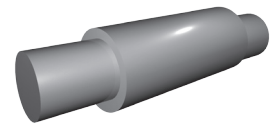




STEP & FLANGE SHAFTS

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	Max O.D. 45 in.
	Min O.D. 7 in.
	Weight up to 77,000 lb.
Material	Carbon Steel, Alloy Steel, Tool Steel, Stainless Steel, Tool 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
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	
		X 3 CrNiMo 13-4	1.4313	
		NiCr19Fe19Nb5Mo3	2.4668	
	F6NM	S41500		1.4313
	Alloy 718	N07718		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	N06002	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
		S66286	X5 NiCrTi 26-15	1.4980
		N07041	NiCr19Co11MoTi	2.4973
	Thermo Span			
Aluminum	Al 6061			
	Al 7075			
	Al 2618			
	Al 2014			
Titanium	Ti-6-4	R56400	TiAl6V4	3.7165
	Ti 6-2-4-2	R54620	TiAl6Sn2Zr4Mo2	3.7145
	Ti 21s	R58210		
	Ti 834			
	Ti-407			