Quality	**52CrMoV4**
According to Standard	**EN 10089 : 2002**
Number	**1.7701**

ALOK INGOTS
steel re engineered
AN ISO 9001:2008 CERTIFIED COMPANY

Comparable Standards	German DIN	France AFNOR	Spain UNE	China GB	U.K. B.S.	Russia GOST	USA AISI - SAE	Japan JIS
	51CrMoV4	51CDV4	-	-	-	-	4150	-

Chemical Analysis	C% max	Si% max	Mn% max	P% max	S% max	Cr%	Mo%	V%
	0.48 - 0.56	0.40	0.70 - 1.10	0.025	0.025	0.90 - 1.20	0.15 - 0.30	0.10 - 0.20

Hot Work and Heat Treatment Temperatures

Temperature °C

Hot - Forming	Supply State +U	Soft Annealing +A	End Quench Hardenebility test	Normalising	Quenching	Quenching	Tempering	Stress-relieving +SR
1050 - 850	natural state	680 - 640 slow	850 Water	880 - 850 air	850 - 880 oil ,	830 - 860	400 - 460	Not Allowed
	(HB max 310)	cooling in furnace (HB max 248)			polymer	oil , polymer, water or s.b (500)	air	

Mechanical Properties at Room Temperature

Hot Rolled Mechamical Properties after Quenched at 860°C in oil & Tempering at 450°C air EN 10089 - 2002

Size d/t mm		Testing at Room Temperature (Longitudinal)					
From	To	R N/mm2	Rp 0.2 N/mm2	A% min.	C% min.	KU J min.	Kv for for information
	54	1450 - 1750	1300	6	35	10	6

Typical Values at room temperature for quenched & tempered materials

Size mm	Testing at room temperature (Longitudinal)					
	R N/mm2	Rp 0.2 N/mm2	A% min.	C% min.	KU J min.	Kv for for information
25	1120	930	12	42		40

EN 10089 : 2002 Jominy test HRC grain size 5 min. distance in mm from quenched end

Symbol H	1.5	3	5	7	9	11	13	15	20	25
min	57	56	56	55	53	52	51	50	48	47
max	67	67	67	67	67	67	67	67	66	66
min	60	60	60	59	58	57	56	53	53	53
max	67	67	67	67	67	67	67	67	66	66