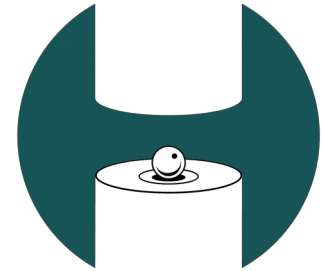


Manufacturer of High Precision Capsule Molds / PinBars

HALLMARK
ADVANCED TECHNOLOGY PVT. LTD.



HALLMARK
ADVANCED TECHNOLOGY PVT. LTD.

INDIA



HALLMARK specializes in making of Precision Molds and Tools

We began in 1984, with making Tungsten Carbide Tools for the Automobile Industry for forging critical Bearing components such as

- Steel Balls
- Rollers
- Caging Rivet
- Miniature Fasteners



HALLMARK regularly exports to world giants like -

Schaeffler Group (INA Bearings), Germany
SKF Bearings, USA
FAG Bearings, Hungary
AKS plants in Japan, Indonesia, Poland, UK & USA
Tsubaki Hoover, Italy
KGM, Germany
KRS, Germany
Valette and Gaurand Industrie plants in France & Tunisia
NRB Bearings Ltd plants in India & Thailand
General Bearings, China



HALLMARK

INDIA



HALLMARK's latest achievement is
it's highly successful

Pinbar (Capsule Molds)

for Empty Hard Capsule Shells.

.....

- Special Hardened, Plated and Highly Polished Pins requiring minimal Lubricant for making cDPI, (capsules for Dry Powder Inhalation), CT (Clear & transparent) and Veg (HPMC) Capsules
- Separate Designs for GELATIN & HPMC / VEG Capsules
- Special high volume design for Low Density formulations, to avoid Pop-ups



HALLMARK
INDUSTRIAL SOLUTIONS LTD





HALLMARK PINBARS

Sizes # 000, 00, 0, 1, 2, 3,
4, 5 and others

Bar Design: 5, 6, 7, 9 Bars
and others as per your
drawing

**HALLMARK Pinbars for
automatic capsule machine
are in two types:**

High Precision Pinbars with
Pins in SS304 &
Base Bars in SS410

Special Hard Plated Precision Pinbars with
Pins in Hardened SS420 & Plated.
Base Bars in SS410



HALLMARK Strengths

.....

HALLMARK core team consists of well qualified people holding Masters from IIT Mumbai, Bachelors of Technology, MBA's, Doctors, etc

MANUFACTURING Experience

40+ years of experience in EXPORTING Super Precision Tools for Critical applications.

MAN Power

200+ work force

MANUFACTURING Area

60,000+ Square feet of manufacturing setup

FACTORY Locations

4 Locations in Mumbai, the centre of the Commercial Capital of INDIA



Main Features of HALLMARK PINBARS



THE HARDNESS OF Pin

Minimum 32
HRC. And 65+
HRC in Hard
Plated Pinbars

DIAMETER OF Pin

Ensured within
+/- 5 microns

THE MOLD BASE Bar

Vacuum heat
treated to 28 +/- 2
HRC with special
German technology
to ensure uniform
hardness

FIRMNESS & Flexibility

The Bar undergoes
rigorous " bend test "
to ensure required
firmness and
flexibility. This is
important to prevent
fractures in face of
accidents

ROLLING

The lock grooves
on the Pins are
made by 'Rolling'
method, which
imparts mirror
finish to the
groove and
increase in
hardness

RIVETING

Special riveting
technique that
prevents loosening
of pins over years
of use

- Special interference fit and lock groove design for an extremely strong yet easy slide-in fit of the cap & body during final locking



ENSURING Precision

- Development of CNC SPMs in-house, for higher Precision and Consistency.
- Surface finish values better than Ra0.10
- Continuous online inspection of all critical dimensions during manufacturing, ensuring 100% inspection and Six Sigma accuracy / precision.

Parameter measured : Gauge Plan Diameter
Operation: Final Dimension
Acceptance Criteria : $C_p > 1$, $\sigma < 0.002mm$
Type of measurement: 100 percent inspection

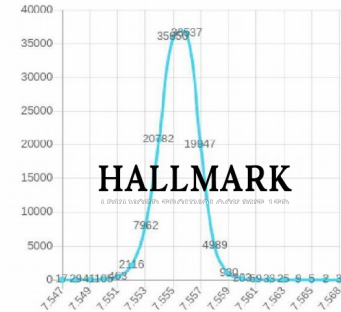
Process Capability

μ from Actual Reading

Readings :130207
 μ : 7.5554 (7.568 , 7.547)
 σ : 0.0013972
 C_{pk} : Min(1.097 , 1.288)

μ from Specification

Readings :130207
 μ : 7.555
 σ : 0.0013972
 C_p : 1.193



Select Parameters

Period: All On: From: To:

USL: LSL: Work Order: Measure Type:

Operation:

Remark : Pass
Checked by: HKA



ENSURING Precision

All critical dimensions are within Six Sigma for main parameters like

- Mean (μ)
- Standard Deviation (σ)
- Process Capability (Cpk)

Parameter measured : First Groove Diameter
Operation: Final Dimension
Acceptance Criteria : $C_p > 1, \sigma < 0.003\text{mm}$
Type of measurement: Production Sample Inspection

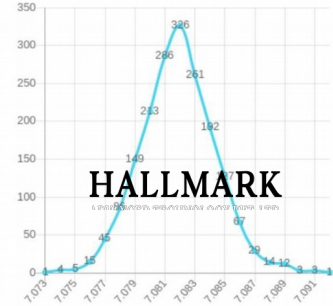
Process Capability

μ from Actual Reading

Readings :1839
 μ : 7.0819 (7.092 , 7.073)
 σ : 0.0025191
Cpk: Min(1.072 , 1.575)

μ from Specification

Readings :1839
 μ : 7.08
 σ : 0.0025191
Cp: 1.323



Select Parameters

Period: All On: From: To:

USL: LSL: Work Order: Measure Type:

Operation:

Remark : Pass
Checked by: HKA





EXPERT DESIGN **Team**

- Special Hardened, Plated and Highly Polished Pins requiring minimal Lubricant for making cDPI, (capsules for Dry Powder Inhalation), CT (Clear & transparent) and Veg (HPMC) Capsules
- Separate Designs for GELATIN & HPMC / VEG Capsules
- Special high volume design for Low Density formulations, to avoid Pop-ups



ADVANTAGES OF Special Hard Plated Precision pinbars

.....

- Excellent wear resistance resulting in years of scratch free performance of the Pins. Highly useful feature for making Clear & Transparent capsules
- Minimal occurrence of lubricant related issues like oil bubbles, star end, etc
- Plating Adhesion quality is ensured through strict conformance to ASTM-B-571 Standard



CONTINUAL Improvement

Dedicated R&D Division working continuously for improvement in all stages of manufacturing targeting,

ZERO rejection due to Pinbars defects

ZERO case of Tight / Non-separation or Loose Capsules in the entire lot

ZERO Pop-up issues

ZERO machine downtime

ZERO customer rejections due to Pinbar defects

100% alignment of Cap and Body parts, ensuring perfect sealing of the two parts after Capsule filling.

100% acceptance of the Capsules on High Speed Capsule Filling machines

100% Customer satisfaction





DESIGNING PINBARS for Special Capsules

.....

Dry powder inhalation (DPI) is turning out to be a major and most preferred drug delivery Technology for the treatment of respiratory diseases. Capsule based DPI provides a uniform dose in an effective, non-invasive and simple way to deliver medication via the pulmonary route.

Capsule inner wall surface largely depends on surface finish of the pinbars.

Capsules for cDPI have to meet stringent design requirements. Effective dose delivery depends on factors which are governed by close control of capsule dimensions and surface finish.

Capsule Internal Surface:

The capsule inner wall surface is never entirely flat and formulation powder occupies little surface pores on the inside of the capsule wall. This makes it more complicated for the drug to exit the capsule. Additionally, if the lubricant content is high, adhesion between the capsule and powder occurs, reducing the process efficiency. The nature and quantity of lubricant that remains in the capsule will modify the capsule inner surface properties and affect the capsule aerosolization performance.

Plating reduces the amount of lubrication used, it also effects the surface topography of the plated surface in a way that allows it to retain a microfilm of lubrication during Capsule formation. This gives a unique advantage when making Veg, HPMC and cDPI capsules.



LOCATION Works

MUMBAI, INDIA

Works 1:
(Pin Bar Division)
4/9, M.I.D.C, Saravali, Kalyan Bhiwandi Indl. Area,
Bhiwandi, Thane - 421311, INDIA

Works 2:
(Precision Dies & Molds Division)
K-2, Ansa Industrial Estate, Saki Vihar Road,
Mumbai-400072, INDIA

Works 3:
(Assembly & Finishing Division)
J-3, Ansa Industrial Estate, Saki Vihar Road,
Mumbai-400072, INDIA

Works 4:
(Tungsten Carbide Factory):
R-543, M.I.D.C., TTC Industrial Area, Rabale,
Navi Mumbai, Thane-400701, INDIA



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CHINA

Contact person:
Mr. Daniel Tu
Ms. Juan Yi



OUR Customers



Pharmaceutical
Industry



EVA GROW MEDICAPS PVT LTD



OUR Customers



Automobile Bearing
Industry



NHB Ball & Roller Ltd.



an SKF Group company



RECOGNITION For Excellence

.....

- GOVERNMENT OF INDIA



Certificate of Export Excellence

Awarded To Messers *Hallmark Engineers,*.....

Mumbai.....

in recognition of achieving highest export performance during 2001-2002 amongst the

SSI exporters in the panel *Steel Forgings*..-

all types.....

.....

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.....

K. S. Chadha
REGIONAL CHAIRMAN
ENGINEERING EXPORT PROMOTION COUNCIL
WESTERN REGION

Date : 2nd February, 2005





HALLMARK
ADVANCED TECHNOLOGY PVT. LTD.

HALLMARK Designing Team brings you **WORLD CLASS PINBARS FOR HARD CAPSULES**

4/9, M.I.D.C, Saravali, Kalyan Bhiwandi Indl. Area, Bhiwandi, Thane – 421311, INDIA |

Tel : +91 22 28476331, 66926671 | Fax: +91 22 28475842 | Email: hallmark@hallmark-engineers.com