PNEUMO S1

COLD WORK TOOL STEEL

Nominal Chemical Analysis %	
C	.60
Si	.60
Cr	1.10
V	.20
W	2.00

Corresponding Specifications	
AISI	S1
BS EN ISO 4957:2000	60WCrV8
Supersedes BS4659	BS1
WKSTOFF	1.2550

Colour Code: Red/White

Delivery Condition
Annealed 229 BHN Max

Characteristics
S1 is a shock resisting tool steel giving excellent toughness and high strength with higher hardness than lower carbon S1 types. It may also be used for hot work applications where a moderate hot hardness is required.

Applications
S1 is suitable for blanking and forming tools for thick material, for shear blades, circular shears, wood chipping knives and pneumatic chisels. Hot working applications: cropping and swaging tools, and pressing and stamping dies.

Heat Treatment

Annealing
750 / 780°C for 4 hours approx.
Cool slowly in the furnace at 20°C maximum per hour.

Stress Relieving
600 / 650°C for 2 hours approx.
Cool in still air. Always stress relieve before hardening.

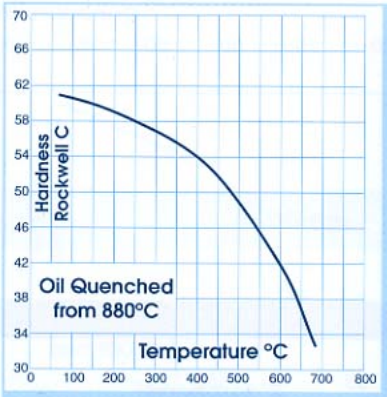
Hardening
Pre-Heating
(i) 400°C Holding time at temperature:
1 min / mm effective section approx.
(ii) 650°C Holding time at temperature:
30 sec / mm effective section approx.

Austenitizing
870 / 900°C Holding time at temperature:
1 min / mm effective section approx.

Quenching:-
(i)Quench in Oil,

Temper immediately after quenching whilst tools are still hand warm.

Tempering



Consult the tempering diagram and temper according to requirements.

Temper for 1 hour / 25mm effective section for a minimum of 2 hours, then cool in still air.

For guidance, temper at:

150 / 200°C for maximum hardness

250 / 350°C for hardness with toughness

400 / 500°C for maximum toughness

Double tempering is recommended, cooling to room temperature between tempers.

NB. Lower hardness values will tend to result when hardening larger sections.