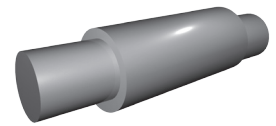




SHAFTS

The open die forging process for our shafts enables us to orient the grain flow all along the geometry, which is essential for achieving the high mechanical properties expected of a product of this type. Our forging capabilities provide significant cost and material savings when compared to machined bar step shafts.



MANUFACTURING CAPABILITIES

Range	O.D. up to 45 in.
	Length up to 315 in.
	Weight up to 77,000 lb.
Material	Carbon Steel, Alloy Steel, Tool Steel, Stainless Steel.
Heat Treat	Normalizing, Quenching, Tempering, Annealing, Solution Annealing, Spheroidizing, Aging, Stress Relieving.
Testing	Destructive and Non-Destructive.
Machining	Available CNC machining capabilities: vertical & horizontal turning, milling, boring, drilling, deep drilling.



MATERIAL STOCKING GRADES

Classification	Grade	UNS Number	DIN	Werkstoff Nr
Carbon and Low Alloy steels	A105	K03504	C22.8	1.0460
	1010	G10100	CK10	1.1121
	1018	G10180	CK15	1.1141
	1020	G10200	CK20	
	1035	G10350	CK35	1.1181
	1045	G10450	CK45	1.1191
	1050	G10500	CK50	
	1080	G10800	CK80	
	1552	G15520		
	A350 Grade LF6			
A350 Grade LF2	K03011	C22.8	1.0460	
A694				
Alloy Steels			E355	1.0580
	4130	G41300	25CrMo4	1.7218
	4140	G41400	42CrMo2	1.7225
	4145	G41450		
	4320	G43200		
	4330			
	4340	G43400	34CrNiMo6	1.6582
	52100		100Cr6	1.3505
	8620	G86200	21NiCrMo22	1.6543
	8630	G86300		1.6545
	A182 Grade F5	K41545	12CrMo195	1.7362
	A 182 Grade F11	K11597	13CrMo4-5	1.7335
	A 182 Grade F22	K21590	10CrMo9-10	1.7380
	A707 Grade L5			
A707 Grade 3W				
Tool Steels	H13	T20813	X 40 CrMoV 5-1	1.2344
	P20	T51620	40CrMnNiMo8-6-4	1.2311
	L6	T61206	55NiCrMoV6	1.2713
Stainless Steels	A182 F44	S31254	X1CrNiMoN20-18-7	1.4547
	A182 F51	S31803	X 2 CrNiMoN22-5-3	1.4462
	A182 F53	S32750	X2CrNiMoN25-7-4	1.4410
	A182 F60	S32205		
	A182 F91	K90901	X 10 CrMoVNB9-1	1.4903
	15-5 PH	S15500	X5CrNiCuNb15-5	1.4545
	17-4 PH	S17400	X5CrNiCuNb 17-4	1.4542
	304	S30400	X5CrNi18-10	1.4301
	304L	S30403	X5CrNi18-9	1.4306
	310	S31000	X8 CrNi 25-21	1.4845
	316	S31600	X5CrNiMo17 12-2	1.4401
	316L	S31603	X2CrNiMo17 12-2	1.4404
	321	S32100	X6CrNiTi18-10	1.4541
	347	S34700	X6CrNiNb18-10	1.4551
	410	S41000	X12Cr13	1.4006
	420	S42000	X46Cr13	1.4034
	422	S42200		1.4935
	431	S43100	X17CrNi16-2	1.4057
			X 22 CrNiMoV 12-1	1.4923
		X11CrMo 12-1		
F6NM	S41500	X 3 CrNiMo 13-4	1.4313	
Alloy 718	N07718	NiCr19Fe19Nb5Mo3	2.4668	
Alloy 718 Plus				
Waspaloy	N07001	NiCr20Co13Mo4Ti3Al	2.4654	
Alloy 909	N19909	X4NiCo38Nb		
Alloy 907	N19907	X4NiCo38Nb		
Alloy 625	N06625	NiCr22Mo9Nb	2.4856	
Alloy 600	N06600	NiCr15Fe8	2.4816	
Alloy 617	N06617	NiCr23Co12Mo	2.4663	
Alloy X	N06000	NiCr22Fe18Mo	2.4665	
Alloy H230	N06230	NiCo29Cr28Si	2.4880	
Alloy 188	R30188	CoCr22NiW	2.4683	
Alloy H242	N10242			
Alloy HR120	N08120	NiFe33Cr25Co	2.4854	
Nimonic 80	N07080	NiCr20TiAl	2.4952	
Alloy 825	N08825	NiCr 21 Mo	2.4858	
Alloy 800 H	N08800/N08810	X8 NiCrAlTi 32-21	1.4876 / 1.4958	
Alloy C276	N10276	NiMo 16 Cr 15 W	2.4819	
Monel 400	N04400	NiCu 30 Fe	2.4360	
Alloy C263	N07263	NiCo20Cr20Mo6Ti2Al	2.4650	
Alloy 286	S66286	X5 NiCrTi 26-15	1.4980	
Rene 41	N07041	NiCr19Co11MoTi	2.4973	
Thermo Span				
Titanium	Ti-6-4	R56400	TiAl6V4	3.7165
	Ti 6-2-4-2	R54620	TiAl6Sn2Zr4Mo2	3.7145
	Ti 21s	R58210		
	Ti 834			