



## Company Profile

# DYNAMIC ROLLS

Manufacturers, Suppliers & Exporters:



### INTRODUCTION

Dear Sir,  
We are introducing ourselves as  
one of the leading

manufacturer, exporter & supplier of Castings of steel rolling mills, chill rolls to rolling mills and, Flour Mills, Paper Mills, Rubber mills & Cement Plants Etc, ferrous and non ferrous both. We are supplying our rolls and castings in all over India and aboard. We are producing the rolls with latest technology & we have all facilities of quality Control & all analysis equipments available in house.

**DYNAMIC ROLLS** was established in 1975 and plant is situated at Raikot Road Malerkotla-148023 District Sangrur – PB- India. **Mr. Shaukat Ali**, versatile & genius lead the company as Managing Director. He has been dedicating all his efforts to improve the process of casting and machining activities of chilled rolls for steel rolling mills & non metallurgical rolls etc.

Dynamic Rolls is pioneer in India for manufacturing Cast Iron Chilled Rolls by centrifugal spin casting double pour technique. Over the last 40 years the process has been developed at our foundry and rolls of highest quality standards are manufactured and supplied to satisfied customers all over the India.



## GENERAL INFORMATION

NAME	:	<b>DYNAMIC ROLLS</b>
CONTACT PERSON	:	<b>Mr. SHAUKAT ALI</b> (Managing Director) CELL NO.: 0-94172 52253 CELL NO : 0-92162 52253
REGISTERED WORKS & OFFICE	:	<b>Mr. AMJAD ALI (MD)</b> CELL NO.: 0-98154 63786 CELL NO : 0-85688 51786 OPPOSITE KS AGROTECH, RAIKOT ROAD , MALERKOTLA – 148023 DISTT, MALERKOTLA, PUNJAB (INDIA)
PHONE (OFFICE)	:	+91 1675 – 250253
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CAPACITY & CAPABILITY	:	We have capacity and capability to produce of Shafted Chill Roll Size up to (500mm Dia x 1065mm Length) in Finish Roll.
CAST METAL ROLLS	:	METAL ROLLS HAVING WEIGHT RANGE: BETWEEN 100 KGS to 10,000 KGS PER SINGLE PIECE (PROOF MACHINE WEIGHT)
GENERAL ENG. FOUNDRY	:	ANY SHAPE HAVING WEIGHT RANGE BETWEEN 50 KGS to 15,000 KGS (ROUGH BLACK)
PRODUCT RANGE	:	<b>1. CAST METAL ROLLS:</b> THE COMPANY IS CAPABLE TO MANUFACTURING & SUPPLIED ALLOY STEEL & IRON BASE ROLLS FOR HOT STEEL ROLLING MILL. <b>2. GENERAL EGG. CASTING:</b> THE COMPANY IS CAPABLE TO



SUPPLYING STEEL & IRON CASTING IN DIFFERENT GRADE AS PER  
REQUIREMENT OF CUSTOMERS

## CENTRIFUGAL CASTING



### CAST IRON BASE ROLLS

CHILL ROLL FITTED WITH SHAFTED



BARREL CHILL ROLLS



RINGS



## Definite Shafted Chill Cast Iron Rolls & Rings

The working surface of Dynamic Rolls shows white graphite consisting of eutectic carbide and transformed austenite. This gives a hard layer which confers good resistance to wear. The core and neck are made upon steel shaft in specialized double poured centrifugally cast chill rolls barrels. Compared to grey iron, white Dynamic Rolls is less soft, strong and incapable of withstanding high dynamic stresses, but owing to greater hardness, has better wear-resistance and have high compressive strength. The softer core ensures good mechanical properties and resistance to thermal & mechanical loads.

### Process of Centrifugal Casting Steps:

1. Cast Rough Barrel.
2. Barrel Finishing Outer Dia & Inner Dia.
3. Shaft Finishing.
4. Shaft Fitting in Barrel. (Shrink Fitting Technology)
5. Plate Finishing.
6. Plate Fitting both side on barrel. (Shrink Fitting Technology)
7. Shaping & bearing Machining.
8. Wooden Packing on demand.



Application: These makes excellent work semi automatic or automatic plants, wire road plats, TMT Plants, Roughing Mill, intermediate Mill for two, Three and four high mills, turning out of high grade ferrous and non ferrous sheet and strip or section. High Alloy Dynamic Rolls have proved well.

### Chemical Composition

Hardness <sup>0</sup>	C%	Mn%	Si%	Ni%	S%	P%	Cr%	Mo%	Impact kg/mm	UTSkgf/mm.sq
60 – 65 <sup>0</sup>	3.00	0.55-0.80	1.20-1.80	0.80-1.30	0.15Max	0.10Max	0.70-1.10	0.20-0.30	0.25-0.45	20/30
65 – 70 <sup>0</sup>	3.00-3.20	0.60-0.80	1.00-1.60	1.00-1.40	0.11Max	0.11Max	0.80-1.20	0.20-0.30	0.25-0.45	20/30
70 – 75 <sup>0</sup>	3.00-3.50	0.60-0.90	1.00-1.60	1.30-1.80	0.11Max	0.011Max	1.00-1.50	0.30-0.40	0.25-0.45	20/30
75 – 80 <sup>0</sup>	3.20-3.50	0.60-0.90	0.70-1.00	1.50-2.00	0.10Max	0.050Max	1.60-1.90	0.40-0.50	0.25-0.45	20/30

### STEEL METAL CASTING STEEL CASTING OF SOLID ROLLS



### CAST IRON BASE ROLLS

### Indefinite Chill Cast Iron Rolls (Solid Chill)

As the name implies, the barrel surface of these rolls does not show a clear chill layer but rather a gradual transition from a carbide rich structure containing a small amount of graphite at the surface to a grey core material. These rolls ensure minimum sacrifice of clear chill while achieving maximum function depth.



The transition from chill to graphite being smoother, the gradual change in hardness associated with the indefinite –chill structure allows deeper grooving. Thus Indefinite Chill Rolls are superior in biting performance and have enough strength and resistance against thermal shock occurring at the time of failure in rolling operation compared to other Chill Rolls.

The presences of the graphite improve spall resistance and also enhance resistance to fire cracking. These Rolls are available in depending on the requirement of rolling mill.

These properties together with the excellent product surface finishing make these rolls very suitable application where this feature is important.

### Chemical Composition

Hardness <sup>0</sup>	C%	Mn%	Si%	Ni%	S%	P%	Cr%	Mo%	UT./Kg
60 – 65	3.0-3.5	0.4-0.6	1.5Max	1.00-1.50	0.30Max	0.10Max	1.2Max	0.2-0.3	35/40
65 – 70	3.0-3.5	0.50-0.80	1.2Max	1.25-2.00	0.30Max	0.15Max	1.2Max	0.20-0.40	35/40
70 - 75	3.0-3.5	0.50-0.90	1.5Max	2.00-3.00	0.30Max	0.15Max	0.80-1.20	0.45Max	35/40

### Definite Chill Cast Iron Rolls (Non Metallurgical)

BISCUIT PLANT ROLLS



PAPER MILL ROLLS

RUBBER MILL ROLLS

FOOD PROCESSING MILL



ROLLS

CALENDER & MIXING MILL

ROLLS



**Cast Iron Chilled Rolls** manufactured by us is made of best quality cast iron. Such rolls product are out of special chilled Cast Iron with excellent surface finish, wear resistance and corrosion resistance. Depending on the necessities



of cooling or steam heating, core of the rolls of smooth cast (and thoroughly cleaned) or machine board as desired by our customer. The chill depth is generally restricted in the 10-15 mm range. Higher chill depth can also be provided. Depending on the use, the barrel surface hardness varies from 60/65 to 70/75 range; Full graphitization of the inner layer is ensured to impart maximum toughness. These are frequently used in several industries like food processing industries, textile industries, paints, soap, detergent, pharmaceutical industries, rubber and paper industries. All these products are highly durable and performance oriented. Consequently, we are among the prominent Suppliers of Cast Iron Chilled Rolls.

### Chemical Composition

Hardness <sup>0</sup>	C%	Mn%	Si%	Ni%	S	P	Cr%	Mo%
60 – 70	3.0-3.4	0.2	0.2	0.5	0.085	0.4	1.00	0.30Max
70 – 75	3.20-3.75	0.6	0.6	Max	0.14	0.55	1.00	0.30Max

We are supply the following Products.

### STEEL BASE ROLLS



### Alloys Cast Steel Rolls



These rolls consist of lower carbon materials with some alloying, especially chromium. These ranges of rolls are capable of a higher strength wear resistance and are capable of good surface finish. These rolls are supplied with carbon content up to 1.5% and are heat treated to give a hardness which is normally between 30<sup>0</sup> and 45<sup>0</sup> Shore 'C'.

### Chemical Composition

Hardness <sup>0</sup>	C%	Mn%	Si%	Ni%	S%	P%	Cr%	Mo%	UTSkgf/mm.sq
30 – 40 <sup>0</sup>	0.50-1.00	.50-1.00	0.50-0.80	0.40-0.80	0.50Max	0.50Max	0.80-1.20	0.25-0.40	60/75
40 – 45 <sup>0</sup>	1.00-1.50	.50-1.00	0.50-0.80	0.40-0.80	0.50Max	0.50Max	0.90-1.25	0.20-0.30	60/75

### STEEL BASE ROLLS





## Adamite Rolls & Rings

These Rolls are special hyper-eutectoid steel rolls alloyed with nickel, Chromium & Molybdenum. The extra carbon and special alloys give extra resistance and strength.

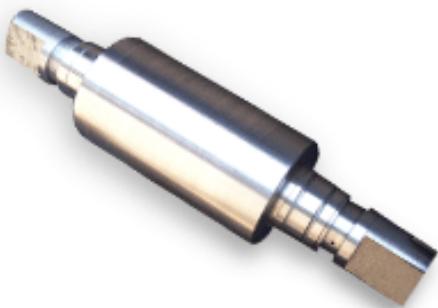
These rolls are statically cast and undergo a special high temperature heat treatment process of double annealing followed tempering cycles to give a micro structure consisting of fine pearlitic matrix with spherodised / broken carbide.

Application: These rolls are suitable for rolling medium and heavy sections. These rolls are also used for roughing stands for strips mills.

### Chemical Composition

Hardness <sup>0</sup>	C%	Mn%	Si%	Ni%	S%	P%	Cr%	Mo%	UTSkgf/m m.sq
40 - 45	1.2-1.6	0.4-0.8	0.65Max	.70Max	0.050 Max	0.050 Max	1.0-1.20	0.2-0.3	55/75
45 - 50	1.7-1.8	0.5-0.8	0.65Max	0.80-1.20	0.050 Max	0.050 Max	1.0-1.40	0.2-0.4	50/75
50 - 55	1.8-1.9	0.6-0.9	0.60Max	0.90-1.30	0.050 Max	0.050 Max	1.10-1.50	0.2-0.4	60/75

### CAST IRON BASE ROLLS





## Spehroidal Graphite Cast Iron Rolls & Rings

S.G Iron or ductile iron is considered as one of most versatile rolls material now days. It is produced small proportion of magnesium added to the melt as nickel-magnesium or alternative alloys, or pure magnesium. In S. G Iron Rolls, the free carbon takes the shape of spheroids or nodules, thereby eliminating the notch effect to flake graphite and improving upon the mechanical properties of cast iron.

- A) S. G Iron (Pearlitic Rolls)
- B) S. G Iron (Accicular)

**Application:** These rolls are suitable for heavier section where added strength and depth of hardness are required. These rolls used roughing and intermediate for slabbing and blooming mills. Roughing, Intermediate and finishing for rail and structural mills & Finishing for wire road.

### Chemical Composition

Grade & Hardness <sup>0</sup>	C%	Mn%	Si%	Ni%	S%	P%	Cr%	Mo%	UTSkgf/mm.sq
SG-Pearlitic 50-55 <sup>0</sup>	3.0-3.5	0.4-0.7	1.5-2.2	1.30-1.80	0.050 Max	0.020 Max	0.5 Max	0.40 Max	50/60
SG-Pearlitic 55-65 <sup>0</sup>	3.0-3.5	0.4-0.7	1.5-2.0	1.60-2.20	0.050 Max	0.020 Max	0.5-0.70	0.40 Max	50/60
SG-Accicular 65-70 <sup>0</sup>	3.0-3.5	0.4-0.7	1.2-1.8	2.00-2.50	0.050 Max	0.020 Max	0.6-0.80	0.40-0.70	50/60
SG-Accicular 70-75 <sup>0</sup>	3.0-3.5	0.4-0.7	1.2-1.6	2.90-3.20	0.050 Max	0.020 Max	0.6-0.80	0.80-1.10	50/70

## STEAM FORGE HAMMRING





Forged Rounds Shafts, Step shafts & Endless Rings Etc.



BLACK FORGED ROLLS



M.S. BASE ROLLS

FORGED ROLLS





Forging where in the material is hammered according to the customers sizes & requirement is a process in which the ingot is heated in the furnace & then forged. The forging process help in cohesiveness and strength by elongation of the grain structure, which result in material having much higher load bearing capacities and compare to casted material. Heat treatment is done in normalizing / annealing furnace and forging are ultrasonically tested thereafter. We have a single piece up to 7000 kg. in plain carbon steel. These rolls are available in primarily in Forged M.S Rolls, Forged EN-8, EN-9, EN-19, EN-24, EN-31 and EN-42 rolls. Our forged rolls are available with groove cutting, bearing Size, ready to use on your conditions. Apart From rolls we offer forged product range of forged Spindle, Rings, Round Shafts, Stepped Shafts and Blanks, Etc.

Application; these Forged Rolls are basically used for rolling purpose in industries where grinder, structural & TMT Manufacturing.

### Chemical Composition

Hardness	C	Mn	Si	S	P	Cr	Ni	Mo
EN – 8	.35 - .45	.60 - 1.00	.10 - .35	.050 MAX	.050 MAX	-	-	-
EN – 9	.50 - .60	.50 - .80	.05 - .35	.040 MAX	.040 MAX	-	-	-
EN – 15	.30 - .40	1.30 - 1.70	.10 - .35	.040 MAX	.040 MAX	-	-	-
EN – 19	.35 - .45	.50 - .80	.10 - .35	.040	.040	.90 - 1.40	-	.20 - .40
EN – 24	.35 - .45	.45 - .70	.10 - .35	.040	.040	.90 - 1.40	1.30 - 1.80	.20 - .40
EN – 25	.27 - .35	.50 - .70	.10 - .35	.040	.040	.50 - .80	2.30 - 2.80	.40 - .70
EN – 31	.90 - 1.20	.30 - .75	.10 - .35	.040	.040	1.00 - 1.60	-	-
EN – 42	30 - 40	.70 - .85	.55 - .75	.10 - .40	0.04	0.04	-	-

## ROLLING MILL MACHINERY

### FLY WHEEL

C.I or Steel Casted  
Capacity up to 20" Dia  
Weighing up to 20M.T.



### REDUCTION GEARS

we have available of Double Helical Gears.  
gears are made from high quality steel  
As per customer requirement.

9001:2008 CERTIFIED COMPANY

### GEAR CUPLING

Made from tested EN-9 Steel  
fully flexible to absorb Eccentricity  
Silent in running & complete size range.





## REDUCTION GEAR BOX

Available Single, Double & Multi stage reduction gear box as per Requirement, Gear Box For 100HP to 4000 HP, Design to dampen Vibrations, Works efficiently at peak Load, Amyl rated bearings, Splash lubrication system and dust proof.

## PINION STAND

Available 3-Hi & 2Hi Pinion Stands in stress relieved steel fabrication body. Having sufficient lubrication system and dust proof, Case hardened & Ground helical Gears, Main gear from casted tested En Steel. Ranging between 4" PCD to 30" PCD.

## MILL STAND

Available in C.I Casted, M.S Casted & Steel Fabrication Compact & simple design ensures quick roll change Specification: 3-Hi & 2Hi Stands & Control fix fiber type

## STRAIGHTENING MACHINE

Available straightening Machine offered by us is of high quality Chill Rolls, S. G Iron Rolls & Adamite Rolls, We have available in 130mm rolls centers to 600mm rolls centers, number of rolls can be 10/8 and are suitable for all types of sections. Having sufficient lubrication System and dust proof.

## MISSION

We entered this segment with the mission of making available excellent quality rolls with complete assurance of unmatched performance.

## MANUFACTURING PROCESS

**“Dynamic Rolls”** is the pioneer in India for manufacturing Cast Iron Chilled Rolls by centrifugal spin casting process using the double pour technique. This processing is unique in India and gives fine grain and increases strength of rolls. The microstructure of the rolls working surface consists of cementite,



fedeburite and fine dispersion partite. Our rolls are fitted with En-8, En-9 and MS Steel shafts. Put its step forward in rolls manufacturing industry in the year 1975.

**Mr. Shaukat Ali** is the Managing Director of the company with vast experience in the industry. Over the last 39 years the process has been developed at our foundry and rolls of highest quality standards are manufactured and supplied to satisfied customers all over India.

## OUR INFRASTRUCTURE

We are backed with the robust infrastructural base that comprises technically advanced manufacturing unit, we have a full-flagged Laboratory comprising all the analytical equipments required to determine the right quality & composition of raw materials. All furnace additions are duly analyses and pre-treated here. We have a team of dedicated engineers, workers and other professionals for looking after the various processes and meeting the exact needs of the clients.

## HUMAN RESOURCE

We believed thoroughly in the paramount importance of "The Man behind the machine." It is the qualified, visionary technocrats who put their experience, knowledge & theoretical and practical development into the production process in our modern foundry. With our commitment to highest quality and ability to technical excellence, we know that the choice of metal and composition of rolls are dependent on application, and hence we thrive constantly to make sure that they are continuously updated in accordance with the latest development.

## QUALITY CONTROL

The Process Control and Quality Control standard procedures are followed right from the procurement of Raw Material to the Dispatch of Finish Product stage with the help of a well experienced and dedicated team.

**Complete facility of testing the Chemical composition of Raw material and the total arrangement for testing the samples by direct reading Spectrometer, Physical testing of the Finished products such as Tensile Testing, Impact Testing, Metallographic inspection such as Micro Structure, Inclusion Rating, Grain size etc.**