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NEWS VIEWS

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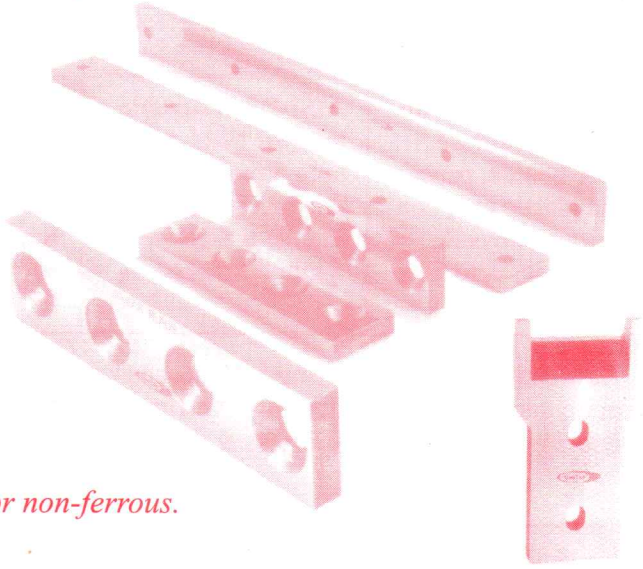
Determination to Establish Excellence
Through Efficiency and Expertise

Shear Blades & Machine Knives

Shear Blades and Machine Knives find application in all types of industries dealing with steel/non-ferrous alloys, cellulose, fibre boards, paper & plastic etc.

Following parameters are of prime importance for Blades and Knives :



- Hardness • Compression Strength
- Wear Resistance • Edge Retention
- Toughness • Shock Resistance
- Close Tolerances

While selecting the most appropriate combination of the above parameters, the manufacturer of Shear Blades needs to know the following details regarding the material to be sheared :

1) *The type of material i.e. Whether it is ferrous or non-ferrous.*
2) *The thickness of material*
3) *The temperature of the material - whether it is to be sheared hot or at room temperature.*
4) *Type of service - continuous or intermittent.*
5) *The metallurgical properties of material to be sheared including its tensile strength, ultimate & yield strength.*

These details are extremely important to select suitable raw material and heat treatment process to achieve perfect combination of all the seven required qualities of Shear Blades & Knives.

Blades and Knives are heat treated in Salt Bath, fitted with calibrated automatic temperature controllers. Furnaces are designed so as to maintain uniform temperature throughout the section. Tempering cycles are carried out in furnaces having forced air circulation to ensure uniform heating throughout Blades & Knives.

Shear Blades are essentially made out of various types of alloy steels. Each type of alloy steel has its own characteristic dimensional changes in heat treatment. Due to the above fact, CRS which is being maintained before heat treatment changes after heat treatment and often creates problem in fitment in the machine. DeeTee is well aware of the above fact and accordingly keeps an allowance in CRS to account for any changes during heat treatment, so that correct CRS is achieved in finished product. If some of the CRS are shifted then hole is made oblong.

An important factor is Blade clearance. There is no specific standard for this, but a clearance of approximately 7% of the thickness of the material to be sheared is recommended.

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DeeTee manufacture wide range of Shear Blades and Machine Knives.

Crop Shears, Flying Shears, Cold Shear Blades, Paper Cutting Knives, Bar Shears, Scrap Choppers, Wearing Plates, Hot Shear Blades, Bow Type Shear Blades etc.

Depending on the type of application, DeeTee has classified its products into five categories of raw material

1	2	3	4	5
High Carbon High Chromium Steel : (HCHCr)AISI-D3	**High Carbon High Chromium Steel : (HCHCr)AISI-D2**	**Shock Resistance Steel : AISI-SI**	**Hot Die Steel : AISI-H-13**	**High Speed Steel : AISI-M-2**
AISI-D3 is used for cutting cellulose, fibre boards, paper and plastic etc., non-ferrous alloys & mild steel upto 5 mm thickness.	AISI-D2 is suitable to shear Mild steel upto 8 mm thickness and Stainless Steel upto 5 mm thickness.	This material is generally used for cutting mild steel above 8 mm & Stainless Steel above 5 mm thickness.	AISI-H-13 is used for hot shearing of ferrous Billets, Bars, Rods, etc. It is also used for mild steel above 8 mm thickness.	This material is preferred for cutting tougher steels & silicon bearing steels, sticky non-ferrous alloys & aluminium alloys

Raw material before taking into process should be tested in respect of chemical composition, metallographic analysis & ultrasonic testing. And in the final stage of inspection, Blades & Knives should be thoroughly checked in respect of hardness & dimensional accuracy as per following dimensional tolerances

Tolerance on Shear Blades

Length	Upto 1500 mm ± 1 mm	Above 1500 to 2500 mm ± 1.5 mm
Matched Length	± 0.2 mm	± 0.3 mm
Thickness Parallelity	Within 0.025 (leave 20 mm from corner)	Within 0.05 (leave 25 mm from corner)
Width Parallelity	Within 0.025	Within 0.04
CRS	± 0.4 mm for clear holes ± 0.25 mm for tapped holes	
Cumulative CRS	± 1.00 mm for clear holes ± 0.6 mm for tapped holes	
Straightness (Thickness) Straightness (Width)	0.15 mm per 1000 mm 0.10 mm per 1000 mm	

Thickness and width shall be maintained as per IS-2102, med. grade, unless specified otherwise, i.e. up to 6 mm ± 0.1, 6 to 30 mm. ± 0.2, 30 to 120 mm ± 0.3.

Please let us know the details of material to be sheared and we will do the rest. Engineers at DeeTee shall select proper raw material and impart correct hardness, so that you can get maximum life from Shear Blades.

Note : Closer Tolerances are available on request.

Tools WHICH LAST LONGER - ***Slitting Line Tooling, Tube/Section Mill Rolls, Tube Cut Off Knives, Cold Rolling Mill Rolls, Leveller Rolls, 20 Hi Mill Rolls, Backup Roll, Fins, Steel Centers, Friction Saws, Shear Blades, H.S.S. Saws & C.T. Saw Bodies, Bar Mill Tooling.***

TOP TOOLS DEWAS TOOLS