



SUPER DIAMOND EXTRUSION BURNISHING TOOL

DREX®-TOOLS diamond burnishing tool can be used to roll the outer circle, inner hole (greater than a certain diameter), end face, etc. on the lathe. It is not limited by the diameter except the inner hole, and has wide applicability.

TOOL CHARACTERISTICS:

- 1) The turning diamond burnishing tool is designed exquisitely and can be used by left and right hands.
- 2) The head of the steerable diamond burnishing tool can rotate, and the positive and negative 90° can be adjusted to meet most of the rolling angle processing.
- 3) The surface roughness of workpiece after rolling can be less than Ra0.08 (related to the previous process)
- 4) Long service life, it can be extruded at multiple points through rotating diamond.
- 5) Diamond burnishing tools can extrude materials with hardness up to HRC60.

ROLLING PRINCIPLE:

Under the microscope, during the cutting process of the workpiece, the tool tip will leave a step like cutting trace on the surface. The diamond will overcome the yield point of the material during the sliding process on the workpiece surface under the effect of the spring force, causing plastic deformation on the material surface, forcing the highest point of the cutting trace to flow into the lowest point, so as to obtain a smooth and flat mirror. In the process of rolling, the material will be hardened due to plastic deformation, thus improving the fatigue strength of the workpiece surface.

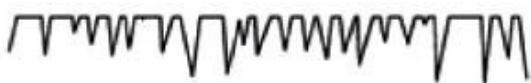
To achieve the best squeezing effect, the surface finish of the last cutting process of the workpiece should be within RZ 15um.

Refer to the right figure

Figure 1

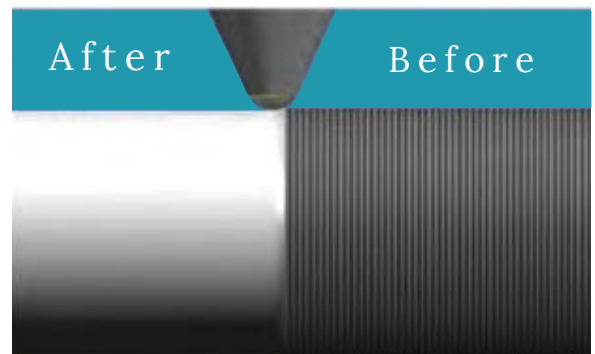


Workpiece surface profile after turning



Surface profile of workpiece after reaming and grinding

Figure 2





DIAMOND ROLLER BURNISHING TOOLS MS2300-00 E MS2300-CS



- Eliminate lapping and grinding
- It is possible to obtain surfaces with high quality finishing rate
- Reduced dimensions for the use in very small working spaces
- Replaceable diamond stem holder
- Of a simple using
- Suitable for all workshops

It is possible to obtain very smoothed surfaces: the diamond DREX®-TOOLS roller burnishing tools completed with a selected diamond stem are suitable for carrying out the burnishing of turning or grinding surfaces on a lot of metals for obtaining a high level in finishing, from 0,05 to 0,20 μm . It is possible to burnish cast iron obtaining a surface finishing rate of 0,22-0,42 μm .

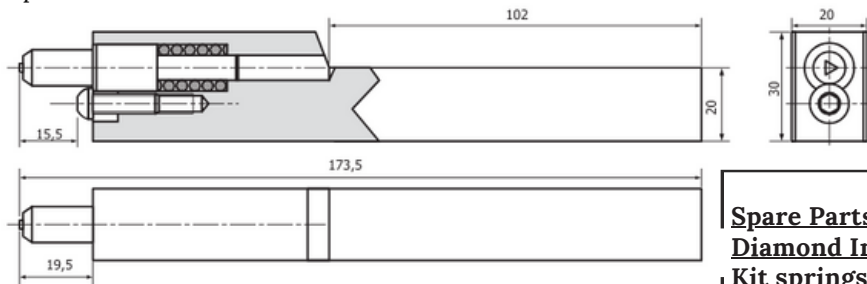
Reduced dimensions for very small working spaces: the diamond DREX®-TOOLS roller burnishing tools have been studied with reduced dimensions with a shank having a section of 20 mm; thanks to this matter they are the ideal tools for being used on small lathes too.

Simple to be used: the diamond roller burnishing tools have been used on traditional lathes and CNC lathes. After having installed the roller burnishing tool on the tool-holder, the tool places so that the diamond gets in touch on the middle of the part, obtaining an angle of 90° respect to the surface to burnish. The tools must be used for the burnishing of linear surfaces. The tool gets in touch with the surface to be burnish, the spring has put under pressure; the feed begins with a speed of 0,07-0,1 mm per turn, with a number of revolutions of the part similar to that used for the turning.

Cheap! Suitable for all the workshops: the tools have a precision diamond stem mounted on the top. It is possible to burnish materials with an hardness up to 40 HRC, obtaining a finishing of 0,07-0,1 μm .

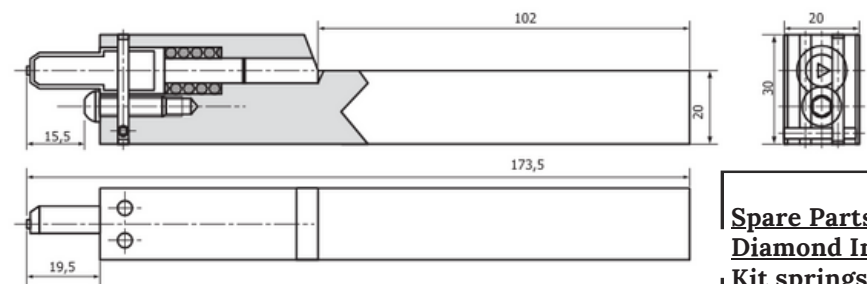
Two versions: the DREX®-TOOLS diamond roller burnishing tools have been realized in two versions:

MS-2300-00 suitable for the burnishing of linear surfaces, with this tool is possible to carry out a burnishing up to a distance of 5 mm from the shoulder.

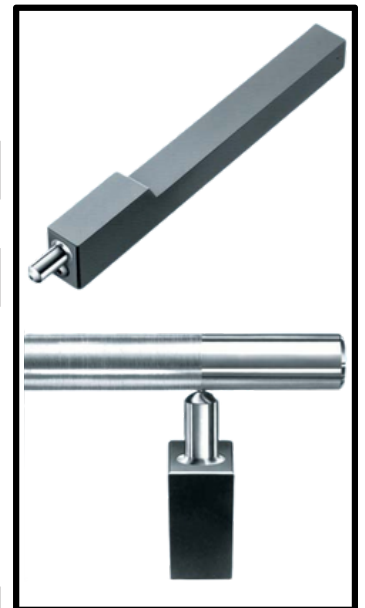


Spare Parts:
Diamond Insert: D375-01
Kit springs: D2300-SP

MS-2300-CS similar to the type MS-2300-00 from which the difference is the discharged diamond stem that is suitable for carrying out roller burnishing up to a distance of 2,2 mm from the shoulder.



Spare Parts:
Diamond Insert: D375-CS
Kit springs: D2300-SP



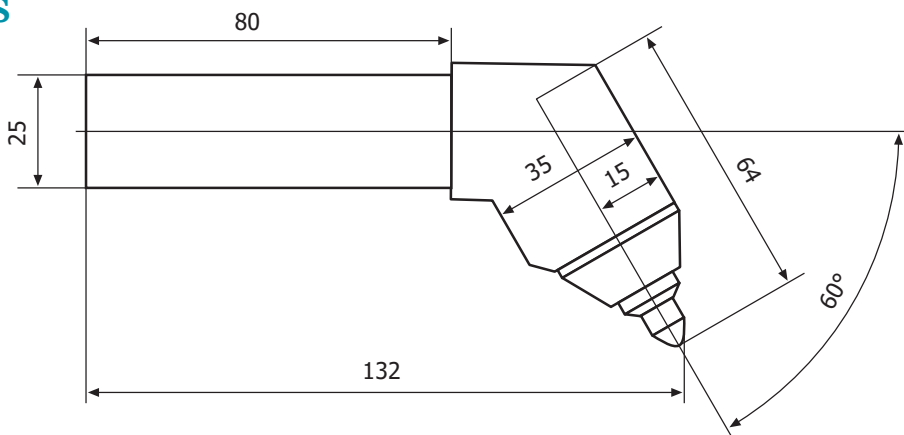


DIAMOND ROLLER BURNISHING TOOL MS2300-60



- Thanks to its configuration it can be used for the burnishing of inside and outside diameters, stepped, flat and spherical surfaces. It is possible to burnish materials with an hardness up to 40 HRC.
- Holder diamond head with an inclination of 60°.
- Equipped with a diamond with radius 1,5 mm: it cans carry out burnishing on turned pieces with a maximum roughness of 2,5 μm, obtaining a finishing surfaces with a roughness between 0,6 - 0,04 Ra.
- Available with shank of 25 mm for the application on most type of lathes.

SIZES



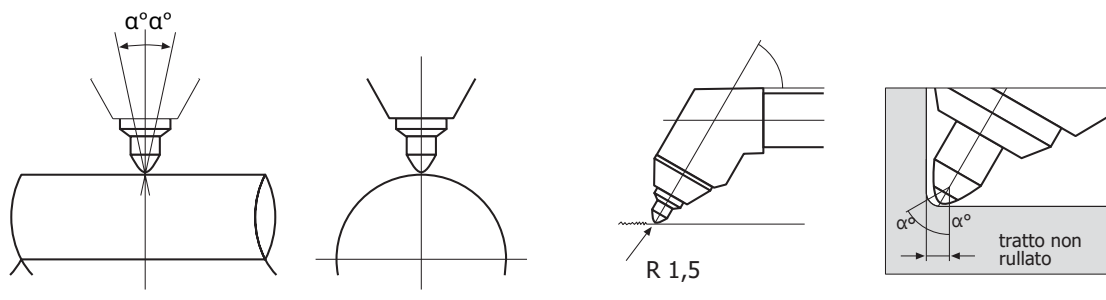
Spare Parts:
Diamond Insert: MS2302-15
Kit springs: MS2305-00

INSTALLATION AND USE OF THE TOOL

Mount the tool on the turret so that the diamond will be positioned on the middle part of the piece to burnish. The tool is supplied with a diamond with radius 1,5 mm; you have to consider the angle α° and the length of 2 mm of the surface not burnished.

Bring the diamond in touch with the work piece, point "0", advance with the turret of 0,1-0,2 mm in order to grant pressure to the tool, insert the feed and burnish the surface's length required, stop the feed and move away the tool from the piece.

These operations must be carried out with the rotation of the piece in order to prevent the damage of the diamond.





STERING DIAMOND BURNISHING TOOLS

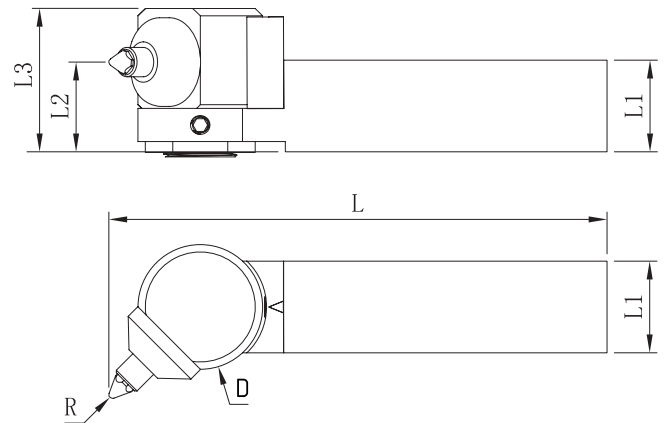


This tool uses natural industrial super grade diamond as the cutter head to roll the mirror surface of high hardness metal surface.

1. Adjustable load spring is installed inside
2. The lubricating oil is sufficient, and the workpiece must rotate before the diamond can be contacted for processing
3. Minimize runout when clamping workpieces



STRUCTURE DRAWING



SPECIFICATION TABLE

[mm]

Model	L	L1	L2	L3	D
DIA-TU180-R -12*12	148.1	12	12	26.1	34
DIA-TU180-R -16*16	148.1	16	16	30.1	34
DIA-TU180-R -20*20	137.8	20	20	34.1	34
DIA-TU180-R -25*25	137.8	25	25	39.1	34

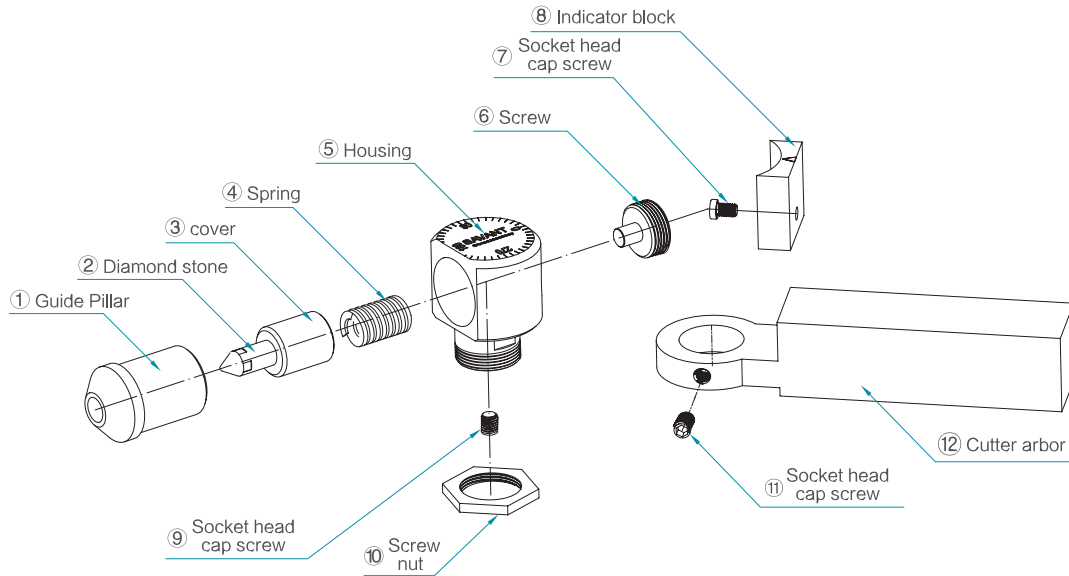
For complete models, please fill in the radius value of diamond after "R". The Diamond roller head standards include R0.75, R1, R1.5 and R2. If R1 Diamond roller head is selected, and the cutting edge is 20x20, the product is complete.



PROCESSING PARAMETERS

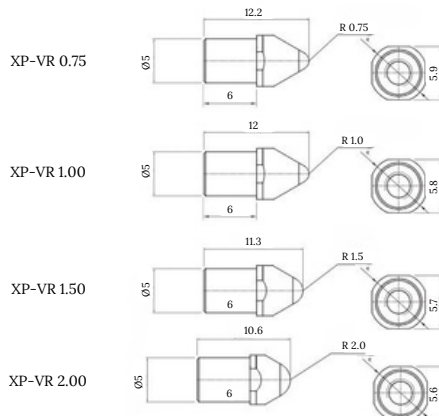
▶ Cutting Speed	100~200m/mi
▶ Feed	n 0.05~0.1mm
▶ Shrink Range	0.01~0.5mm

STRUCTURE



- ▶ The burnishing tool is designed to be equipped with three kinds of springs with different pressures. The compression amount depends on the spring specification, and the pressure can be adjusted by screws (it will be adjusted before leaving the factory).
- ▶ The tool can be directly clamped on the tool holder of the lathe or other fixture, the workpiece rotates, and the tool is fed for processing.
- ▶ When machining the single rolling indenter, the coolant must be used.
- ▶ When any one of the accessories needs to be replaced, please disassemble it according to the sequence of the above figure.

SPARE PARTS: DIAMOND ROLLER HEAD AND SPRINGS:



Extra light Load
Rif. BF12020
Deflection
50% N(kg) 137(14)
45% N(Kg) 123(12.5)
40% N(kg) 108(11)

Light Load
Rif. BL12020
Deflection
50% N(kg) 206(21)
45% N(Kg) 186(19)
40% N(kg) 167(17)



Medium Load
Rif. BM12020
Deflection
50% N(kg) 284(29)
45% N(Kg) 255(26)
40% N(kg) 226(23)

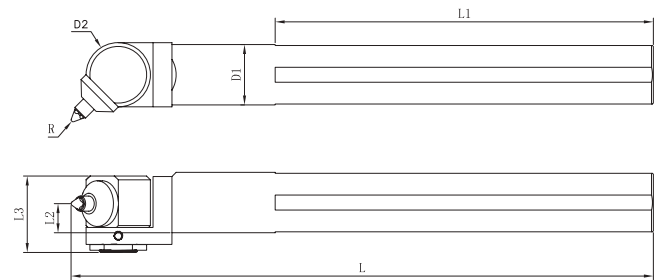
Heavy Load
Rif. BH12020
Deflection
50% N(kg) 422(43)
45% N(Kg) 373(38)
40% N(kg) 333(34)



DIAMOND BURNISHING TOOLS WITH STEERING INNER HOLE



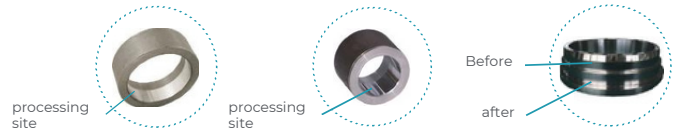
STRUCTURE DRAWING



This tool uses natural industrial super grade diamond as the cutter head to roll the mirror surface of high hardness metal surface.

1. Adjustable load spring is installed inside
2. The lubricating oil is sufficient, and the workpiece must rotate before the diamond can be contacted for processing
3. Minimize runout when clamping workpieces
4. By adjusting the angle of the cutter head, it is possible to extrude the inclined plane, R face, end face, outer circle face, inner circle face, etc.

PROCESSING CASE



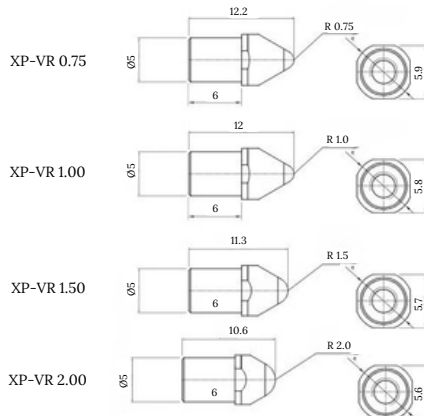
SPECIFICATION TABLE

Model	L	L1	L2	L3	D1	D2
DIA-IN-TU180-R -ZB32	308	200	16	40.5	32	34

[mm]

For complete models, please fill in the radius value of diamond after "R". The Diamond roller head standards include R0.75, R1, R1.5, R2. If R1.5 Diamond roller head is selected, the complete product model is DIA-IN-TU180-R1.5-ZB32.

SPARE PARTS: DIAMOND ROLLER HEAD AND SPRINGS:



Extra light Load
Rif. BF12020
Deflection
50% N(kg) 137(14)
45% N(kg) 123(12.5)
40% N(kg) 108(11)



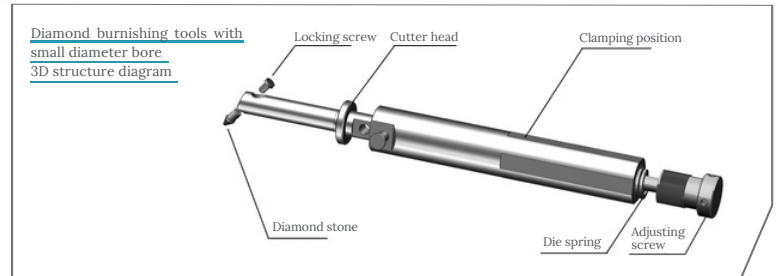
Medium Load
Rif. BM12020
Deflection
50% N(kg) 284(29)
45% N(kg) 255(26)
40% N(kg) 226(23)

Light Load
Rif. BL12020
Deflection
50% N(kg) 206(21)
45% N(kg) 186(19)
40% N(kg) 167(17)

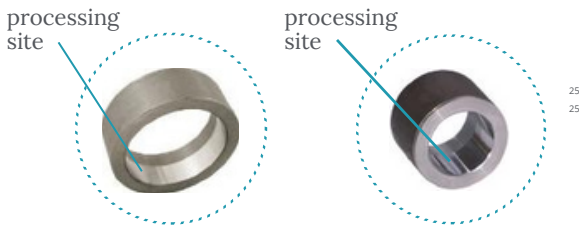
Heavy Load
Rif. BH12020
Deflection
50% N(kg) 422(43)
45% N(kg) 373(38)
40% N(kg) 333(34)



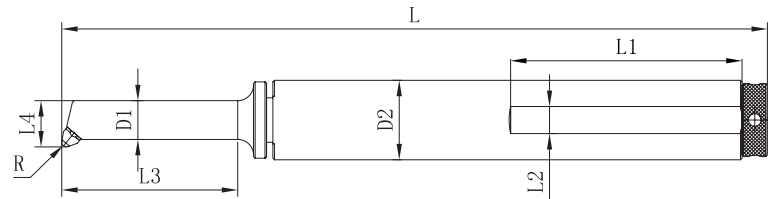
DIAMOND BURNISHING TOOLS WITH SMALL DIAMETER INNER HOLE



PROCESSING CASE



STRUCTURE DRAWING



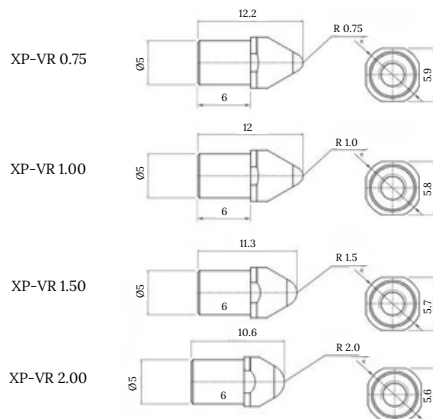
SPECIFICATION TABLE

Model	L	L1	L2	L3	L4	D1
DIA50°-IN-R -ZB25(MIN16.0)	225	73	8.5	55.5	14.5	12.2
DIA50°-IN-R -ZB25(MIN16.0)-S	200	73	8.5	27	14.5	12.2

[mm]

For complete models, please fill in the radius value of diamond after "R". The Diamond roller head standards include R0.75, R1, R1.5, R2.

SPARE PARTS: DIAMOND ROLLER HEAD

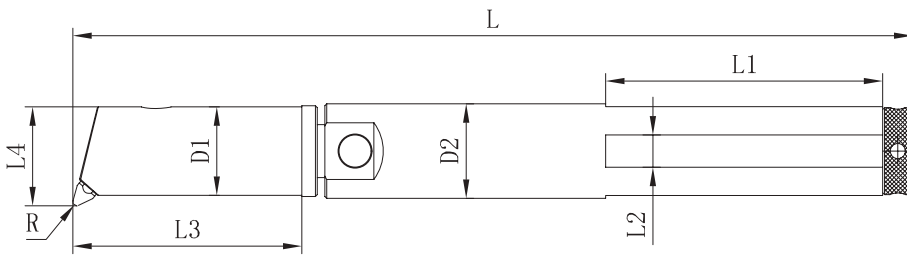




INNER HOLE DIAMOND BURNISHING TOOLS



STRUCTURE DRAWING



SPECIFICATION TABLE

[mm]

Model	Inventory	L	L1	L2	L3	L4	D1	D2
DIA50°-IN-R <input type="checkbox"/> -ZB25(MIN28.0)	<input checked="" type="radio"/>	225	73	8.5	60.5	26.5	23.4	25
DIA50°-IN-R <input type="checkbox"/> -ZB25(MIN28.0)-S	<input checked="" type="radio"/>	195	73	8.5	30.5	26.5	23.4	25

Standing stock Make to order

For complete models, please fill in the radius value of diamond after "R". The Diamond roller head standards include R0.75, R1, R1.5, R2.

SPARE PARTS: DIAMOND ROLLER HEAD AND SPRINGS

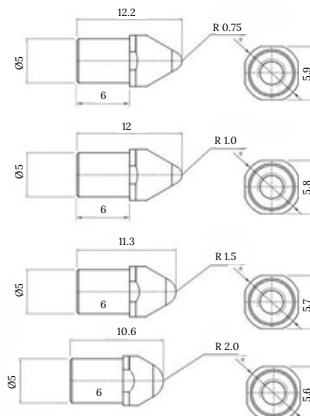


XP-VR 0.75

XP-VR 1.00

XP-VR 1.50

XP-VR 2.00



Extra light Load
Rif. BF12020
Deflection
50% N(kg) 137(14)
45% N(kg) 123(12.5)
40% N(kg) 108(11)

Light Load
Rif. BL12020
Deflection
50% N(kg) 206(21)
45% N(kg) 186(19)
40% N(kg) 167(17)



Medium Load
Rif. BM12020
Deflection
50% N(kg) 284(29)
45% N(kg) 255(26)
40% N(kg) 226(23)

Heavy Load
Rif. BH12020
Deflection
50% N(kg) 422(43)
45% N(kg) 373(38)
40% N(kg) 333(34)