YSS Advanced Plastic Mold Steel

**CENA™-G / CENA™-V**

CENA-G and CENA-V, its materials improved both rust resistivity and mirror polishability. Pre-hardened hardness 35-41 HRC, Surface hardness up to 1000HV by nitriding. Its properties will reduce maintenance man-hours and prevent issues during mold manufacturing.

CENA-G and CENA-V, both has improve good rust resistivity.

CENA-G : General grade
CENA-V : Valuable grade

Selectable two grade materials, differ in mirror polishability.

CENA-G and CENA-V, both has improved rust resistivity compared to conventional pre-hardened P20 or P21

Expected effects:
- Easy cavity maintenance.
- Fewer rust-preventive agent.
- Prevent water-cooling hole clogging.

CENA-G is suitable for general surface polishing.
CENA-V is suitable for high grade surface polishing.

Its characteristics are easily to glossy finish after polishing and prevent surface waviness come out.

<table>
<thead>
<tr>
<th>Rust Resistivity and Mirror Polishability</th>
</tr>
</thead>
</table>

*Comparison materials are equivalent to below, P20 (304-RQ): HI-HM™ 7, P20+N (404-RQ): HI-HM™ MACG, P21 (404-RQ): HI-PM™ PRO,

Rust Resistance

*moisture resistance test*

| Test piece: 10mm × 20mm × 40mm, #800 finish Condition: temperature 80°C, humidity 80%, 2h hold |

Mirror Polishability

*Interference filter comparison of mirror polished surface*

- 6μm diamond Polishing (#3000)
- 3μm diamond Polishing (#2000)

<Attention>
- The characteristics, photos, charts, ranking and evaluation of this catalog are representative values by our test data, it does not guarantee the quality of the product. This catalog and its contents are subject to change without notice.
CENA-G and CENA-V both have high impact toughness and its characteristics hard to crack.

Expect effects:
- Reduce breakage of thin ribs during machining.

CENA-G and CENA-V both have improved stress corrosion cracking resistance compared to 420F improvement steel.

Expected effect:
- Prevent water-cooling hole clogging.

CENA-G and CENA-V both have high toughness, improves crack resistance from welding build-up.

These mold steel can be utilized in a variety of applications, including home appliances, automotive parts, and bathroom fixtures.

**Toughness**

![Toughness Chart]

*Comparison are equivalent to our products below:
P21 (30HRC) - Hi-PM™ Y, P20+N (34HRC) - Hi-PM™ MAGIC, P1 (42H0RC) - Hi-PM™ PRO.*

**Resistance to Stress Corrosion Cracking**

![Resistance Chart]

*Comparison are equivalent to our products below:
420F: Hi-PM™ 38 (49HRC); conventional steel: CENA™ 1 (40HRC).*

**Characteristics Comparison**

<table>
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<tr>
<th></th>
<th>Hardness (HRC)</th>
<th>Mirror polishability</th>
<th>Rust resistance</th>
<th>Toughness</th>
<th>Weldability</th>
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<td>CENA-G</td>
<td>35 - 41</td>
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<td>A</td>
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<td>CENA-V</td>
<td>35 - 41</td>
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<tr>
<td>Hi-PM™ Y</td>
<td>29 - 33</td>
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<td>D</td>
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<tr>
<td>Hi-PM™ MAGIC</td>
<td>37 - 41</td>
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<td>D</td>
<td>B</td>
<td>A</td>
</tr>
<tr>
<td>Hi-PM™ PRO</td>
<td>37 - 41</td>
<td>A</td>
<td>D</td>
<td>C</td>
<td>B</td>
</tr>
</tbody>
</table>

*Ranking: A+++Best, B+++Ordinary, D+++Poor (Remark) Please refer above as general concept.*
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Notes about safety
Steel is heavy. Please execute the safety measures to prevent falling or collapse of cargo or sandwiching during transportation or warehousing.
Please ensure the safety of workers using the rig and various protective equipment and follow the applicable laws and ministerial ordinance, ordinances, guidelines, etc., when sawing, cutting, heat treatment, polishing or when using a mould machine, parts, or tools.