the spring of 0.6 mm. Carry out this operation while the workpiece is rotating. Immediately advance with the tool on the surface to burnish with a feed of 0.07 mm. per revolution. Check the workpiece to see if the finish is acceptable. If the finish is not acceptable increase the spring compression of 0.3 mm., and check the finish again. Continue to increase the spring compression of 0.3 mm. until the required finish is obtained.

**ATTENTION:** Do not exceed the maximum spring compression allowed which is of about 5 mm.. Light ripples or spiral marks are an indication of too much pressure. In this case reduce the spring compression.

**For burnishing light alloys like aluminium, cooper etc. start with a spring compression of 0.2 mm.**

### **ADVANCEMENT**

After having established the right spring compression, increase the feed rate of the Tool of 0.05 mm. per revolution. Check if the surface finish is acceptable. The speed rate can be increased but always check the surface finish, in this way you can establish the maximum speed rate of the Tool.

### **SPEED**

The Carbide Roller Burnishing Tool is usually not affected by the turning speed. However we recommend not to exceed the speed of 300 m/min.

### **TOOL SETTING FOR BURNISHING FLAT FACE SURFACES**

To establish the spring flexion when burnishing a flat face surface, or a shoulder, advance the tool until the carbide roll touches the workpiece's surface. After contact continue to advance at a spring flexion of about 0.38 mm.. This will cause a light increase of the spring flexion.

As soon as the spring flexion of 0.38 mm. has been reached, advance the Tool on the surface with a feed of  $0.10 \div 0.20$  mm. per revolution. Check if the finish of the workpiece is acceptable. If not increase the spring flexion of an additional 0.38 mm. then check the surface again. Continue to increase the spring flexion of 0.38 mm. until reaching the requested finish.

**ATTENTION! Don't exceed the maximum spring flexion allowed which is about 1.12 mm..**

## **CARBIDE ROLLER BURNISHING TOOLS SERIE D90 MID121004-ING**

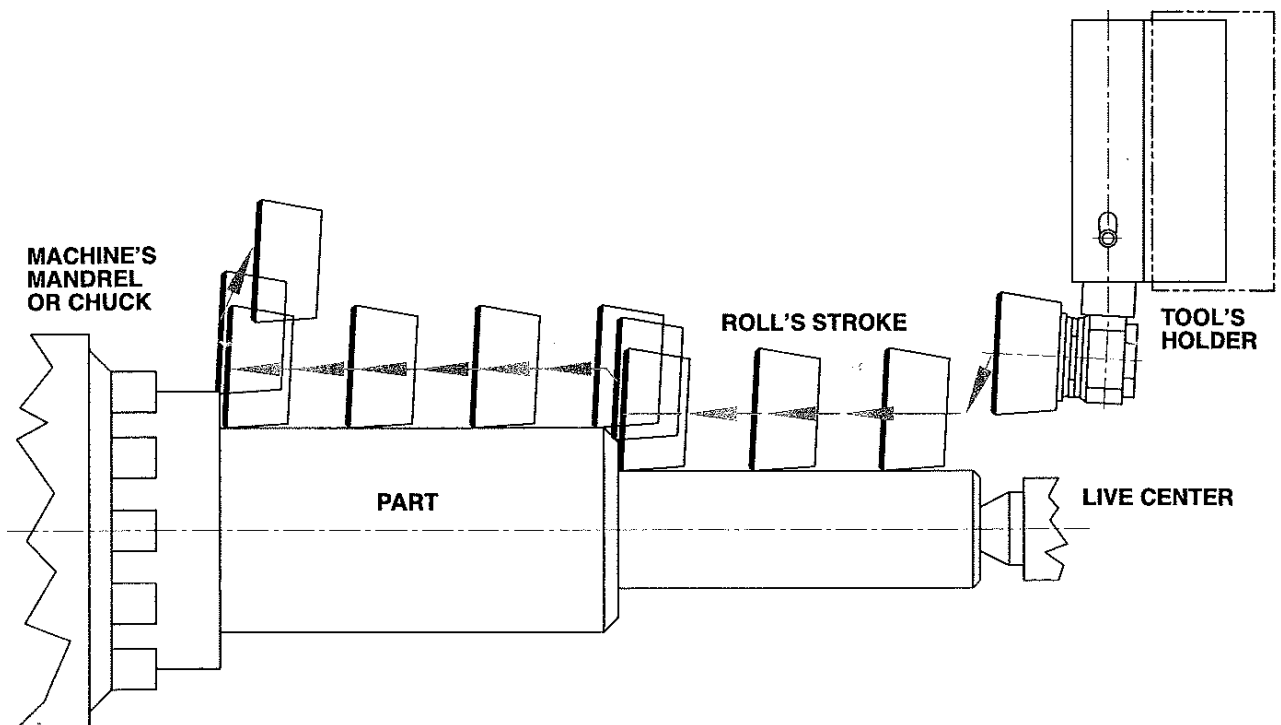
### **TOOL SETTING**

Once the right spring flexion and the correct feed have been established, the operator can start to work with the Tool. Bring the tool in contact with the surface to be burnished while the workpiece is rotating.

- A) Move the tool along the workpiece after having correctly adjusted the spring flexion
- B) Continue to advance along the surface
- C) Lift off the tool and return to the starting position

### **NOTE**

- 1) Never start the advancement if the Roll is not in contact with the surface to roll burnish
- 2) Never rest on the workpiece with the Tool but continue to roll burnish until completion. Advance immediately when the right spring flexion has been reached.
- 3) The Tool is not suitable for roll burnishing interrupted (broken) surfaces.
- 4) Lubricate with a water soluble lubricant or coolant to improve the tool's life and to obtain the best results.
- 5) Periodically lubricate the roll bearing placed inside the carbide roll by introducing grease through the lubricators supplied with the Tool.

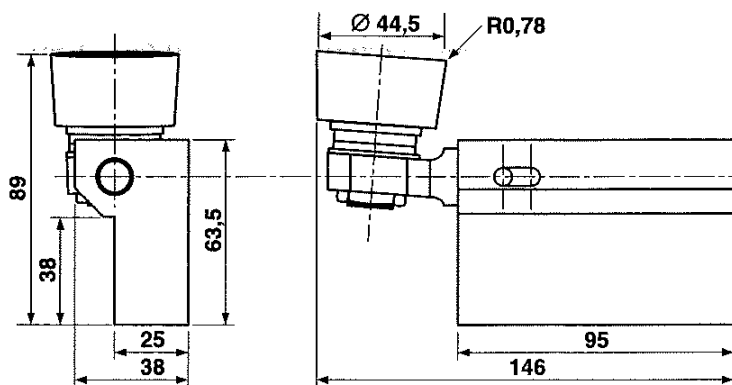


## CARBIDE ROLLER BURNISHING TOOLS SERIE D90 MID121004-ING

**D90-L-25-0**

Left hand tool  
Shank 25 mm  
Roll's radius 0,78 mm

GREASE THE TOOL  
WITH THE SUPPLIED  
LUBRICATION  
FITTING.  
CHANGE ITS WHILE  
WORKING.

**Roll's bellev. spring**

Deflection	Force
mm 0,28	kp 43
mm 0,56	kp 66
mm 0,84	kp 75
mm 1,12	kp 77

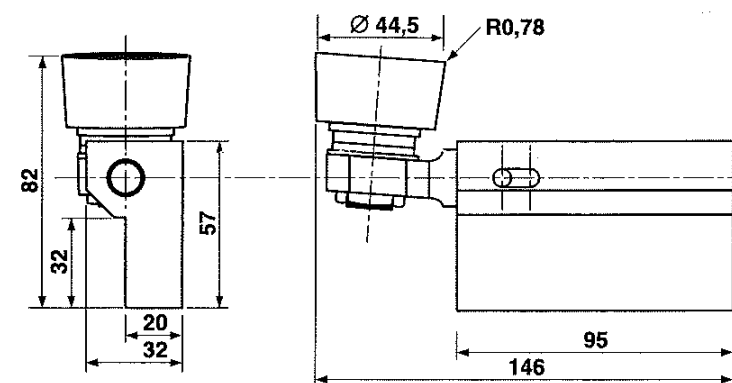
**Belleville spring sr.**

Deflection	Force
mm 1,63	kp 30
mm 3,26	kp 54
mm 4,85	kp 75
mm 6,35	kp 94

**D90-L-20-0**

Left hand tool  
Shank 20 mm  
Roll's radius 0,78 mm

GREASE THE TOOL  
WITH THE SUPPLIED  
LUBRICATION  
FITTING.  
CHANGE ITS WHILE  
WORKING.

**Roll's bellev. spring**

Deflection	Force
mm 0,28	kp 43
mm 0,56	kp 66
mm 0,84	kp 75
mm 1,12	kp 77

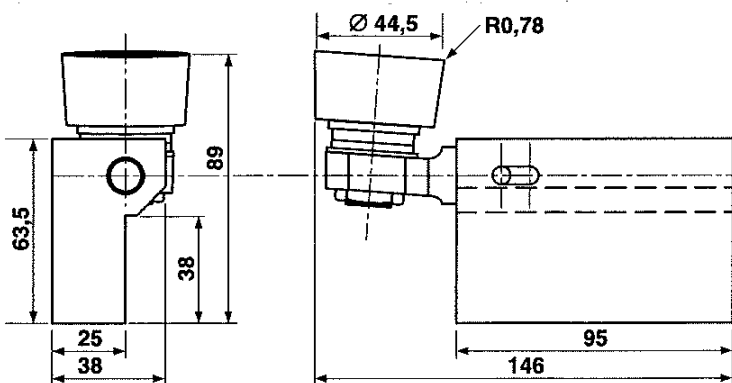
**Belleville spring sr.**

Deflection	Force
mm 1,63	kp 30
mm 3,26	kp 54
mm 4,85	kp 75
mm 6,35	kp 94

**D90-R-25-0**

Right hand tool  
Shank 25 mm  
Roll's radius 0,78 mm

GREASE THE TOOL  
WITH THE SUPPLIED  
LUBRICATION  
FITTING.  
CHANGE ITS WHILE  
WORKING.

**Roll's bellev. spring**

Deflection	Force
mm 0,28	kp 43
mm 0,56	kp 66
mm 0,84	kp 75
mm 1,12	kp 77

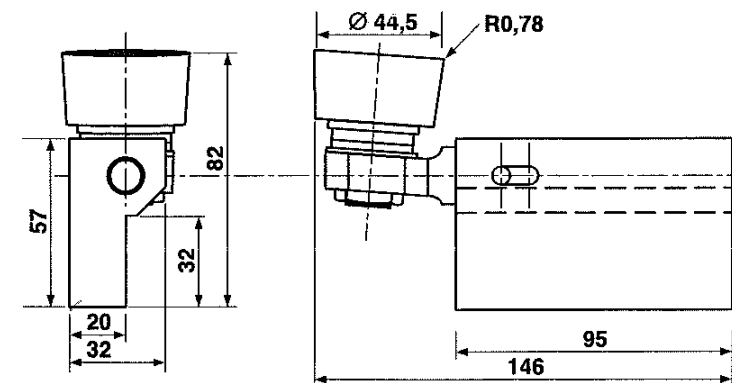
**Belleville spring sr.**

Deflection	Force
mm 1,63	kp 30
mm 3,26	kp 54
mm 4,85	kp 75
mm 6,35	kp 94

**D90-R-20-0**

Right hand tool  
Shank 20 mm  
Roll's radius 0,78 mm

GREASE THE TOOL  
WITH THE SUPPLIED  
LUBRICATION  
FITTING.  
CHANGE ITS WHILE  
WORKING.

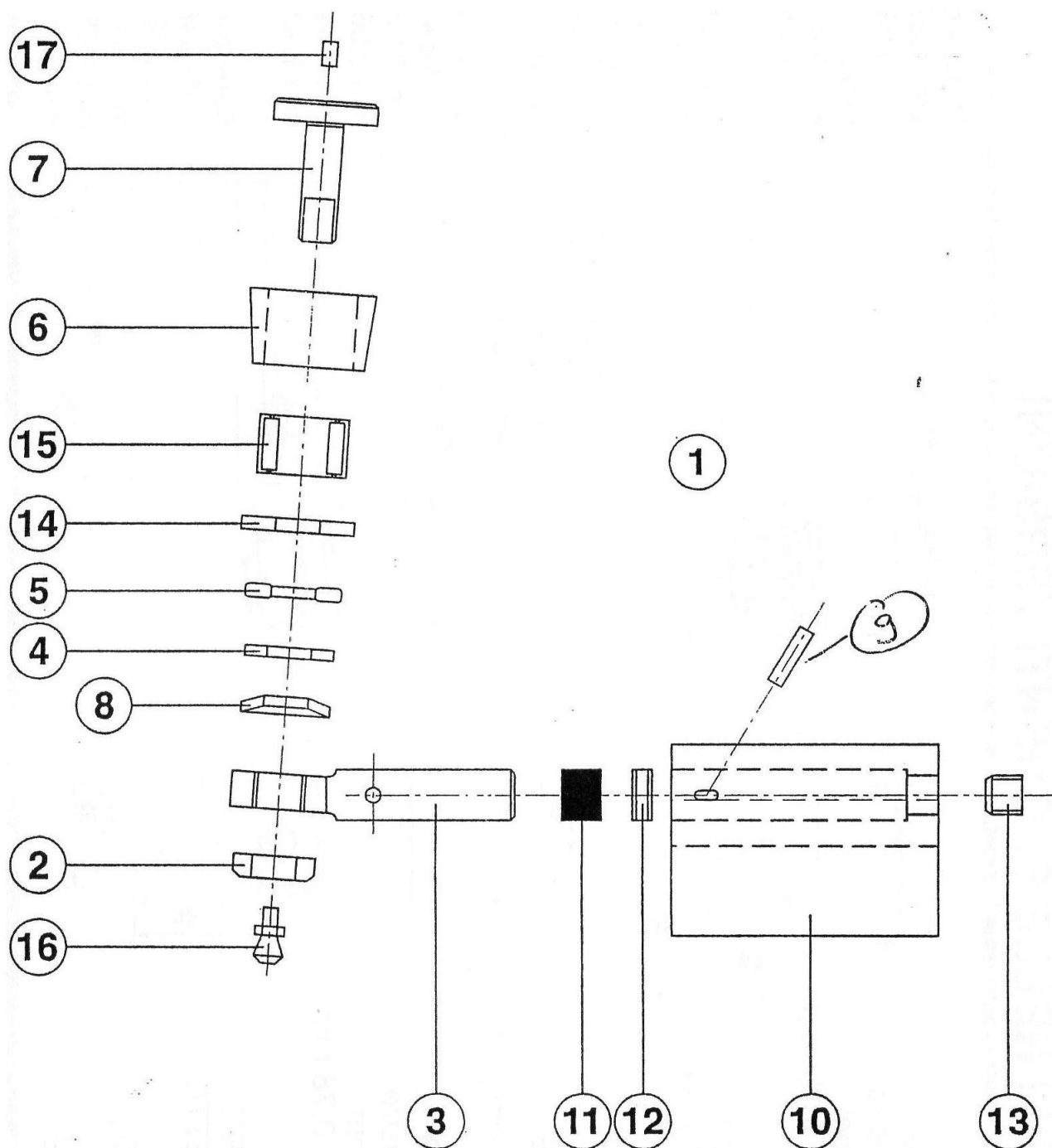
**Roll's bellev. spring**

Deflection	Force
mm 0,28	kp 43
mm 0,56	kp 66
mm 0,84	kp 75
mm 1,12	kp 77

**Belleville spring sr.**

Deflection	Force
mm 1,63	kp 30
mm 3,26	kp 54
mm 4,85	kp 75
mm 6,35	kp 94

SPECIFICATIONS IN THIS SHEET ARE SUBJECT TO CHANGE WITHOUT NOTICE

**CARBIDE ROLLER BURNISHING TOOLS SERIE  
D90 MID121004-ING****Spare Parts List**

**CARBIDE ROLLER BURNISHING TOOLS SERIE  
D90 MID121004-ING**

<b>Part. N°</b>	<b>Part Name</b>	<b>Code</b>	<b>N° pcs</b>
1	Assembly		
2	Lock Nut	5/8 UNF DIN994	1
3	Shank	D90-X3	1
4	Ring	TRB-1018	1
5	Thrust Bearing	NTA-1018	1
6	Roll 0,78	D044-0	1
6	Roll 1,57	D044-1	1
6	Roll 2,36	D044-2	1
7	Axle	D3090-X2	1
8	Belleville Spring	CB-31.5/16.3X0.8	1
9	Pin elastic	DIN1481-6X36	1
10	Holder D90-L-25-	D90-L-25-10	1
10	Holder D90-L-20-	D90-L-20-10	1
10	Holder D90-R-25-	D90-R-25-10	1
10	Holder D90-R-20-	D90-R-20-10	1
11	Belleville Spring	CB-18/6.2X0.8	13
12	Slug	D90-X12	1
13	Screw	ISO4026-M12X12	1
14	Anello	D90-X1	1
15	Ring	HJ101812	1
16	Lubric. Fitting	R17/A-M6x1	1
17	Screw	ISO4026-M6X8	1