

## Normas de empleo habitual

### *NAS - National Aerospace Standard - Unified*

| <b>Part Number</b> | <b>Head Style</b> | <b>Material</b>    | <b>Plating</b>   | <b>Head treat</b> | <b>Specification</b>        |
|--------------------|-------------------|--------------------|------------------|-------------------|-----------------------------|
| NAS333-NAS340      | 100' Flush        | Alloy Steel        | Cadmium          | 16OKSI-18OKSI     | MIL-B-87114                 |
| NAS464             | Hex               | Alloy Steel        | Cadmium          | 16OKSI-18OKSI     | NAS498                      |
| NAS517             | 100' Flush        | Alloy Steel        | Cadmium          | 16OKSI-18OKSI     | MIL-S-7839 Except as noted  |
| NAS563-NAS572      | Hex               | Alloy Steel        | Cadmium          | 16OKSI-1 80KSI    | MIL-B~6812                  |
| NAS563-NAS572      | Hex               | A286               | Passivate        | 16OKSI-1 80KSI    | MIL-B~6812                  |
| NAS624-NAS644      | 12-Point          | Alloy Steel        | Fluoborate       | 18OKSI-20OKSI     | NAS496                      |
| NAS624-NAS644      | 12-Point          | Alloy Steel        | Cadmium          | 18OKSI-20OKSI     | NAS496                      |
| NAS673-NAS678      | Hex               | Titanium<br>6AL-4V | None             | 16OKSI Min        | NAS621                      |
| NAS1003-NAS1020    | Hex               | A286               | Passivate        | 14OKSI Min        | AMS7478                     |
| NAS1223-NAS1235    | Hex               | Alloy Steel        | Cadmium          | 16OKSI-18OKSI     | MIL-B-7898                  |
| NAS1223-NAS1235    | Hex               | A286               | None             | 14OKSI Min.       | AMS7478                     |
| NAS1261 -NAS1265   | Hex               | Titanium<br>6AL-4V | None             | 16OKSI Min        | NAS621                      |
| NAS1 266-NAS1 270  | Hex               | Titanium<br>6AL-4V | None             | 16OKSI Min.       | NAS621                      |
| NAS1297            | Hex               | Alloy Steel        | Cadmium          | 125KSI-145KSI     | MIL-B-6812                  |
| NAS1 303-NAS1 320  | Hex               | Alloy Steel        | Cadmium          | 16OKSI-18OKSI     | MIL~B-7838                  |
| NAS2803-NAS2810    | 100' Flush        | Alloy Steel        | Cadmium          | 18OKSI-20OKSI     | MIL-B-87114 Except as noted |
| NAS2903-NAS2920    | Hex               | Alloy Steel        | Cadmium          | 16OKSI-18OKSI     | MIL-B-7838 Except as note   |
| NAS3003-NAS3020    | Hex               | Alloy Steel        | Cadmium          | 16OKSI-1 80KSI    | MIL-B-7838                  |
| NAS6203-NAS6220    | Hex               | Alloy Steel        | Cadmium          | 16OKSI-18OKSI     | NAS4002                     |
| NAS6203-NAS6220    | Hex               | Alloy Steel        | Chromium         | 16OKSI-18OKSI     | NAS4002                     |
| NAS6303-NAS6320    | Hex               | A286               | Passivate        | 16OKSI-18OKSI     | NAS4003                     |
| NAS6303-NAS6320    | Hex               | A286               | Cadmium          | 16OKSI-18OKSI     | NAS4003                     |
| NAS6303-NAS6320    | Hex               | A286               | Chromium         | 16OKSI-18OKSI     | NAS4003                     |
| NAS6403-NAS6420    | Hex               | Titanium           | None             | 16OKSI-18OKSI     | NAS4004                     |
| NAS6403-NAS6420    | Hex               | Titanium           | Cadmium          | 16OKSI-18OKSI     | NAS4004                     |
| NAS6403-NAS6420    | Hex               | Titanium           | Aluminum Coating | 16OKSI-18OKSI     | NAS4004                     |
| NAS6603-NAS6620    | Hex               | Alloy Steel        | Cadmium          | 16OKSI-18OKSI     | NAS4002                     |
| NAS6703-NAS6720    | Hex               | A286               | Passivate        | 16OKSI Min.       | NAS4003                     |
| NAS6703-NAS6720    | Hex               | A286               | Cadmium          | 16OKSI Min.       | NAS4003                     |
| NAS6703-NAS6720    | Hex               | A286               | Chromium         | 16OKSI Min.       | NAS4003                     |
| NAS6803-NAS6820    | Hex               | Titanium           | None             | 16OKSI-18OKSI     | NAS4004 Except as noted     |
| NAS6803-NAS6820    | Hex               | Titanium           | Cadmium          | 16OKSI-18OKSI     | NAS4004 Except as noted     |
| NAS6803-NAS6820    | Hex               | Titanium           | Aluminum Coating | 16OKSI-18OKSI     | NAS4004 Except as noted     |
|                    |                   |                    |                  |                   |                             |

## Military Standards

### *AN - Air Force/Navy Aeronautical Standards*

| <b>Part Number</b> | <b>Head Style</b> | <b>Material</b>           | <b>Plating</b>     | <b>Head treat</b> | <b>Specification</b> |
|--------------------|-------------------|---------------------------|--------------------|-------------------|----------------------|
| AN3-AN20           | Hex               | Alloy Steel               | Cadmium            | HRC26-32          | MIL-B-6812           |
| AN3-AN20           | Hex               | Corrosion Resistant Steel | Passivate          | 115 KSI Min.      | MIL-B-6812           |
| AN3-AN20           | Hex               | Aluminum Alloy            | Anodize            | 62 KSI Min.       | MIL-B-6812           |
| An173-AN186        | Hex               | Alloy Steel               | Cadmium            | HRC26-32          | MIL-B-6812           |
| An173-AN186        | Hex               | Corrosion Resistant Steel | Passivate          | 115 KSI Min.      | MIL-B-6812           |
| An173-AN186        | Hex               | Aluminum Alloy            | Anodize            | 62 KSI Min.       | MIL-B-6812           |
| MS9060-MS9066      | 12-Point          | A286                      | Clean              | 130 KSI Min.      | AMS7478              |
| MS9088-MS9094      | 12-Point          | Alloy Steel               | Cadmium            | HRC26-32          | AMS7452              |
| MS9146-MS91 52     | 12-Point          | Alloy Steel               | Cadmium            | HRC26-32          | AMS7452              |
| MS91 57-MS9163     | 12-Point          | Alloy Steel               | Black Oxide        | HRC26-32          | AMS7452              |
| M59169-MS9175      | 12~Point          | Alloy Steel               | Black Oxide        | HRC26-32          | AMS7452              |
| MS91 83-MS9186     | 12-Point          | Alloy Steel               | Cadmium            | HRC26-32          | AMS7452              |
| MS9187-MS9188      | 12-Point          | A286                      | Clean              | 130 KSI Min.      | AMS7478              |
| MS91 89-MS91 90    | 12-Point          | Alloy Steel               | Black Oxide        | HRC26-32          | AMS7452              |
| MS9191 -MS9192     | 12-Point          | Alloy Steel               | Black Oxide        | HRC26-32          | AMS7452              |
| MS9554-MS9562      | 12-Point          | A286                      | Clean              | 130 KSI Min.      | AMS7477              |
| MS9573-MS9571      | 12-Point          | A286                      | Clean              | 130 KSI Min.      | AMS7477              |
| MS9572-MS9580      | 12-Point          | A286                      | Silver             | 130 KSI Min.      | AMS7477              |
| MS9680-MS9683      | 12-Point          | Alloy Steel               | Cadmium            | HRC26-32          | AMS7452              |
| MS9694-MS9702      | 12-Point          | Waspaloy                  | Clean              | 175 KSI Min.      | AMS7471              |
| MS9703-MS9711      | 12-Point          | Waspaloy                  | Clean              | 175 KSI Min.      | AMS7471              |
| MS9712-MS9720      | 12-Point          | Waspaloy                  | Silver             | 175 KSI Min.      | AMS7471              |
| MS9730-MS9738      | 12-Point          | 17-4PH                    | Passivate<br>Clean | 140 KSI Min.      | AMS7474              |
| MS9739-MS9747      | 12-Point          | 17-4PH                    | Passivate<br>Clean | 140 KSI Min.      | AMS7474              |
| MS9748-MS9756      | 12-Point          | Titanium                  | None               | 160 KSI Min       | AMS7461              |
| MS9883-MS9891      | 12-Point          | Green Ascaloy             | Clean              | 140 KSI Min.      | AMS7470              |
| MS9892-MS9900      | 12-Point          | Green Ascaloy             | Clean              | 140 KSI Min.      | AMS7470              |
| MS21250            | 12-Point          | Alloy Steel               | Cadmium            | 180 KSI-200 KSI   | MIL-B-8831           |
| MS21277-MS21285    | 12-Point          | A286                      | Passivate          | 130 KSI Min.      | AMS7478              |
| MS21286-MS21294    | 12-Point          | A286                      | Passivate          | 130 KSI Min       | AMS7478              |
| MS21296            | Spline Drive      | H 11 Steel                | Vacuum<br>Cadmium  | 260 KSI Min       | MIL-B-8907           |
| MS21297            | Spline Drive      | H 11 Steel                | Vacuum<br>Cadmium  | 260 KSI Min       | MIL-B-8906           |

**NA - National Aerospace Standard\* - Metric**

| <b>Part Number</b> | <b>Head Style</b> | <b>Material</b> | <b>Plating</b>    | <b>Head treat</b>     | <b>Specification</b>   |
|--------------------|-------------------|-----------------|-------------------|-----------------------|------------------------|
| NA0035             | Pan               | Alloy Steel     | Cadmium           | 1100 MPa Min.         | NA0008                 |
| NA0036             | Hex               | Alloy Steel     | Cadmium           | 1100 MPa Min.         | NA0008                 |
| NA0037             | Hex               | Titanium        | None              | 1100 MPa Min.         | NA0007                 |
| NA0038             | 100' Flush        | Alloy Steel     | Cadmium           | 660 MPa Min.<br>Shear | NA0008                 |
| NA0039             | 100' Flush        | Titanium        | None              | 660 MPa Min.<br>Shear | NA0007                 |
| NA0042             | 100' Flush        | A286            | Passivate         | 660 MPa Min.<br>Shear | NA0026                 |
| NA0045             | Hex               | A286            | Passivate         | 1100 MPa Min.         | NA0026                 |
| NA0046             | Pan               | A286            | Passivate         | 1100 MPa Min.         | NA0026                 |
| NA0047             | Pan               | Titanium        | None              | 1100 MPa Min.         | NA0007                 |
| NA0058             | Spline Drive      | Alloy Steel     | Cadmium           | 1250 MPa Min.         | NA0057                 |
| NA0059             | Spline Drive      | A286            | Passivate         | 1250 MPa Min.         | NA0026 Except as noted |
| NA0060             | 100' Flush        | Alloy Steel     | Cadmium           | 750 MPa Min.<br>Shear | NA0057                 |
| NA0062             | Spline Drive      | Alloy Steel     | Vacuum<br>Cadmium | 1550 MPa Min.         | NA0071                 |
| NA0063             | Spline Drive      | Alloy Steel     | Vacuum<br>Cadmium | 1800 MPa Min.         | NA0072                 |
| NA0067             | Hex               | A286            | Passivate         | 1100 MPa Min.         | NA0026 Except as noted |
| NA0068             | Pan               | A286            | Passivate         | 1100 MPa Min.         | NA0026 Except as noted |
| NA0069             | Socket Head       | A286            | Passivate         | 1100 MPa Min.         | NA0026 Except as noted |

\*Generally, MA standards are intended to apply to commercial as well as military applications. Currently they are only found in military programs.

**MA - SAE Standard\* Metric**

| <b>Part Number</b> | <b>Head Style</b>     | <b>Material</b> | <b>Plating</b> | <b>Head treat</b> | <b>Specification</b> |
|--------------------|-----------------------|-----------------|----------------|-------------------|----------------------|
| MA3286             | Hex                   | A286            | Passivate      | 26-35HRC          | MA3374               |
| MA3287             | Spline Drive          | A286            | Passivate      | 26-35HRC          | MA3374               |
| MA3304             | Hex                   | Alloy Steel     | Cadmium        | 26-32HRC          | MA3376               |
| MA3338             | Hex                   | INCO718         | Passivate      | 40-46HRC          | MA3377               |
| MA3339             | Spline Drive          | Alloy Steel     | Cadmium        | 26-32HRC          | MA3376               |
| MA3340             | Spline Drive          | INCO718         | Passivate      | 40-46HRC          | MA3377               |
| MA3341             | Spline Drive          | A286            | Passivate      | 26-35HRC          | MA3374               |
| MA3342             | Spline Drive          | A286            | Passivate      | 26-35HRC          | MA3374               |
| MA3343             | Spline Drive          | INCO718         | Passivate      | 40~46HRC          | MA3377               |
| MA3347             | Hex                   | A286            | Passivate      | 26-35HRC          | MA3374               |
| MA3365             | Hex                   | A286            | Passivate      | 26-35HRC          | MA3374               |
| MA3366             | Spline Drive          | INCO718         | Passivate      | 40-46HRC          | MA3377               |
| MA3367             | Spline Drive          | Alloy Steel     | Cadmium        | 26-32HRC          | MA3376               |
| MA3368             | Spline Drive          | INCO718         | Passivate      | 40-46HRC          | MA3377               |
| MA3369             | Hex                   | INCO718         | Passivate      | 40-46HRC          | MA3377               |
| MA3398             | Hex                   | A286            | Passivate      | 26-35HRC          | MA3374               |
| MA3446             | Tee Head<br>Chamfered | Waspaloy        | Clean          | 34-44HRC          | MA3378               |
| MA3447             | Spline Drive          | INCO718         | Passivate      | 40-46HRC          | MA3377               |

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