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PRECIS e XCELLENCE

AN ISO 9001 : 2008 CERTIFIED COMPANY



Chenille Machine

Spares

INTRODUCTION

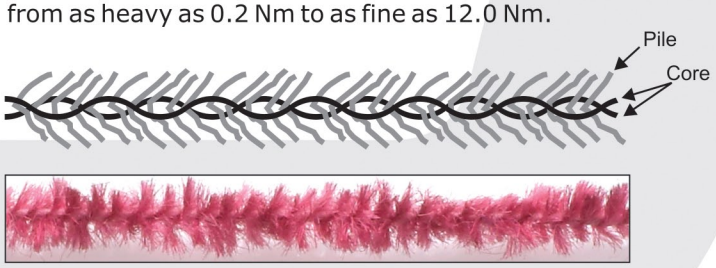
PRIME ENGINEERS is a Conglomerate Company since the 1985 in Diesel Engine spares. We are the leader and rapidly emerging company of spares for Chenille (Textile Ind.) and Offset printing machines since 2003. PRIME ENGINEERS is the epitome of best quality products and supply chain management.

Our research and development team follows a systematic approach to develop a new products listening to and collaborating with our customers, generating ideas for new products, services, developing the right designs and engineering approach with marketing, sales and customer service support.

We give our best technological solution for developing products like various 3D designing software for various functions, it gives us an analytical results of the products so, we can optimize and analyze result data and changed that product dimensions before manufacturing.

CHENILLE YARN

Chenille yarn consists of a cut pile which may be made of a variety of fibers helically disposed around the two axial threads which secure it. The short lengths are called the pile and the highly twisted yarns are called the core yarn. Chenille yarn can be made in many different sizes, ranging from as heavy as 0.2 Nm to as fine as 12.0 Nm.



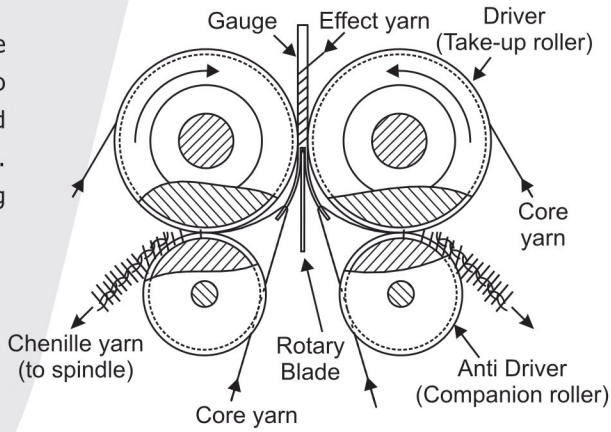


Figure - 01

On each side (Figure-01) of the cutting blade there are two core yarns, which may be either singles or two-fold yarns. One core yarn is guided by the driver while the other is guided by the anti driver. The driver is pressed against the profiled guide and intermeshes with the anti driver, allowing the two core yarns to trap the pile created by the effect yarn in between them, at right angles to the core yarn axis. The two core yarns are twisted together, usually by a ring spindle at the lower part of the machine, to produce the final yarn.

FACTORS AFFECTING THE PROPERTIES OF YARNS

- **Yarn count of the core and pile yarn (meter/gram)**
- **Core and effect yarn material**
- **Flyer speed (turns/minute)**

  Flyer speed affect the pile density. Higher flyer speed will increase the pile density and lower flyer speed will decrease the pile density.
- **Pile length (mm)**

  Determined by the size of the caliper. Longer pile in chenille yarn will offer greater resistance to being pulled out and will also take longer to wear off.
- **Retraction value (Per Cent, %)**

  Retraction value is defined as the length of yarn is reduced because of twisting core yarns.
- **The turns of twist (turns/meter)**

  The twist inserted in the yarn can be determined from the spindle speed and the production speed by using the following formula.

t = **N/V** where,

t = the turns of twist per unit length of yarn (turns/meter)

N = spindle speed (turns/minute)

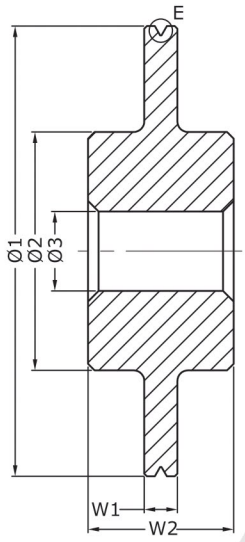
V = production speed (meter/minute)

The use of higher twist level in the chenille yarn, in order to offer greater resistance against removal of the effect yarn.

DRIVER

The function of driver is that knitting the effect yarn with the core yarn by knurling (Cut diamond shape over the periphery of driver). High wear resistance material is use for driver. Our R&D team develops a special manufacturing method which is enable to achieve the size of thickness (W1) under 10µm (Micron) tolerance. "Special Coat" gave its wonderful appearance, weather proof and homogeneous color. Relative motion between driver and anti driver toughness is very essential for longlife, So that we incorporate hardness process.We can also develop customize size.



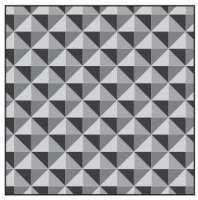


DETAIL E

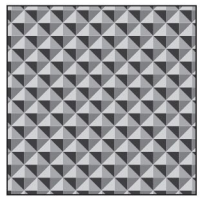
All dimensions are in Milimeter

DRIVER CHART								
W1	2.5	3	4	5	6	8	11	12
W2	11	11	11	11	11	11	11	12
Ø1	34	34	34	34	34	34	34	34
Ø2	18	18	18	18	18	18	-	-
Ø3 (H6 Tolerance)	6 or 8	6 or 8	6	6	6	6	6	6
KNURLING TYPE	A, B	A, B	C	C	C	C	C	C

KNURLING TYPE



A



B



C

PRODUCT FEATURES

- Max. driving efficiency of cut piles
- Max. working efficiency in optic clearing process
- Min. cut & pile mistakes
- High wearlife of driver

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ANTI DRIVER

Anti driver for rotary blade machine from best quality & proper harden steel material. Hardness process is as same as driver for smooth relative motion between them. Made a "Special Coat" for heat resistance and long life. Dimensions are relative to Driver. We can also develop customize size.

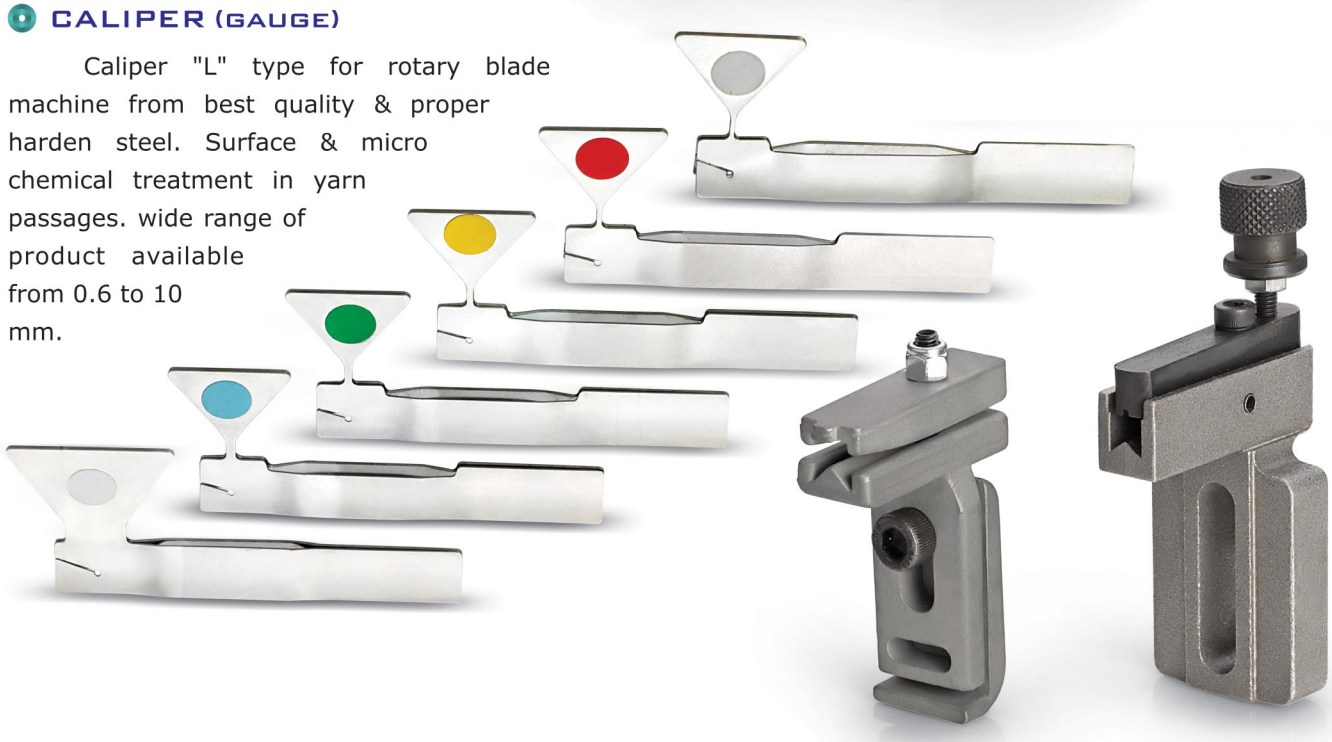
ANTIDRIVER AVAILABLE IN

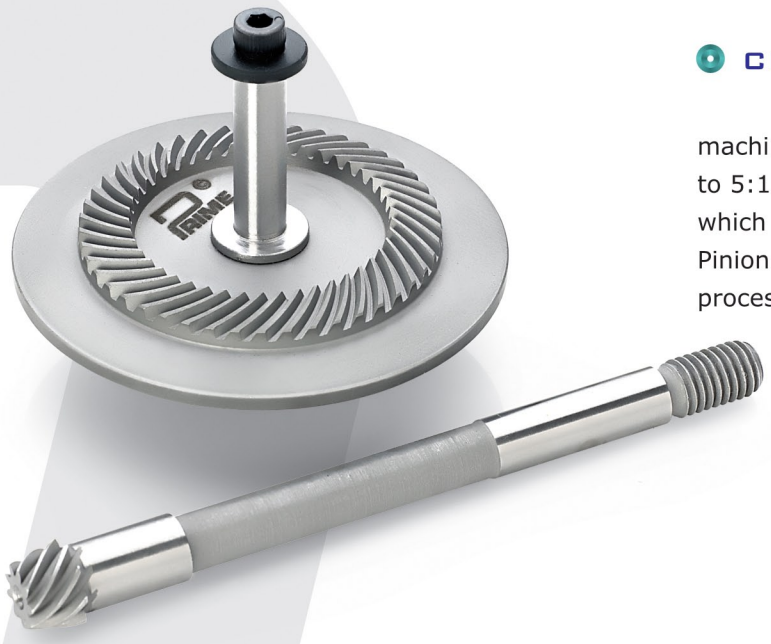
- Single Nos. bearing
- Double Nos. bearing
- Phosphorus bronze bush



CALIPER (GAUGE)

Caliper "L" type for rotary blade machine from best quality & proper harden steel. Surface & micro chemical treatment in yarn passages. wide range of product available from 0.6 to 10 mm.





CROWN GEAR & PINION

Crown Gear & Pinion (suitable for Italian machine) is used for reduce the RPM of Rotary Blade up to 5:1 speed ratio. Teeth generated by Gleason method which is very popular for spiral bevel gear. Crown gear & Pinion are made from high carbon steel. Special hardness process is required to enhance beam strength of tooth, friction resistance and sustainability. After the teeth grinding "Special Coat" is necessary for heat resistance, wear resistance and long life.



ROTARY BLADE

Rotary blade is a vital part of the chenille machine. Blade is continuously cut the effect yarn around 300 to 400 RPM and rub the surface of caliper. Due to friction between the blade and the caliper both parts are badly wear out, so that we negate this maleficences by choosing the proper material (M2 HSS Erasteel from Sweden) and highly precise grinding process is to enhance appearance, cutting edge sharpness and tight tolerance.

All dimensions are in Milimeter

ROTARY BLADE CHART		
O.D.	**I.D.**	**THICKNESS**
100	22	0.60,0.80,1.00

Product Features

- Clean & Clear pile cut
- Optimum life of blade
- Low caliper consumption
- Higher grind ability



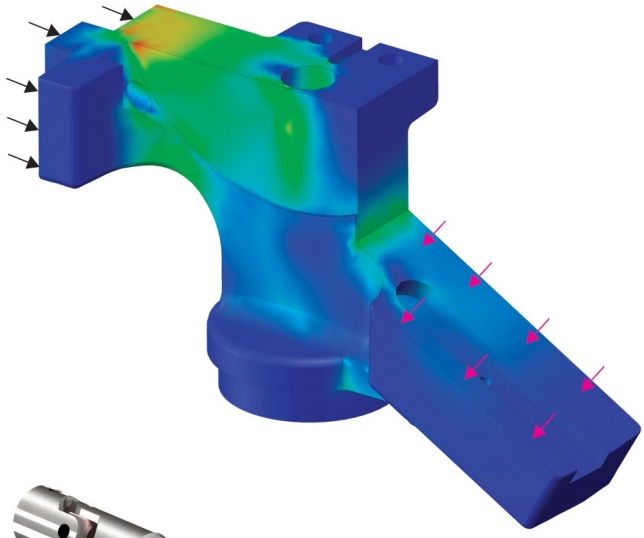
SHARPENING WHEEL (CBN WHEEL)

Flared cup diamond resin bond sharpening wheel is advance in technology which provides faster sharpening of HSS M2 Blade efficiently and reduce the idle time as well as at lowest possible cost.

CUTTER HEAD FOR ROTARY BLADE MACHINE

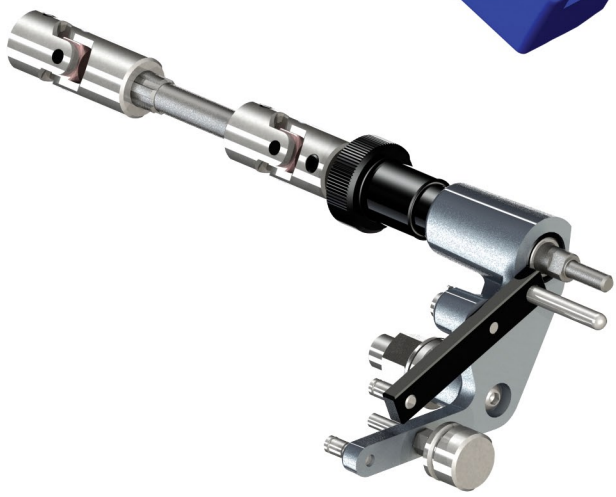
LM 6 Aluminum material is used for cutter head body (suitable for Italian Machine). Pressure Die Casting is preferable for such type of highly precise part because it's reduce the possibility of cavities and other casting defects. Bevel gear and pinion require perfect center and intersect at 90° axis for smooth tooth mashing. To fulfill this requirement we have done machining on 4-axis VMC machine in only one setup.

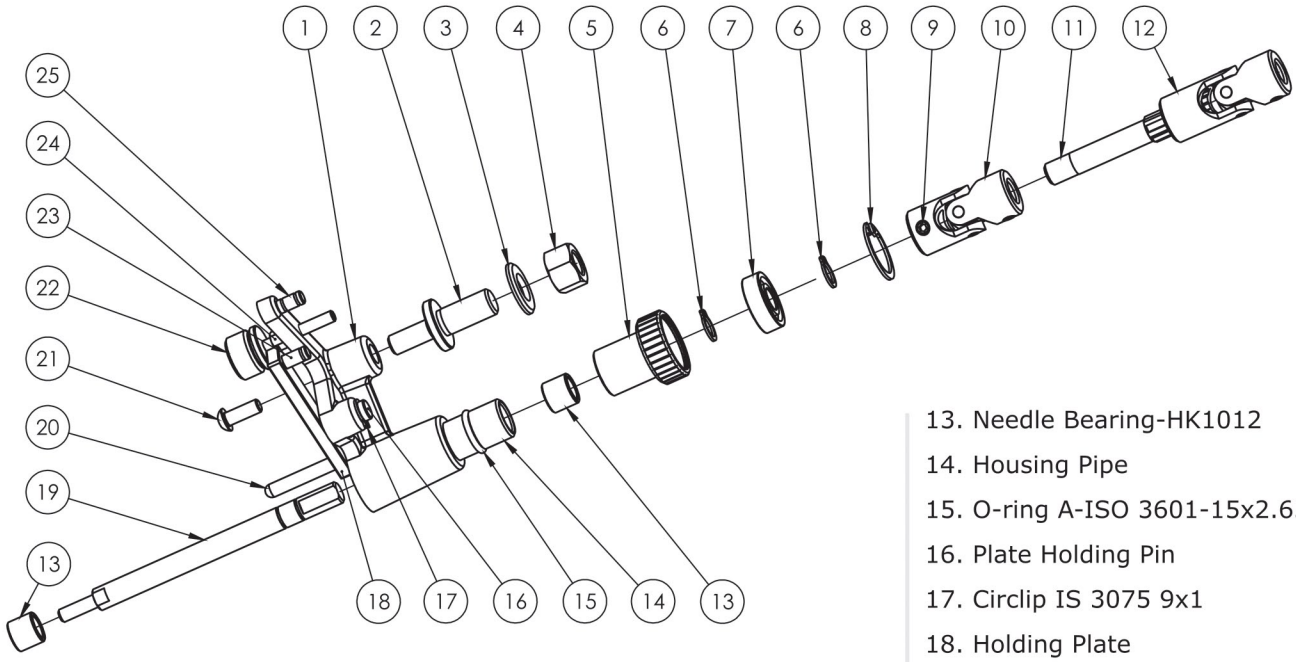
Before manufacturing of any machine parts we are prepare the computer 3D model to analyze how much Von Mises stress and deformation took place at which nodal point.



ARMS FOR ROTARY BLADE MACHINE

LM 6 Aluminum material is used for cast the LEFT & RIGHT Arm Body. Machining has been done on 3 – Axis VMC m/c so it gives preciseness, within tolerance and no need of any type of finishing process.





01. Lever
02. Arm Holding Pin
03. Washer ISO 7090-12
04. Hexagon Nut ISO-4034-M12
05. Housing Knob
06. Circlip DIN 471-10x1
07. SKF-6000 2RS
08. Circlip DIN 472-26 x 1.2
09. Grub Screw ISO 4029-M6 x 5
10. Universal Joint without Spline
11. Spline Shaft
12. Universal Joint with Spline
13. Needle Bearing-HK1012
14. Housing Pipe
15. O-ring A-ISO 3601-15x2.65
16. Plate Holding Pin
17. Circlip IS 3075 9x1
18. Holding Plate
19. Driver Shaft
20. Anti Driver Shaft
21. Button Head ISO 7380-M6x16
22. Threaded Knob
23. Holding Pin-1
24. Hexagon Nut ISO-4034-M5
25. Holding Pin-2



COMPANY STRATEGY ON TOTAL QUALITY MANAGEMENT

PRIME ENGINEERS pursues a policy of responding to the long-term requirements of our customers. We aim to generate added value for customers and to support their success.

Our integrated management system supports and promotes the continuous improvement of products and services. The selection and monitoring of top-class raw materials together with innovative ideas leads to excellent products with long service lives.

Processes generate results, and thus also their quality. PRIME ENGINEERS uses a process-oriented management system. Where necessary, processes are continuously improved to enhance quality and to achieve an optimal cost-benefit ratio.

We have sense of responsibility, Nurtured its groth. It is a matter of deep satisfaction that the company has successfully surmounted innumerable impediments and emerged as one of india's top chenille machine spares manufacturer. We have always believed in that our progress is closely interlinked with our customers.

We extend our gratitude to one and all and an open to all your valuable suggestions, comments etc.

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PRIME ENGINEERS

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