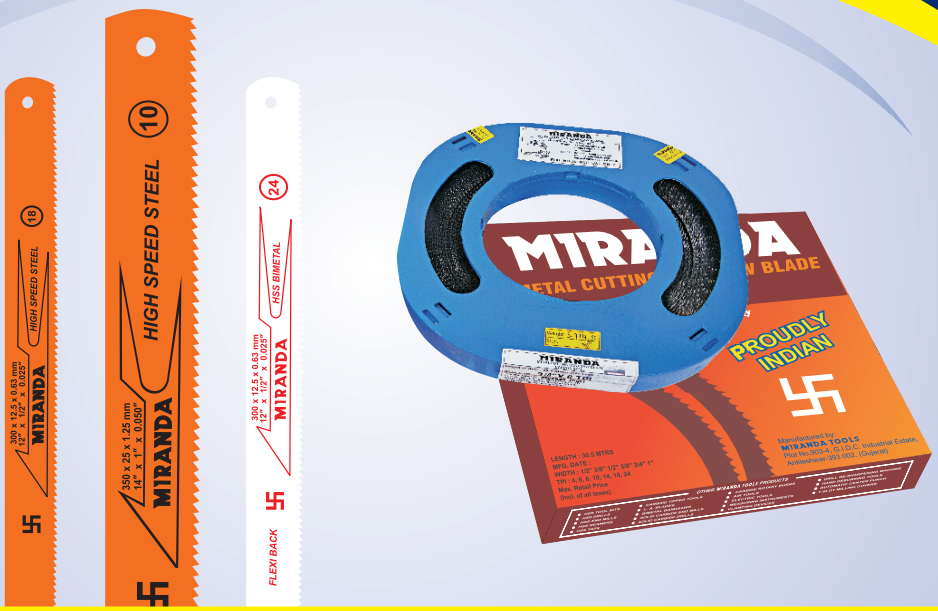
# HAND & POWER HACKSAWS
# METAL CUTTING BANDSAW BLADES




## PRODUCT RANGE - HAND HACKSAWS

| | | |
|---|---|---|
| Range | Length | : 250 mm & 300 mm |
| | Width | : 12.5 mm |
| | Thickness | : 0.63 mm |
| Grade of Steel | HSS & Bimetal | |
| TPI | 14, 18, 24 & 32 | |

## PRODUCT RANGE - POWER HACKSAWS

| | | |
|---|---|---|
| Range | Length | : 300 mm - 900 mm |
| | Width | : 25.0 mm, 32.0 mm, 40.0 mm, 50.0 mm |
| | Thickness | : 1.25 mm, 1.6 mm, 2.0 mm, 2.5 mm |
| Grade of Steel | HSS & Bimetal | |
| TPI | 4, 6, 10 & 14 | |

## PRODUCT RANGE - MCBB

| | | |
|---|---|---|
| Range | Length | : 30.5 mtr |
| | Width | : 6.5 mm, 10.0 mm, 13.0 mm, 16.0 mm 19.0 mm |
| | Thickness | : 0.63 mm |
| Grade of Steel | Carbon Steel | |
| TPI | 4, 6, 8, 10, 12, 14, 18 & 24 | |

## APPLICATIONS

- Steel
- Stainless Steel
- Cast Iron
- Brass
- Aluminium
- Non - ferrous metal
- Copper
- PVC & Plastic

## INDUSTRIES

- General Engineering & Service Industry
- Railways & Infrastructure
- Aerospace & Defense
- Heavy Engineering
- Machine Tools
- Electronics & Electrical

# METAL & POWER HACKSAWS - ISO : 2336 Part 1 & 2

## HAND HACKSAWS : Range

| | | |
|---|---|---|
| Metric | : | Length 250 mm & 300 mm<br>Width 12.5 mm<br>Thickness 0.63 mm |
| Inches | : | Length 10" & 12"<br>Width ½"<br>Gauge 23G |
| Choice of T.P.I. | : | 14, 18, 24, 32 |
| Grade | : | HSS, BIMETAL |

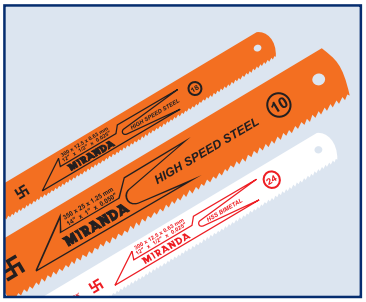
## POWER HACKSAWS : Range

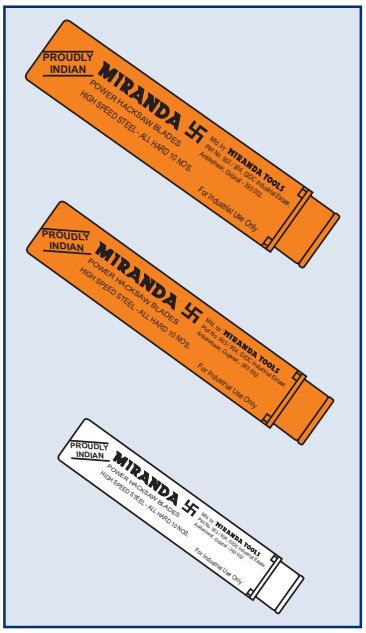
| | | |
|---|---|---|
| Metric | : | Length 300 mm & 900 mm<br>Width 25 mm, 32mm, 40mm, 50mm<br>Thickness 1.25mm, 1.60mm, 2.00mm, 2.5mm |
| Inches | : | Length 12" & 36"<br>Width 1", 1.1/4", 1.1/2", 2"<br>Gauge 18G, 16G, 14G, 12G |
| Choice of T.P.I. | : | 4, 6, 10, 14 |
| Grade | : | HSS, BIMETAL |

Range of **MIRANDA** brand Hacksaws manufactured by **MIRANDA TOOLS**

| HAND HACKSAW BLADES - HSS ALL HARD | | | HSS - BIMETAL | |
|---|---|---|---|---|
| Nominal Size | | TPI | TPI | |
| Inches | Millimeters | | Constant Pitch | Variable Pitch |
| 12 x ½ x 0.025 (23 G) | 300 x 12.5 x 0.63 | 14 18 24 32 | 14 18 24 32 | |
| 10 x ½ x 0.025 (23 G) | 250 x 12.5 x 0.63 | 18 24 | | |

| HAND HACKSAW BLADES - HSS ALL HARD | | | HSS - BIMETAL | |
|---|---|---|---|---|
| Nominal Size | | TPI | TPI | |
| Inches | Millimeters | | Constant Pitch | Variable Pitch |
| 12 x 1 x 0.050 (18 G) | 300 x 25 x 1.25 | 10 14 | 10 14 | 6/10 |
| 14 x 1 x 0.050 (18 G) | 350 x 25 x 1.25 | 6 10 14 | 6 10 14 | 6/10 |
| 16 x 1 x 0.050 (18 G) | 400 x 25 x 1.25 | 10 14 | 10 14 | 6/10 |
| 17 x 1 x 0.050 (18 G) | 425 x 25 x 1.25 | 10 14 | 10 14 | - |
| 18 x 1 x 0.050 (18 G) | 450 x 25 x 1.25 | 10 14 | 10 14 | 6/10 |
| 14 x 1¼ x 0.062 (16 G) | 350 x 32 x 1.60 | 6 10 | 6 10 | 4/6 5/8 6/10 |
| 16 x 1¼ x 0.062 (16 G) | 400 x 32 x 1.60 | 6 10 | 6 10 | 4/6 5/8 6/10 |
| 17 x 1¼ x 0.062 (16 G) | 425 x 32 x 1.60 | 6 10 | 6 10 | 4/6 5/8 |
| 18 x 1¼ x 0.062 (16 G) | 450 x 32 x 1.60 | 6 10 | 6 10 | 4/6 5/8 6/10 |
| 18 x 1¼ x 0.080 (14 G) | 450 x 32 x 2.00 | 4 6 10 | - | - |
| 18 x 1¼ x 0.062 (16 G) | 450 x 40 x 1.60 | 6 10 | - | - |
| 18 x 1¼ x 0.080 (14 G) | 450 x 40 x 2.00 | 4 6 10 | 6 | 3/4 4/6 5/8 6/10 |
| 20 x 1½ x 0.080 (14 G) | 500 x 40 x 2.00 | 4 6 10 | 6 | - |
| 21 x 1½ x 0.080 (14 G) | 525 x 40 x 2.00 | 4 6 10 | 4 6 | 3/4 4/6 5/8 |
| 22 x 1½ x 0.080 (14 G) | 550 x 40 x 2.00 | 4 6 | 4 6 | 3/4 4/6 5/8 |
| 24 x 1½ x 0.080 (14 G) | 600 x 40 x 2.00 | 4 6 10 | 4 6 | 3/4 4/6 5/8 |
| 24 x 1½ x 0.100 (12 G) | 600 x 40 x 2.50 | 4 6 | - | - |
| 28 x 1½ x 0.100 (12 G) | 700 x 40 x 2.50 | 4 6 | - | - |
| 30 x 1½ x 0.100 (12 G) | 750 x 40 x 2.50 | 4 6 | - | - |
| 24 x 2 x 0.080 (14 G) | 600 x 50 x 2.00 | 4 6 | - | - |
| 24 x 2 x 0.100 (12 G) | 600 x 40 x 2.50 | 4 6 | 4 6 | 3/4 4/6 |
| 28 x 2 x 0.100 (12 G) | 700 x 50 x 2.50 | 4 6 | 4 6 | - |
| 30 x 2 x 0.100 (12 G) | 750 x 50 x 2.50 | 4 6 | 4 6 | - |
| 32 x 2 x 0.100 (12 G) | 800 x 50 x 2.50 | 4 6 | 4 6 | 3/4 4/6 |
| 36 x 2 x 0.100 (12 G) | 900 x 5 x 2.50 | 4 6 | 4 6 | 3/4 4/6 |
| 32 x 2½ x 0.100 (12 G) | 800 x 55 x 2.50 | - | 4 | - |




**Proper selection of Blade**

In selecting a blade always follow the "Three Teeth Rule" which requires that during cutting, minimum of three teeth be continuously in contact with the work piece.

For Thin Sections : Use a fine teeth blade or else metal wedges up between teeth and strip them off. If the section is too thin to follow the "Three Teeth Rule", use a very light steady stroke.

For Thick Sections: Use a coarse teeth blade with heavy pressure. This gives greater pressure per tooth and consequently a deeper cut. The larger space between teeth gives ample chip clearance.

For Hand Sections: Special care must be taken when cutting harder materials. It is better in terms of blade life to use finer tooth blades, with light pressure and slower speed of cutting or else heat is built up rapidly on the cutting edge causing the teeth to soften even in the case of High Speed Steel blades. Faster speeds are permissible if a coolant is used.

| PACKING | |
|---|---|
| Hand Hacksaw | 100 Nos. per box |
| Power Hacksaw | |
| 12 x 1 to 18 x 1 | 10 Nos. per box |
| 14 x 1¼ to 18 x 1¼ | 10 Nos. per box |
| 18 x 1½ | 10 Nos. per box |
| 21 x 1½ to 24 x 1½ | 5 Nos. per box |
| 24 x 2 | 5 Nos. per box |

All dimensions in inches

## Blade Selection Chart

| Material | Teeth Per Inch | | | Strokes/ min. | Force (kg.) | Coolant |
|---|---|---|---|---|---|---|
| | Below 1" | Below 2" | Above 1" | | | |
| Aluminium Alloy | 10 | 6 | 4 | 120/130 | 25 | Yes |
| Brass | 10 | 6 | 4 | 100/120 | 25 | Yes |
| Bronze | 10 | 6 | 4 | 70/90 | 55 | No |
| Cast Iron | 10 | 6 | 4 | 70/90 | 55 | No |
| Copper | 14 | 10 | 6 | 70/90 | 55 | No |
| Mild Steel Tube | 14 | 10 | 6 | 120/130 | 25 | Yes |
| Steel Channels | 14 | 10 | 6 | 100/120 | 25 | Yes |
| Steel Rails | 14 | 10 | 6 | 100/120 | 25 | Yes |
| High Tensile CI | 14 | 10 | 6 | 70/90 | 55 | No |
| HSS & Tool Steel | 14 | 10 | 6 | 70/75 | 65 | Yes |
| HCHCr, Ti Alloy | 14 | 10 | 6 | 40 | 65 | No |

## Care to be taken for better cutting.

- Mount of blade on the frame in the direction indicated on it.
- Apply the correct tension to the blade.
- Ensure that pressure is applied during cutting stroke & is off during the return to avoid "dragging" and consequent dulling of the teeth.
- Do not start cutting on sharp edges as this violates the "Three Teeth rule".
- Start the cut at a slight angle and light pressure, gradually increasing the pressure as more teeth come in contact with the job.
- For extremely thin sections, clamp the section between two pieces of wood & cut as a whole.

## Trouble Shooting Chart

| Problem | Cause | Ready |
|---|---|---|
| Teeth ripping | - Violation of the "Three Teeth Rule"<br>- Excessive Pressure | - Choose proper TPI as per blade selection chart<br>- Reduce the Pressure |
| Blade Breakage | - Blade in contact with work material before cutting<br>- Starting the cut in a slot previously cut.<br><br>- Excessive feed.<br>- Worn out blade | - Start the machine with blade above the work piece<br>- Start a fresh cut with a new blade or turn the work piece over and saw to meet the old cut.<br>- Reduce the pressure<br>- Replace the blade |
| Pin Hole Breakage | - Excessive tension<br>- Improper mounting<br>- Wrong choice of Blade<br>- Absence of coolant<br>- Hard spots. | - Reduce Tension<br>- Ensure proper clamping of the blade against the frame<br>- Choose the blade as per chart<br>- Use Coolant as per chart<br>- Reduce speed & increase pressure |
| Taper Cutting | - Inadequate tension<br>- Worn out blade<br>- Very hard spot<br>- Excessive pressure<br>- Worn out frame | - Adjust tension<br>- Replace blade<br>- Start a new cut<br>- Reduce pressure<br>- Repair frame |