



TMA
TRITON METAL & ALLOYS

Innovating for a strong World



MANUFACTURING & STOCKIST OF
FERROUS & NON-FERROUS MATERIAL
& ALL TYPES OF FORGE PRODUCTS



TMA
TRITONMETAL&ALLOYS

Admin Office : Shop No. 8, Gr. Flr., Plot No. 199/201,
Siddhesh Darshan Bldg., 10th Khetwadi, Mumbai - 04. Maharashtra (INDIA)
Tel.:022-6651 8619 • E : sales@tritonmetalalloys.com
tritonmetalalloys@gmail.com • w : www.tritonmetalalloys.com
GSTIN : 27AAOFT0955B1Z5

Factory : Block No. 156, Near Bidaj Farm, Opp. G.G.S.O.N.G.C. Village : Vasna Marg,
Tal. Dist. Kheda, Gujrat - 387120 (INDIA)



Company Profile

TRITON METAL & ALLOYS an integrated manufacturing unit based in Mumbai, commenced its operation. The company has an exclusive range of high quality Stainless Steel Flanges, Ring, Round Bar, Circle and all Forged Products, with an objective to provide highest quality standard products to customers conforming to international norms. To meet the customers demand at every level is the vital force that drives the organization towards higher performance standards of manufacturing and product quality, To achieve this every stage of manufacturing to delivery cycle, the company has set the Six "P" Progress Policy, Product, Process, Prevention, Protection and Project, enabling to stay at forefront of manufacturing expertise.

We are doing all Jobs under supervision of Experts / engineers and also designed in the manner to combat in appropriate and give the product longer life span and to serve the requirement of our valued customers, In addition, we provide inspection by any reputed third party inspection agencies.

Quality Policy

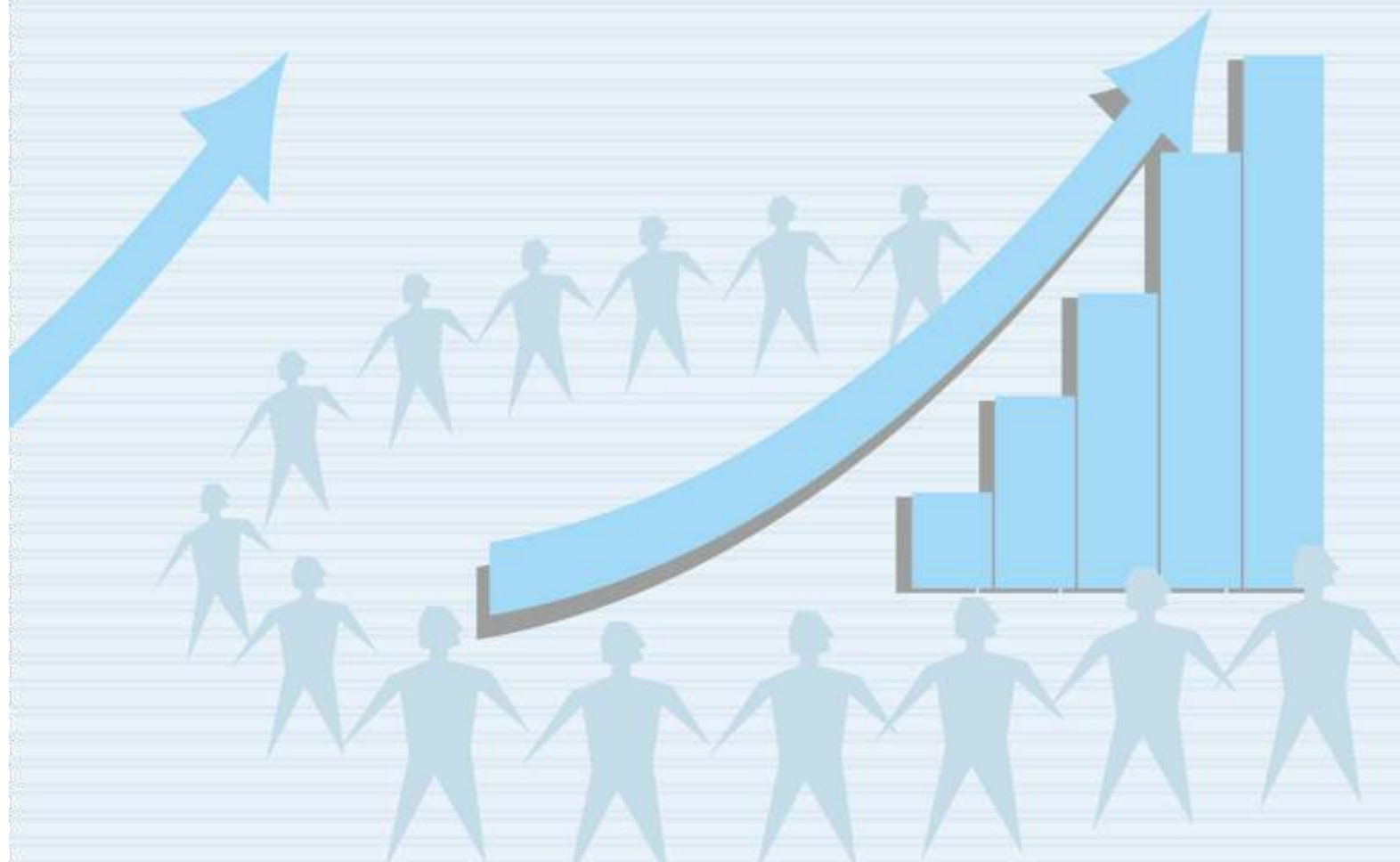
The company believes that commitment in dealings with customers are primary for successful and persistent business relationships. This principal controls all aspects of the company's approach to customers. The company shall endeavour to provide the value for money by maintaining consistence, quality & reliability.



Our Services

The size of our team and our protracted expertise allow us to accomplish absolutely any type of a project, regardless of its complexity!

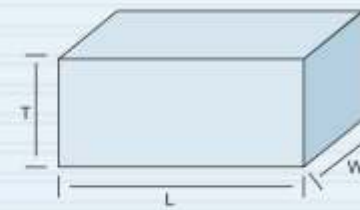
- 1. FORGING**
We are known for forging with accuracy and quality. We have both facility of open & closed die forging.
- 2. HEAT TREATMENT**
Heat treating is a group of industrial and metalworking processes used to alter the physical, and sometimes chemical, properties of a material.
- 3. PROOF MACHINING/ FINISH MACHINING**
We can supply material in finish/proof machined condition as required by customer.



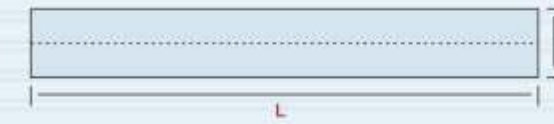
The Art of Performance



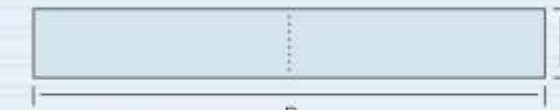
Open Die Forgings



Blocks
Width = 450 mm
Thickness = 450 mm
Weight = 6 T



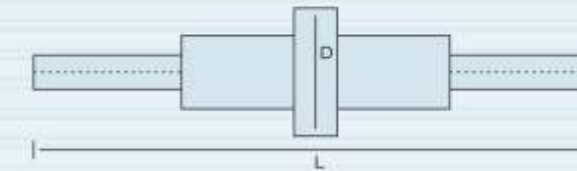
Plain Shaft
Diameter = 125 to 600 mm
Length = up to 9 meter
Weight = 14 T



Disc / Yube Sheet
Diameter = 1000 mm
Weight = 1.7 T



Gear Blank
Diameter = 1800 mm
Weight = 37 T



Blocks
Diameter = 130 to 400 mm
Length = up to 9 meter
Weight = 4 T



Blocks



Shaft



Motor Shaft



Stepped Shafts



Precision-Roto Shafts

Materials Standard's

STAINLESS STEEL	ASTMA 182 F304 / 304L, 316/316L/316 Ti, 321 / 321 H. etc. A 403
ALLOY STEEL	ASTM A 182 F11, F22, F5, F9, F91 etc. A234WP 11 / 22 / 5 / 9 / 91 etc.
CARBON STEEL	A 105 A 234 WPB / C
LOW TEMPERATURE STEEL	A 350 LF2 A 420 WP L 6/3

Product Range

FORGED FLANGES as per ANSI B 16.5	150#: 1/2" to 48" 300#: 1/2" to 42" 600#: 1/2" to 42" 900#: 1/2" to 36" 1500#: 1/2" to 24" 2500#: 1/2" to 12"
DIN FLANGES PRESSURE RATING BS STANDARDS TYPES SPECIALS TYPES- FORGED FITTING'S as per ANSI B 16.5 / 11	DIN 2573, 2576, 2527, 2631, 2632, 2633, 2634, 2635 etc. PN6 ,PN10, PN16, PN25, PN40 etc. BS 4504, BS10 T- D / E / F / H etc. SLIPON, WELD NECK, BLIND, SOCKETWELD, THREADED, LAPJOINT RING JOINTS, TOUNGE & GROOVE, ORIFACE, SPECTACLE BLIND etc
ANSI RATING TYPES SIZES BUTTWELD FITTING'S DIMENSION TYPES SIZES SCHEDULE	2000# TO 9000# PSI SOCKET WELD AND THREADED END'S 1/2" NB TO 4" NB ELBOW, TEE'S, CAPS, REDUCER'S, STUBEND'S etc. AS PER ANSI B 16.9 / 16.20 SEAMLESS AND WELDED 1/2" NB TO 24" NB SCH 5 TO SCH XXS

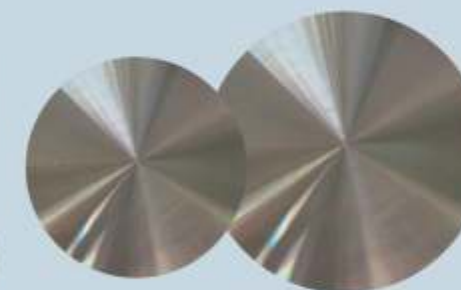
Tel.: 00 91 - 22 - 6651 8619

Email : sales@tritonmetalalloys.com

TRITON METAL & ALLOYS



Ring



Disc



Gear Blanks



Flanges



Chemical Composition for Stainless Steel Grades



Chemical Composition for Alloys Steel Grades

Chemical Composition for Stainless Steel Grades

Grades	C % Max.	MN% Max.	P% Max.	S% Max.	S% Max.	CR %	MO %	NI%	Tensile KSI/MPA Min %	Yield KSI/MPA Min %	Elong. 2" % Min	Reduction Area % Min.
A 403 TP 304	0.080	2.000	0.040	0.030	1.00	18-20	-	8-11	75-515	30-205	30	-
A 403 TP 304H	0.04-0.10	2.000	0.040	0.030	1.00	18-20	-	8-11	75-515	30-205	30	-
A 403 TP 304L	0.035	2.000	0.040	0.030	1.00	18-20	-	8-13	70-485	25-170	30	-
A 403 TP 316	0.080	2.000	0.040	0.030	1.00	16-18	2-3	10-14	75-515	30-205	30	-
A 403 TP 316H	0.04-0.10	2.000	0.040	0.030	1.00	16-18	2-3	10-14	75-515	30-205	30	-
A 403 TP 316L	0.035	2.000	0.040	0.030	1.00	16-18	2-3	10-15	70-485	25-170	30	-
A 403 TP 317	0.080	2.000	0.040	0.030	1.00	18-20	3-4	11-15	75-515	30-205	30	-
A 403 TP 310	0.150	2.000	0.040	0.030	1.00	24-26	-	19-22	75-515	30-205	30	-
A 403 TP 309	0.150	2.000	0.040	0.030	1.00	22-24	-	12-15	75-515	30-205	30	-
A 403 TP 347	0.080	2.000	0.040	0.030	1.00	17-20	-	9-13	75-515	30-205	30	-
A 403 TP 347H	0.04-0.10	2.000	0.040	0.030	1.00	17-20	-	9-13	75-515	30-205	30	-
A 403 TP 321	0.080	2.000	0.040	0.030	1.00	17-20	-	9-13	75-515	30-205	30	-
A 403 TP 321 H	0.04-0.10	2.000	0.040	0.030	1.00	17-20	-	9-13	75-515	30-205	30	-
A 182 F 304	0.080	2.000	0.040	0.030	1.00	18-20	-	8-11	75-515	30-205	30	50
A 182 F 304H	0.04-0.10	2.000	0.040	0.030	1.00	18-20	-	8-11	75-515	30-205	30	50
A 182 F 304L	0.350	2.000	0.040	0.030	1.00	18-20	-	8-11	70-485	25-170	30	50
A 182 F 316	0.04-0.080	2.000	0.040	0.030	1.00	16-18	2-3	10-14	75-515	30-205	30	50
A 182 F 316H	0.04-0.10	2.000	0.040	0.030	1.00	16-18	2-3	10-14	75-515	30-205	30	50
A 182 F 316L	0.035	2.000	0.040	0.030	1.00	16-18	2-3	10-15	70-485	25-170	30	50
A 182 F 317	0.080	2.000	0.040	0.030	1.00	18-20	3-4	11-15	75-515	30-205	30	50
A 182 F 310	0.150	2.000	0.040	0.030	1.00	24-26	-	19-22	75-515	30-205	30	50
A 182 F 309	0.150	2.000	0.040	0.030	1.00	22-24	-	12-15	75-515	30-205	30	50
A 182 F 347	0.080	2.000	0.040	0.030	1.00	17-20	-	9-13	75-515	30-205	30	50
A 182 F 347H	0.04-0.10	2.000	0.040	0.030	1.00	17-20	-	9-13	75-515	30-205	30	50
A 182 F 321	0.080	2.000	0.040	0.030	1.00	17-20	-	9-12	75-515	30-205	30	50
A 182 F 321H	0.04-0.10	2.000	0.040	0.030	1.00	17-20	-	9-13	75-515	30-205	30	50
F 50	0.030	2.00	0.045	0.030	1.00	24.0-26.0	1.20-2.00	5.5-6.5	100-130	65-450	25	50
-	-	-	-	-	-	-	-	-	[690-900]	-	-	-
F 51	0.030	2.00	0.030	0.020	1.00	21.0-23.0	2.5-3.5	4.5-6.5	90-620	65-450	25	45
F 52	0.030	2.00	0.035	0.010	0.60	26.0-29.0	1.00-2.50	3.5-5.2	100-690	70-485	15	-
F 53	0.030	1.20	0.035	0.020	0.80	24.0-26.0	3.0-5.0	6.0-8.0	116-800	80-550	15	-
F 54	0.030	1.00	0.030	0.020	0.80	24.0-26.0	2.5-3.5	6.0-8.0	116-800	80-550	15	30
F 55	0.030	1.00	0.030	0.010	1.00	24.0-26.0	3.0-4.0	6.0-8.0	109-130	80-550	25	45
-	-	-	-	-	-	-	-	-	[750-895]	-	-	-
F 57	0.025	0.80	0.025	0.002	0.80	24.0-26.0	3.0-4.0	6.5-8.0	118-820	85-585	25	50
F 59	0.030	1.50	0.035	0.020	0.80	24.0-26.0	3.0-5.0	5.5-8.0	112-770	80-550	25	40
F 60	0.030	2.00	0.030	0.020	1.00	22.0-23.0	3.0-3.5	4.5-6.5	95-655	65-450	25	45

Tel.: 00 91 - 22 - 6651 8619

Email : sales@tritonmetallalloys.com

Chemical Composition for Alloy Steel Grades

Grades	C %	MN%	Max. P%	Max. S%	SI%	CR %	MO %	Max Ni%	Tensile MPA Min-Max%	Yield MPA Min%	Elong. 2" % Min	Reduction Area % Min
A 234 P5	0.15 max	0.30-0.60	0.040	0.030	0.50 max	4.00-6.00	0.44-0.65	-	415-585	205	30	-
A 234 P9	0.15 max	0.30-0.60	0.030	0.030	0.25-1.00	8.00-10.0	0.90-1.10	-	415-585	205	30	-
A 234 P11 CL 1	0.05-0.15	0.30-0.60	0.030	0.030	0.50-1.00	1.00-1.50	0.44-0.65	-	415-485	205	30	-
A234 P11 CL 2	0.05-0.20	0.30-0.80	0.030	0.040	0.50-1.00	1.00-1.50	0.44-0.65	-	485-655	275	30	-
A 234 P11 CL 3	0.05-0.20	0.30-0.80	0.030	0.040	0.50-1.00	1.00-1.50	0.44-0.65	-	520-690	275	30	-
A 234 P12 CL 1	0.05-0.20	0.30-0.80	0.045	0.045	0.60 max	0.80-1.25	0.44-0.65	-	415-585	220	30	-
A234 P12 CL 2	0.05-0.20	0.30-0.80	0.045	0.045	0.60 max	0.80-1.25	0.44-0.65	-	415-655	220	30	-
									KSI/MPA Min %	KSI/MPA Min %	Elong. 2" % Min	Reduction Area % Min
A 182 F1	0.28 max	0.60-0.90	0.045	0.045	0.15-0.35	-	0.44-0.65	-	70/485	40/275	25	30
A 182 F12	0.10-0.20	0.30-0.80	0.040	0.040	0.10-0.60	0.80-1.25	0.44-0.65	-	70/485	40/275	25	30
A 182 F11	0.10-0.20	0.30-0.80	0.040	0.040	0.50-1.00	1.00-1.50	0.44-0.65	-	70/485	40/275	20	30
A 182 F22	0.15 max	0.30-0.60	0.040	0.040	0.50 max	2.00-2.50	0.87-1.13	-	75/515	45/310	20	30
A 182 F5	0.15 max	0.30-0.60	0.030	0.030	0.50 max	4.00-6.00	0.44-0.65	0.50	90/620	65/450	22	35
A 182 F9	0.15 max	0.30-0.60	0.030	0.030	0.5-1.0	8.00-10.0	0.90-1.10	-	85/590	55/380	20	40
A 182 F91	0.08-0.12	0.30-0.60	0.020	0.010	0.20-0.50	8.0-9.50	0.85-1.050	0.40	85/590	60/410	20	40

Chemical Composition for Carbon Steel Grades

Grades	Max C %	Min%	Max. P%	Max. S%	SI%	CR %	Max. MO%	NI%	Tensile MPA Min- Max%	Yield MPA Min %	Elong. 2" % Min	Reduction Area % Min
A234 WPB	0.30	0.29-1.06	0.050	0.058	0.10 MIN	-	-	-	415 / 585	240	30	-
A234 WPC	0.35	0.29-1.06	0.050	0.058	0.10 MIN	-	-	-	485 / 655	275	30	-
A 234 WPL6	0.30	0.39-1.06	0.048	0.58	0.10 MIN	-	-	-	415 / 585	240	30	-
A 234 WPL3	0.20	0.31-0.64	0.05	0.05	0.13-0.37	-	-	3.18-3.82	450 / 620	240	30	-
									KSI/MPA Min %	KSI/MPA Min%	Elong. 2" % Min	Reduction Area % Min
A 105	0.35	0.60-1.05	0.040	0.050	0.350 max	0.30 max	0.120	0.40 max	70 / 485	36 / 250	22	30
A 350 LF2	0.30	1.350 max	0.035	0.04	0.15-0.30	-	-	-	70 / 485	36 / 250	22	30
A 350 LF3	0.20	0.90 max	0.035	0.04	0.20-0.35	-	-	3.25-3.75	70 / 485	37.5 / 260	22	35

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Nickel Base Alloys Weight Formula



Nickel Base Alloys

	C max	Mn max	Ni	Fe	S max	Si max	Cu	Cr	Co	Mo	Al	Ti
Monel 400	0.3	2.0	63-70	2.5 max	0.024	0.50	28-34	-	-	-	-	-
Monel K 500	0.25	1.5	63 min	2.0 max	0.010	0.50	27-33	-	-	-	2.3-3.15	0.35-0.85
Inconel 600	0.15	1.0	72 min	6-10	0.015	0.50	0.5 max	14-17	-	-	-	-
Inconel 625	0.10	0.5	60.5 min	5.0 max	0.015	0.50	-	20-23	-	8-10	0.4 max	0.4 max
Incoloy 800	0.10	1.5	30-35	Bal.	0.015	1.0	0.75 max	19-23	-	-	0.15-0.6	0.15-0.6
Incoloy 825	0.05	1.0	38-46	22 min	0.030	0.5	1.5-3.0	19.5-23.5	-	2.5-3.5	0.2 max	0.6-1.2
Incoloy 904	0.025	0.25	32.5 min	Bal.	0.015	0.25	0.25 max	-	14.5 min	-	0.1 min	1.6 min
Hastelloy B	0.05	1.0	Rest	4.0-6.0	0.03	1.0	-	1.0 max	2.5 max	26-28	-	-
Hastelloy C	0.1	1.0	Rest	4.0-7.0	0.03	0.08	-	14.5-16.5	2.5 max	15-17	-	-
Alloy 904L	0.02	2.0	23-28	18.2 min	0.35	1.0	1.0/2.0	19-23	-	4-5	-	-
Cu-Ni 90 -10	0.05	1.0	9-11	1.0-1.8	0.02	-	Rest	-	-	-	-	-

Formula of Weight

WEIGHT OF STAINLESS STEEL PIPES & TUBES O.D. (mm) - W.T. (mm) x W. T. (mm) x 0.02466 = Kg. per meter	WEIGHT OF CARBON STEEL SHEETS - PLATES Length (Mtr.) x Width (Mtr.) x Thk (mm) x 7.85 = Kg. Per Sheet
SHEET WIDTH REQUIRED FOR ROLLED AND WELDED PIPES O.D. (mm) - Thk. (mm) x 3.14 = Sheet Width	WEIGHT OF COPPER PIPES O.D. (mm) - W.T. (mm) x W. T. (mm) x 0.0256 = Kg. Per Meter
WEIGHT OF STAINLESS STEEL SHEETS Length (Mtr.) x Width (Mtr.) x Thk (mm) x 8 = Kg. Per Sheet	WEIGHT OF LEAD PIPES (appro.) O.D. (mm) - W. T. (mm) x W. T. (mm) x 0.0345 = kg. Per Meter
WEIGHT OF STAINLESS STEEL CIRCLE & BLANKS O.D. (mm) x O.D. (mm) x Thk. (mm) : 160000 = Kg. Per Pcs.	WEIGHT OF LEAD SHEETS (appro.) Length (Mtr.) x Width (Mtr.) x Thk. (mm) x 11.2 = Kg. Per Sheet
WEIGHT OF STAINLESS STEEL ROUNDS Dia. (mm) x Dia. (mm) x 0.00823 = Kg. Per Meter	WEIGHT OF ALUMINIUM PIPES (appro.) O.D. (mm) - W.T. (mm) x W. T. (mm) x 0.0082 = Kg. Per Meter
WEIGHT OF STAINLESS STEEL HEXAGONAL RODS Dia. (mm) x Dia. (mm) x 0.00679 = Kg. Per Meter	WEIGHT OF ALUMINIUM SHEETS (appro.) Length (Mtr.) x Width (Mtr.) x Thk. (mm) x 2.66 = Kg. Per Sheet
WEIGHT OF STAINLESS STEEL SQUARE BARS Dia. (mm) x Dia. (mm) x 0.00787 = Kg. Per Meter	Tensile Strength Conversion Table
WEIGHT OF CARBON STEEL PIPES & TUBES O.D. (mm) - W. T. (mm) x W. T. (mm) x 0.02466 = Kg. Per Meter	1) Kg/mm ² x 9.81 = N/mm ² =MPa
	2) Psi x 0.0007 = Kg/mm ²
	3) Ksi x 1000 = Psi
	4) Kg/mm ² x 1.422 = KSi

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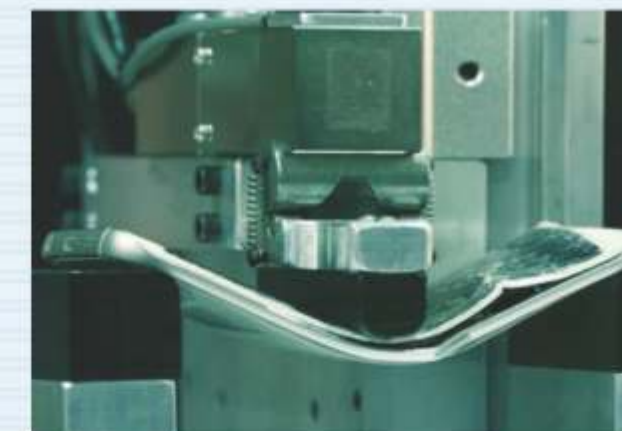


SPECTRO TEST

We are performing spectro test on raw material heat, a lot forged and heat treated in single batch to establish that the manufactured product is in conformity with the specified chemical composition.

BEND TEST

Bend tests deform the test material at the midpoint causing a concave surface or a bend to form without the occurrence of fracture and are typically performed to determine the ductility or resistance to fracture of that material.



IGC TEST

Intergranular corrosion (IGC) testing is the only corrosion test performed as a standardized pre-delivery test. Intergranular corrosion in stainless steels may result from precipitation of carbides, nitrides or intermetallic phases. Only in the most highly oxidizing solutions can intergranular attack be caused by intermetallic phases. When a test is to be restricted to carbides, in a material containing nitrides or intermetallic phases, a less oxidizing solution is chosen. We are performing different IGC test practices as per the ASTM A262 specification.

Quality Assurance



NDT Testing

Quality Assurance

Our advanced inspection equipments and experienced quality control staff assure defect free products in accordance with users requirements.



HARDNESS TEST

Hardness measures the resistance of a sample to material deformation due to a constant compression load from a sharp object. The tests work on the basic premise of measuring the critical dimensions of an indentation left by a specifically dimensioned and loaded indenter. We are measuring hardness on Rockwell, Vickers & Brinell scales.

TENSILE TEST

Tensile Test in which a sample is subjected to a controlled tension until failure. The results from the test are commonly used to select a material for an application, for quality control, and to predict how a material will react under other types of forces. Properties that are directly measured via a tensile test are ultimate tensile strength, maximum elongation and reduction in area.



IMPACT TEST

The purpose of impact testing is to measure an object's ability to resist high-rate loading. It is usually thought of in terms of two objects striking each other at high relative speeds. A part or material's ability to resist impact often is one of the determining factors in the service life of a part, or in the suitability of a designated material for a particular application. Impact testing most commonly consists of Charpy and IZOD Specimen configurations.

ULTRASONIC TEST

Ultrasonic testing (UT) is a family of non-destructive testing techniques based on the propagation of ultrasonic waves in the object or material tested. In most common UT applications, very short ultrasonic pulse-waves with center frequencies ranging from 0.1-15 MHz, and occasionally up to 50 MHz, are transmitted into materials to detect internal flaws or to characterize materials. A common example is ultrasonic thickness measurement, which tests the thickness of the test object, for example, to monitor pipe work corrosion.



PMI TEST

To ensure the same quality of material we are dispatching as required by the customer, PMI test has been performed on every single piece. PMI (Positive Material Identification) testing is the analysis of materials to determine the chemical composition of a metal or alloy at particular (usually multiple) steps of alloy manufacturing or in-process alloy installation.

MAGNETIC PARTICLE INSPECTION

Magnetic particle Inspection (MPI) is a non-destructive testing (NDT) process for detecting surface and slightly subsurface discontinuities in ferromagnetic materials such as iron, nickel, cobalt, and some of their alloys. The process puts a magnetic field into the part. The piece can be magnetized by direct or indirect magnetization. Direct magnetization occurs when the electric current is passed through the test object and a magnetic field is formed in the material. Indirect magnetization occurs when no electric current is passed through the test object, but a magnetic field is applied from an outside source. The magnetic lines of force are perpendicular to the direction of the electric current which may be either alternating current (AC) or some form of direct current (DC) (rectified AC).



DYE PENETRANT INSPECTION

Dye penetrant inspection (DPI), also called liquid penetrant inspection (LPI) or penetrant testing (PT), is a widely applied and low-cost inspection method used to locate surface-breaking defects in all non-porous materials (metals, plastics, or ceramics). The penetrant may be applied to all non-ferrous materials and ferrous materials, although for ferrous components magnetic-particle inspection is often used instead for its subsurface detection capability. LPI is used to detect casting, forging and welding surface defects such as hairline cracks, surface porosity, leaks in new products, and fatigue on in-service components.

PRAVIN K. AMBIKE
Mob.: 9820820163

SATYAM S. MEHTA
Mob.: 98670 16236



MANUFACTURING & STOCKIST OF
FERROUS & NON-FERROUS MATERIAL
& ALL TYPES OF FORGE PRODUCTS

STOCKISTS OF :

Our Product And Service As Under: Monel - Grade-400 / 500 / K 500 Nickel Grade-200 / 201 / 205
Inconel / incoloy - Grade-600 / 601 / 625 / 825 / 800 / 718 / X750 Etc. Hestelloy - Grade - B / C / B2 / C 276 / C
22 Titanium - Grade:- 1 / 2 / 5 / 7 Cuppro-nickel - Grade:- 8ac0-20 / 90-10 / 70-30

Stainless Steel - Grade-304, /304l/, 347/, 316a, /316b, /316l, /316ti, /316ln, 317l/,
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32760 Tungsten,molybdenum,tantalum, Beryllium Copper, Tin,phosphor Bronze, Aluminum Bronze,
Aluminium Alloy, Carbon Steel, Alloy Steel,tool Steel

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07, A-Wing, Mangalmurti Plaza,
10th Khetwadi, Mumbai-400004