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TRANSVERSAL SHEAR KNIFE



An ALFE's knife, good adapted to the needs, is the best guarantee of an optimum efficiency.

It is necessary to emphasize the importance of the election of the most suitable material according to the use of the knife to get that optimum efficiency.

Our range of steels highly alloyed, along with the précis and appropriate process of heat treatments, gives us the key of a high resistance to wear, combined with an optimum toughness for hot and cool works. Apart from this, what is really important is the sharpening of the knife. If it is not well made, warmings will appear in the edge, with the consequent softening and local tensions will be formed, which will create superficial fissures or cracks, that can turn into breakages in the future.



ALFE recommends the following general rules:

CHARACTERISTICS OF THE SHARPENING

- The usual conditions (parallelism, scantling, ...) that has to be obtained after the sharpening are showed in the drawing (Fig 1).
- The knives will be demagnetized after each sharpening.
- With a stone of olive the rough edges will disappear.
- The displacements will be made in suitable boxes.

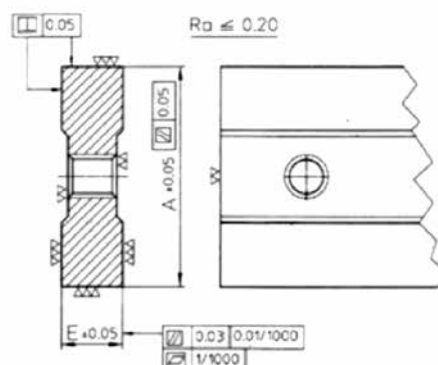


Fig: 1 Shear blade (Usual conditions in shear blades)

TRANSVERSAL SHEAR KNIFE

THE SHARPENING OF HEADS AND BACKS

- It will be made by a rigorous and suitable grinding-machine that can be with:
 1. An horizontal quill with a grindstone (fig-2)
 2. A vertical quill with segments (fig-3).
- The speed of cutting the grindstone/segments: $V_{cm} = 20-30$ m/s
- The speed of cutting the piece: $V_{cp} = 20-30$ m/s
- The transversal speed: $V_t = 0.5-1$ m/min
- The depth of passing in each extreme:
 - Roughdressing $A_{p1} = 0.01-0.02$ mm
 - Finishing $A_{p2} = 0.005-0.008$ mm
 - Final $A_{p3} = 0$ mm (4 to 6 turnings of refining)
 - Refrigerating: emulsion from 3 to 5%
 - Caudal: 50-150 l/min.

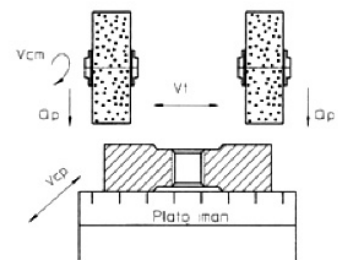


Fig: 2 Sharpening with a tangential grindstone (horizontal quill)

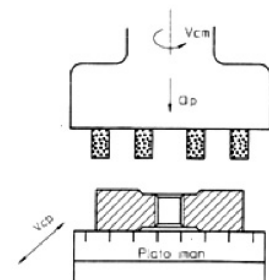


Fig: 3 Sharpening with segments (vertical quill)

GINDSTONES

It is recommended:

- Abrasive: Oxide of Aluminium (upper corundum)
- Grindstones: Grain 46-60, hardness G-H, structure 8-10.
- Segments: Grain 36-46, hardness G-I, structure 8-10.

So, to obtain a good efficiency of the knife, it is necessary to maintain the suitable clearances and penetrations to each kind of work. ALFE recommends the following:

Besides, it is convenient to take into account the following rules:

- Don't cut plates that are not subjected by a press of plates. If there is a part of plate between two treadings, it will wedge between the two knives damaging the edges.
- It is convenient that the plate which is going to be cut, is treated at least in three of the four parts of the area of the treading, at least. In case of not being able to do it, a ground of the same thickness will be put in the empty space.
- To avoid cutting plates that comes from oxycort or soldering because the areas with high temperatures temple themselves and acquire hardness that damage the edges.
- To thicken the knives frequently.
- To change the position of the knives when the edges are warmed. The effort grows when the knives are not sharpened.

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