

**True shape nesting software**

# **Astra S-Nesting**

**Administrator's Manual**

# Launching the program from the command line

## Command line keys

- **/parts:<path to a parts file>** - imports a list of parts from an XML file
- **/sheets:<path to a sheets file>** - imports a list of sheets from an XML file
- **/props:<path to a file with nesting group properties >** - imports CNG (concurrent nesting group) properties
- **/delete** – deletes XML files upon completion

## Command line example

```
/parts:"c:\Cad\Parts.xml" /sheets:"c:\Cad\Sheets.xml" /props:c:\Cad\Props.xml
```

# Export and import in the XML format

## 1. Import of parts data

### DTD of a parts data file

```
<!ELEMENT Parts (Part+)>
<!ELEMENT Part (#PCDATA)>
<!ATTLIST Part Thick CDATA #REQUIRED>
<!ATTLIST Part MType CDATA #IMPLIED>
<!ATTLIST Part MMark CDATA #REQUIRED>
<!ATTLIST Part MSupplier CDATA #IMPLIED>
<!ATTLIST Part MPrice CDATA #IMPLIED>
<!ATTLIST Part MDensity CDATA #IMPLIED>
<!ATTLIST Part Count CDATA #REQUIRED>
<!ATTLIST Part Drawing CDATA #IMPLIED>
<!ATTLIST Part Number CDATA #REQUIRED>
<!ATTLIST Part Time CDATA #REQUIRED>
<!ATTLIST Part Name CDATA #REQUIRED>
```

### Description of a parts data file

The **Parts** root element contains a set of **Part** elements. Each **Part** element corresponds to a part being imported.

### Attributes of a Part element

- **Thick** – part thickness
- **MType** – material type
- **MMark** – material name
- **MSupplier** – material supplier
- **MPrice** – material price
- **MDensity** – material density
- **Drawing** – name of a drawing this part belongs to
- **Number** – a unique part ID within a drawing
- **Count** – part quantity
- **Time** – part creation time (a 64-bit integer reflecting the number of seconds since 1970)
- **Name** – part name

The value of the **Part** element must contain a path to the layout in the DXF format containing this part

## A sample parts data file

```
<?xml version="1.0" encoding="utf-16" ?>
<Parts>
  <Part Thick="7" MType="Steel" MMark="A36" MSupplier="USA" MPrice="100" MDensity="30"
    Count="10" Drawing="Demo" Number="1" Time="1221209791"
    Name="Knee">D:\MyDocs\AstraShape\Temp\Part 01.dxf</Part>
  <Part Thick="7" MType="Steel" MMark="A36" MSupplier="USA" MPrice="100" MDensity="30"
    Count="10" Drawing="Demo" Number="2" Time="1221209791"
    Name="Console">D:\MyDocs\AstraShape\Temp\Part 02.dxf</Part>
</Parts>
```

## 2. Import of data by sheets

### DTD of a sheets data file

```
<!ELEMENT Sheets (Sheet+)>
<!ELEMENT Sheet EMPTY>

<!ATTLIST Sheet Thick CDATA #REQUIRED>

<!ATTLIST Sheet MType CDATA #IMPLIED>
<!ATTLIST Sheet MMark CDATA #REQUIRED>
<!ATTLIST Sheet MSupplier CDATA #IMPLIED>
<!ATTLIST Sheet MPrice CDATA #IMPLIED>
<!ATTLIST Sheet MDensity CDATA #IMPLIED>

<!ATTLIST Sheet Length CDATA #REQUIRED>
<!ATTLIST Sheet Width CDATA #REQUIRED>
<!ATTLIST Sheet Count CDATA #IMPLIED>
```

### Description of a sheets file

The **Sheets** root element contains a set of **Sheet** elements. Each **Sheet** element corresponds to a sheet being imported.

### Attributes of a Sheet element

- **Thick** – sheet thickness
- **MType** – material type
- **MMark** – material name
- **MSupplier** – material supplier
- **MPrice** – material price
- **MDensity** – material density
- **Length** – sheet length
- **Width** – sheet width
- **Count** – sheet quantity. If this parameter is not specified, the number of sheets will be unlimited.

### A sample sheets data file

```
<?xml version="1.0" encoding="utf-16" ?>
<Sheets>
  <Sheet Thick="7" MType="Steel" MMark="A36" MSupplier="USA" MPrice="100" MDensity="30"
    Length="8000" Width="4000" Count="10" />
</Sheets>
```

### 3. Import of CNG properties

#### DTD of a CNG properties file

```
<!ELEMENT Props (Gsr+)>

<!ELEMENT Gsr EMPTY>

<!ATTLIST Gsr Thick CDATA #REQUIRED>

<!ATTLIST Gsr MType CDATA #IMPLIED>
<!ATTLIST Gsr MMark CDATA #REQUIRED>
<!ATTLIST Gsr MSupplier CDATA #IMPLIED>

<!ATTLIST Gsr GapAuto CDATA #IMPLIED>
<!ATTLIST Gsr GapMin CDATA #IMPLIED>
<!ATTLIST Gsr GapSheetLength CDATA #IMPLIED>
<!ATTLIST Gsr GapSheetWidth CDATA #IMPLIED>
```

#### Description of a CNG properties file

The **Props** root element contains a set of **Gsr** elements. Each **Gsr** element corresponds to a concurrent nesting group (CNG).

#### Attributes of a Gsr element

- **Thick** – CNG parts thickness
- **MType** – material type
- **MMark** – material name
- **MSupplier** – material supplier
- **GapAuto** – distance between parts in the automatic nesting mode
- **GapMin** – distance between parts in the manual layout editing mode
- **GapSheetLength** – left and right sheet margins used in the nesting process
- **GapSheetWidth** – top and bottom sheet margins used in the nesting process

#### A sample CNG properties file

```
<?xml version="1.0" encoding="utf-16" ?>
<Props>
  <Gsr Thick="7" MType="Steel" MMark="A36" MSupplier="USA" GapAuto="10" GapMin="5"
    GapSheetLength="9" GapSheetWidth="8" />
</Props>
```

### 4. Export of layouts data

#### DTD of a layouts file

```
<!ELEMENT CAD (Sheet*)>

<!ATTLIST Sheet Thick CDATA #REQUIRED>

<!ATTLIST Sheet MType CDATA #IMPLIED>
<!ATTLIST Sheet MMark CDATA #REQUIRED>
<!ATTLIST Sheet MSupplier CDATA #IMPLIED>
<!ATTLIST Sheet MPrice CDATA #IMPLIED>
<!ATTLIST Sheet MDensity CDATA #IMPLIED>

<!ATTLIST Sheet Length CDATA #REQUIRED>
```

```

<!ATTLIST Sheet Width CDATA #REQUIRED>
<!ATTLIST Sheet Count CDATA #REQUIRED>

<!ATTLIST Sheet FileDXF CDATA #REQUIRED>

<!ELEMENT Sheet (Part*)>

<!ELEMENT Part EMPTY>

<!ATTLIST Part Drawing CDATA #IMPLIED>
<!ATTLIST Part Number CDATA #REQUIRED>
<!ATTLIST Part Count CDATA #REQUIRED>

```

## Description of a layouts file

Results are exported to **cad.xml**. To export data, use the **Export CAD** command in the **File** menu.

The **CAD** root element contains a set of **Sheet** elements. Each **Sheet** element corresponds to a layout sheet.

## Attributes of a Sheet element

- **Thick** - thickness
- **MType** – material type
- **MMark** – material name
- **MSupplier** – material supplier
- **MPrice** – material price
- **MDensity** – material density
- **Length** – sheet length
- **Width** – sheet width
- **Count** – quantity of sheets in a layout
- **FileDXF** – path to the DXF file containing layout geometry

Each **Sheet** element contains **Part** elements corresponding to parts on this layout.

## Attributes of a Part element included in a Sheet element

- **Drawing** - name of a design document (drawing) this part belongs to
- **Number** - a unique part ID within a layout
- **Count** - quantity of parts in a layout

## A sample layouts file

```

<?xml version="1.0" encoding="utf-16" ?>
<CAD>
  <Sheet Thick="7" MType="Steel" MMark="A36" MSupplier="USA" MPrice="100" MDensity="30"
    Length="8000" Width="2000" Count="1"
    FileDXF="D:\MyDocs\AstraShape\Temp\0001.dxf">
    <Part Drawing="Demo" Number="2" Count="10" />
    <Part Drawing="Demo" Number="1" Count="8" />
  </Sheet>
</CAD>

```