

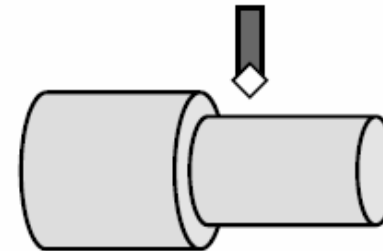
Other AP238 Operations: gridding (DiskCutting). ISO 14649:xx ?????

Turning Process Operations

STEP Tools, Inc.

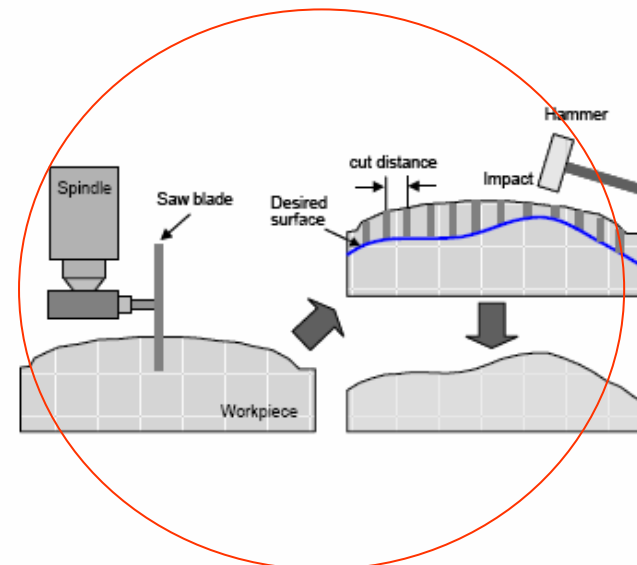
- **Turning Operations**

- Contouring, facing, grooving, threading and knurling.
- Roughing and finishing for each
- Set of strategies



- **Possible Future Operations**

- Work underway to describe operations for wire and sink EDM, contour cutting of wood and glass, grinding.
- Efforts in various stages of maturity.
- Will be added to AP-238 once the information requirements are mature.



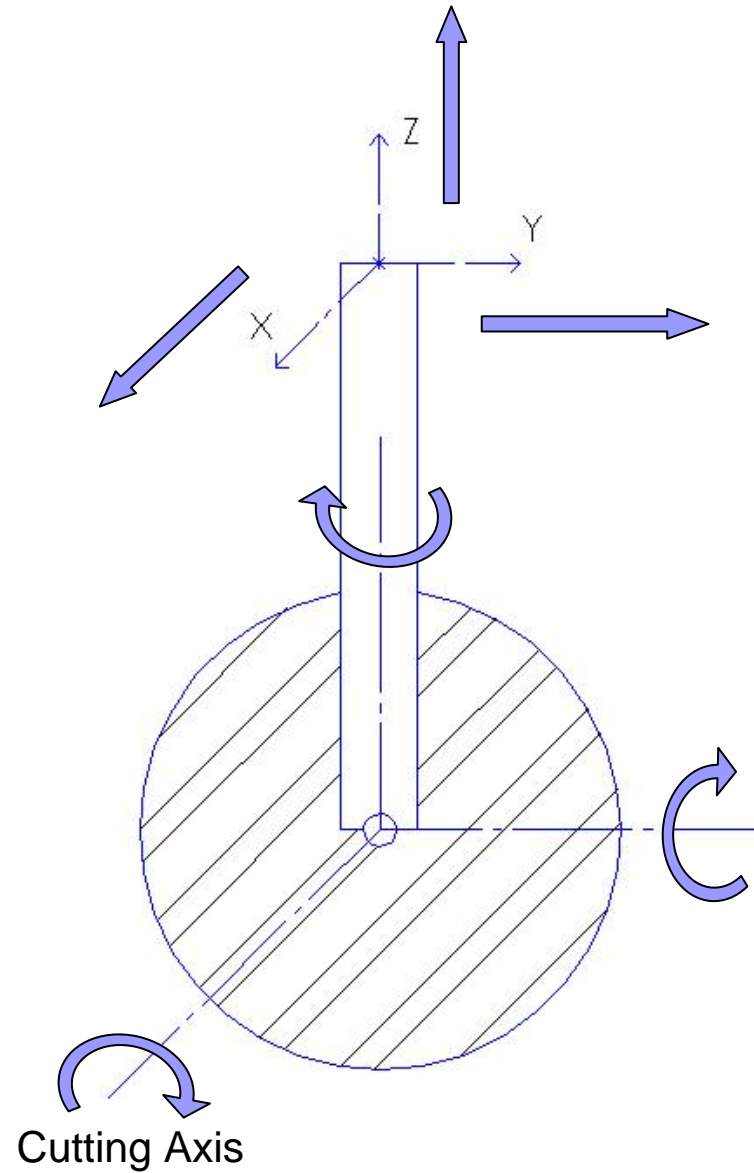
Machines

- 5 Degrees:

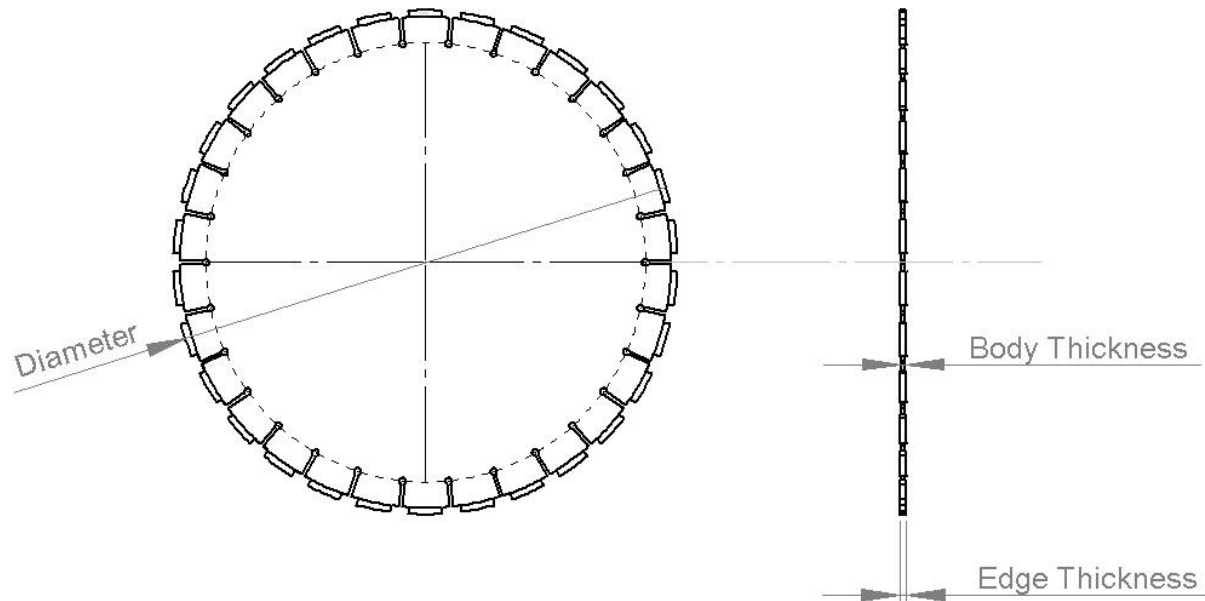
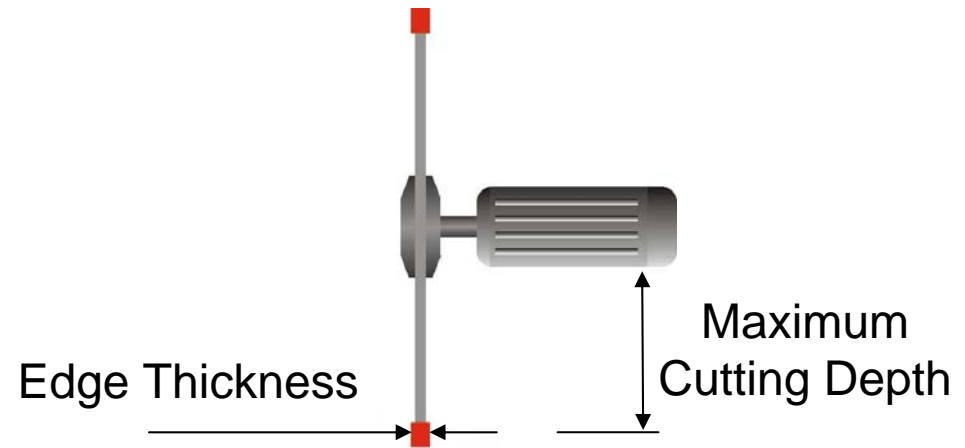


Machine

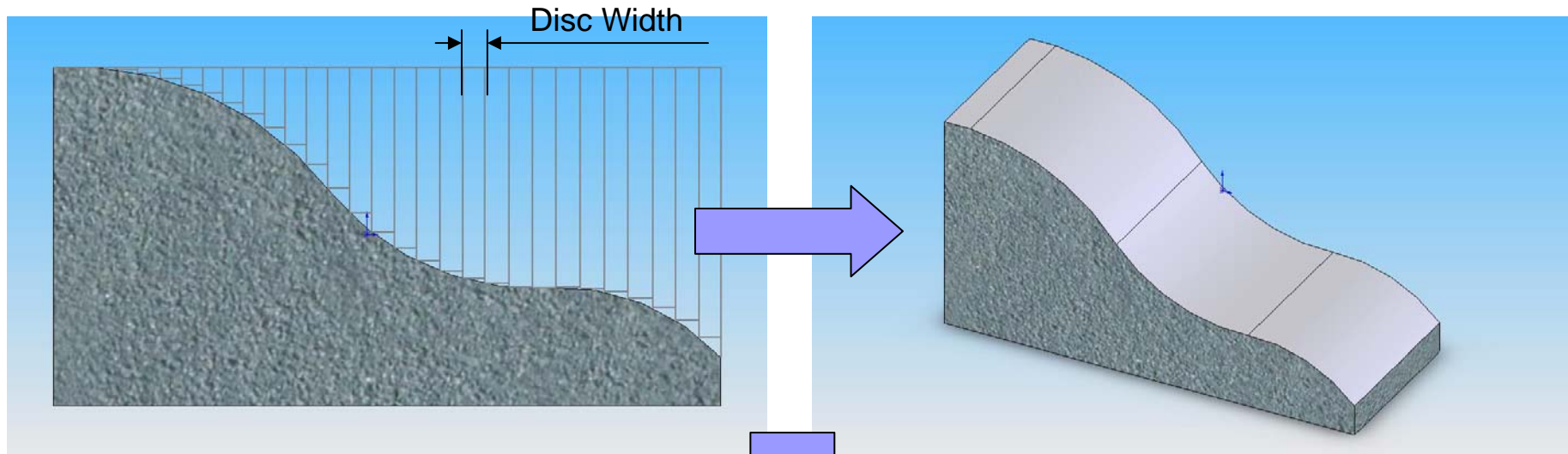
- 5 Degrees:



Disc



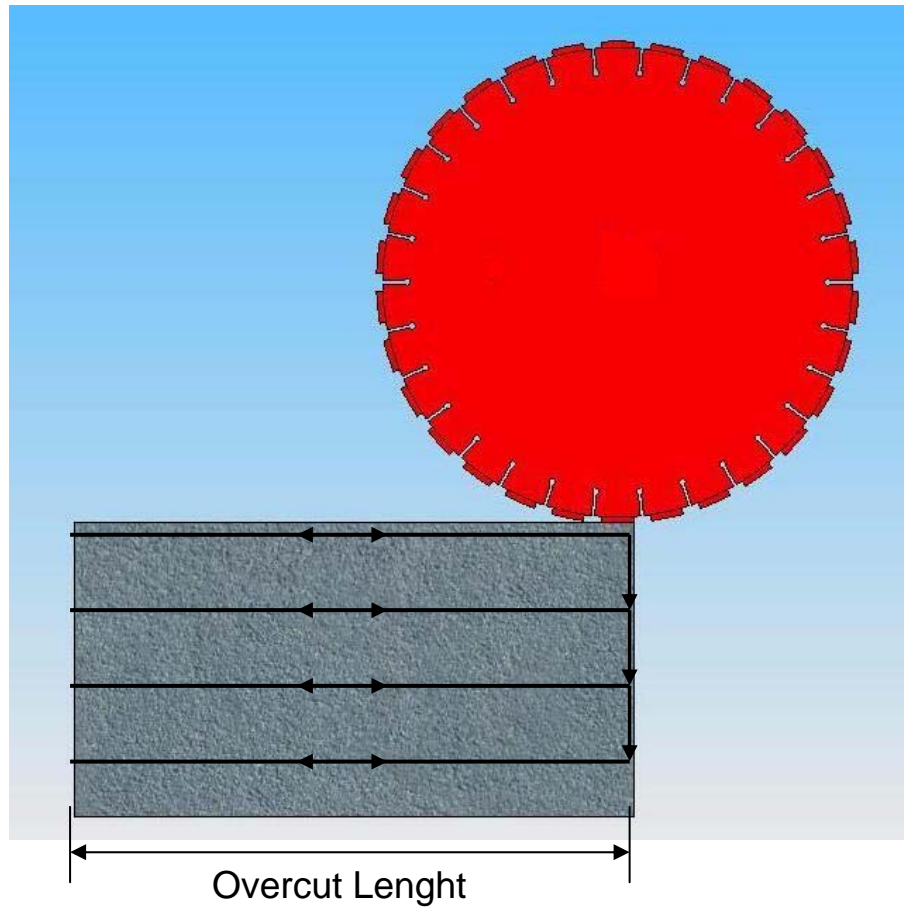
Cutting Operations



Cutting Operations

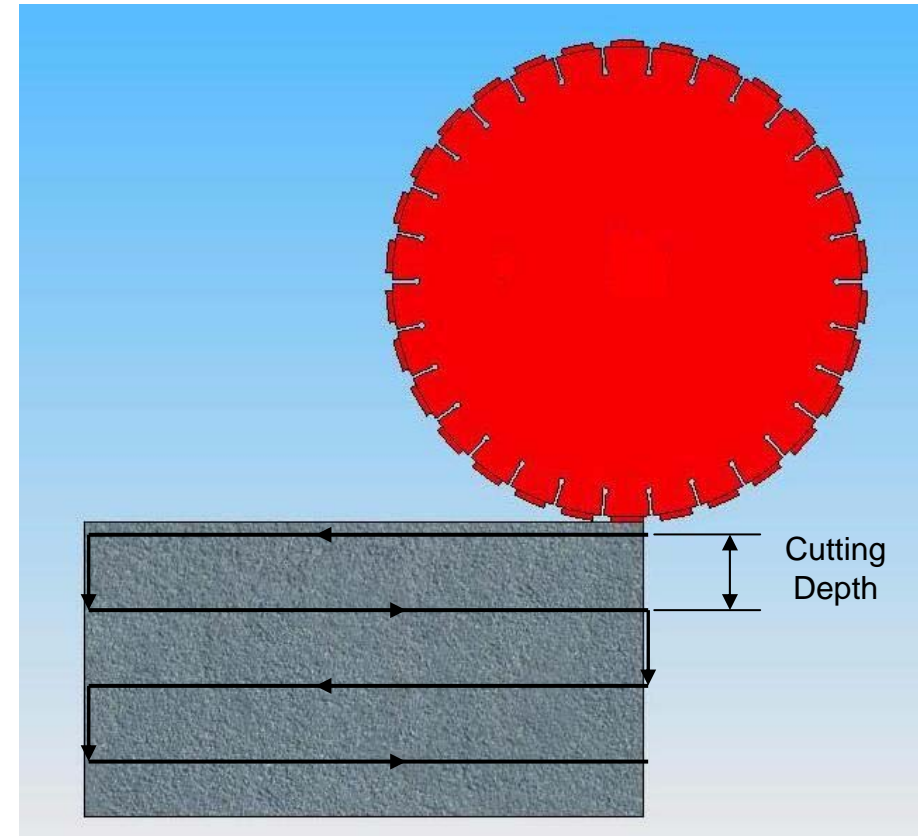
Unidirectional Cut

(It cuts through the way specified only)

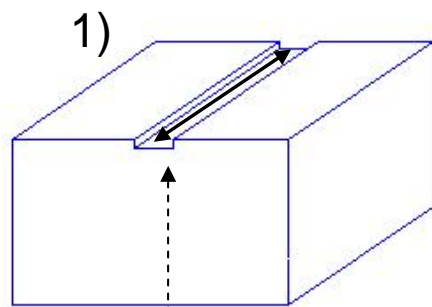
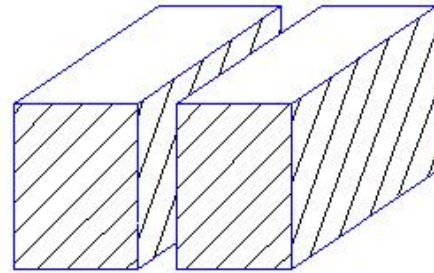


Bidirectional Cut

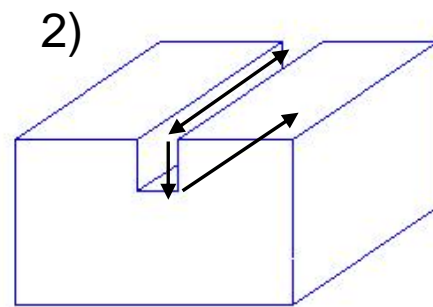
(It cuts through both ways)



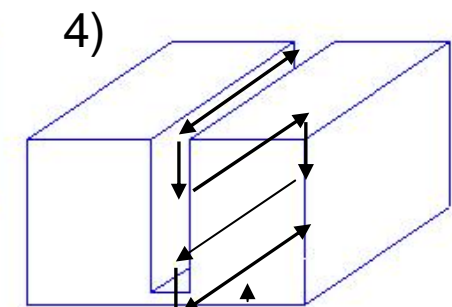
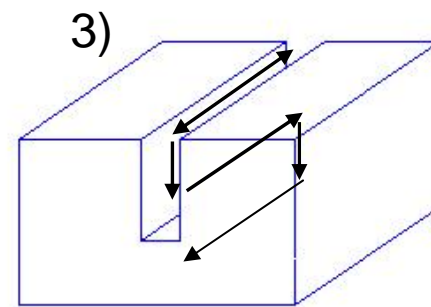
Cutting Operations: strategies



First Passes



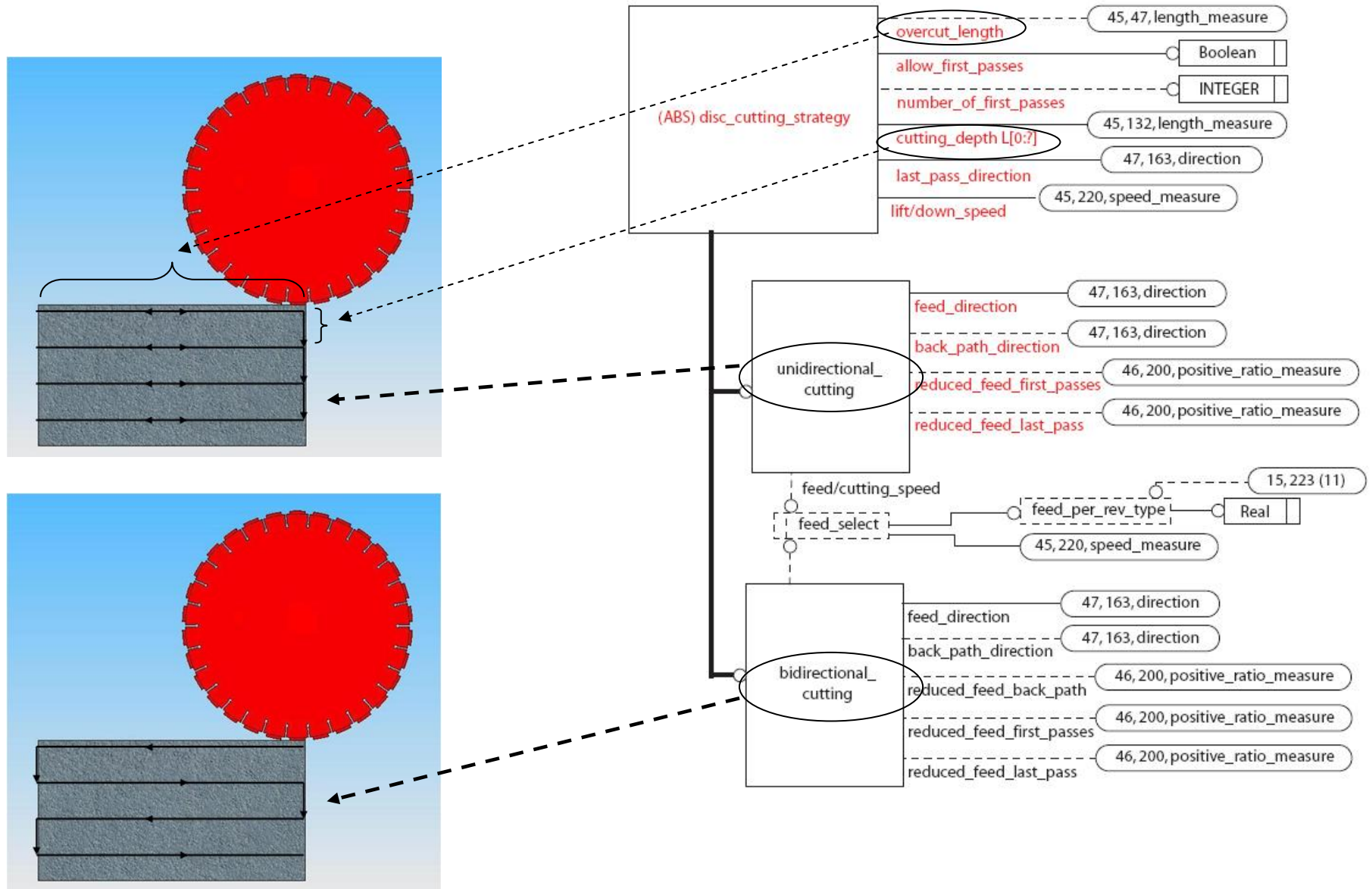
Middle Passes



Last Passes

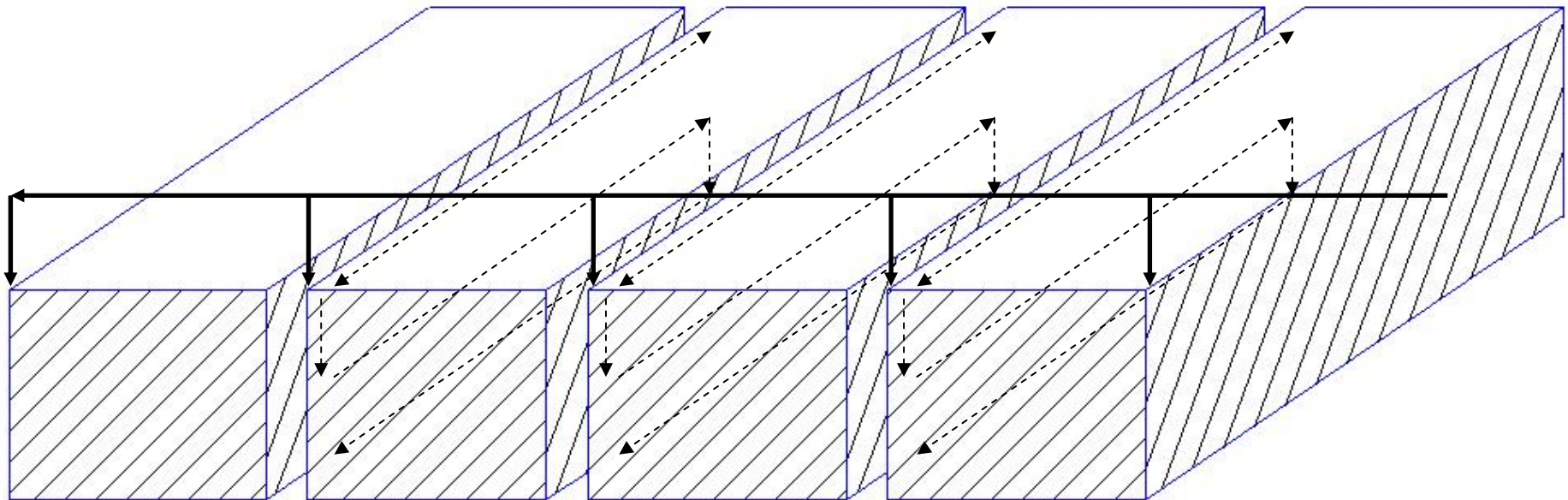
(Bidirectional case)

Cut

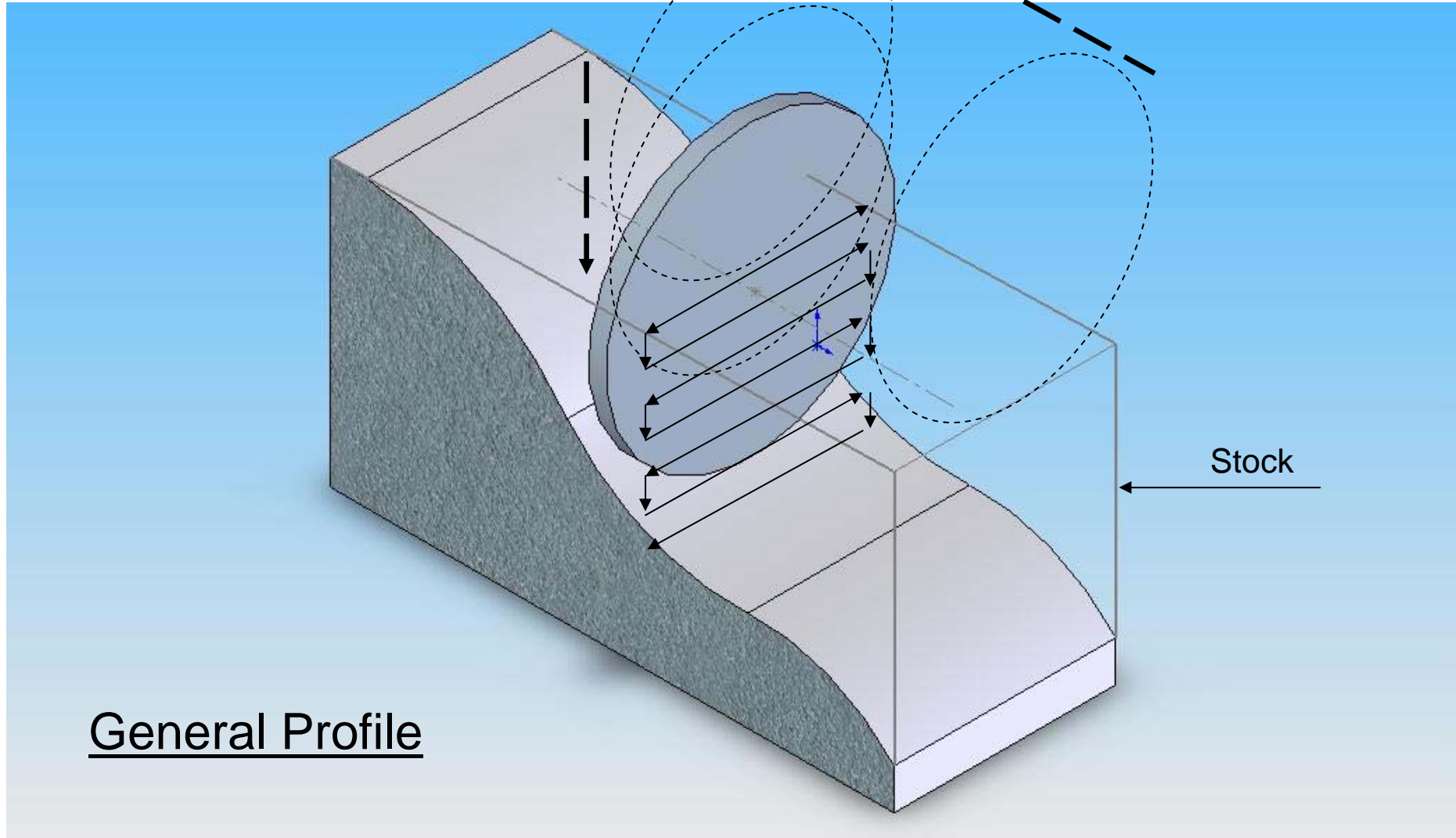


Cut

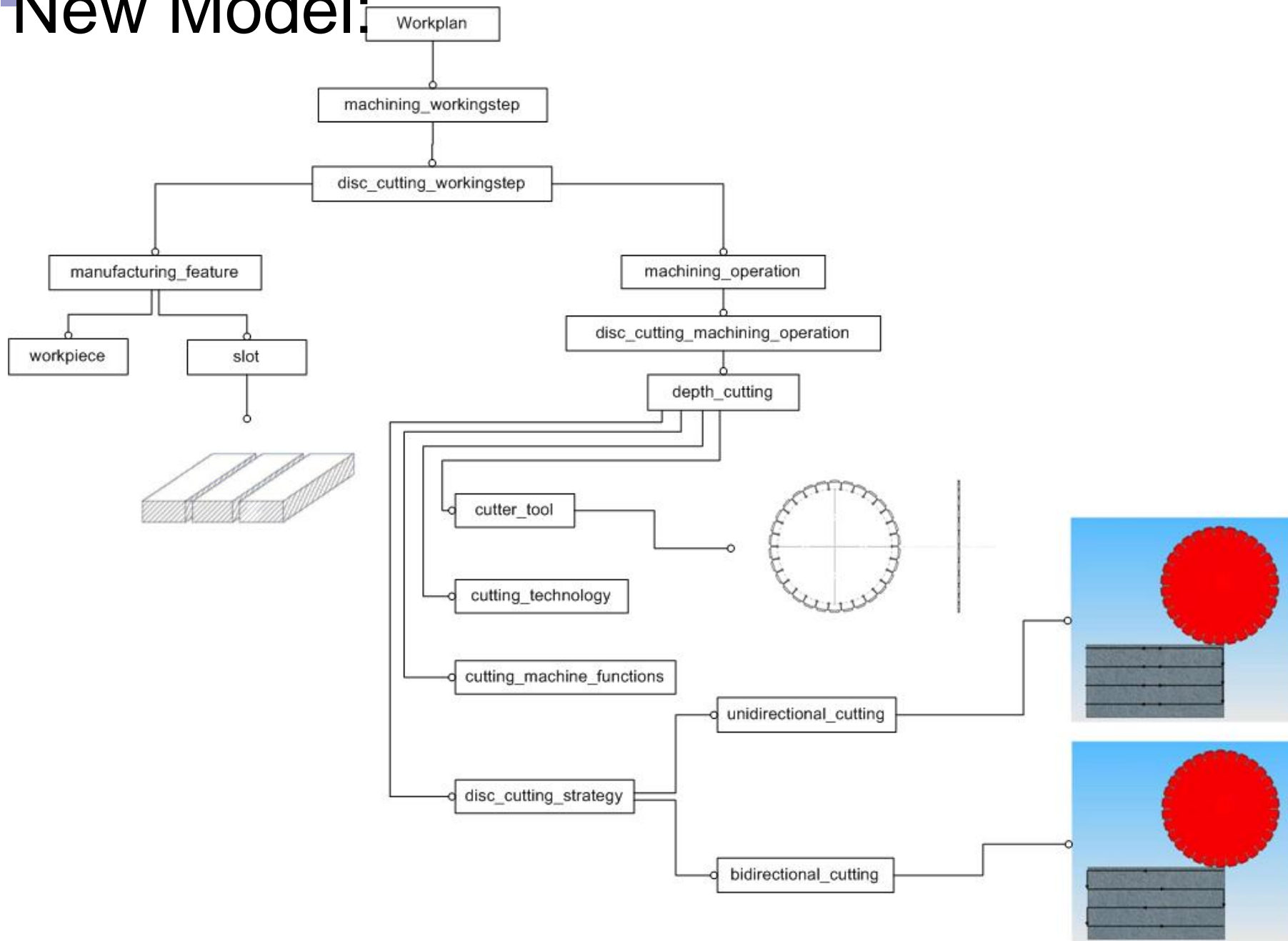
Replicate Feature



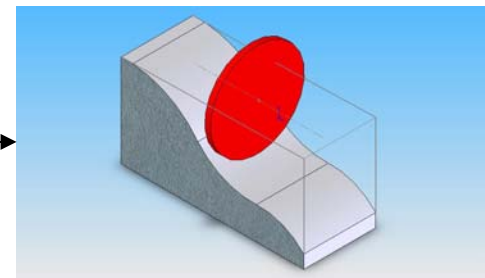
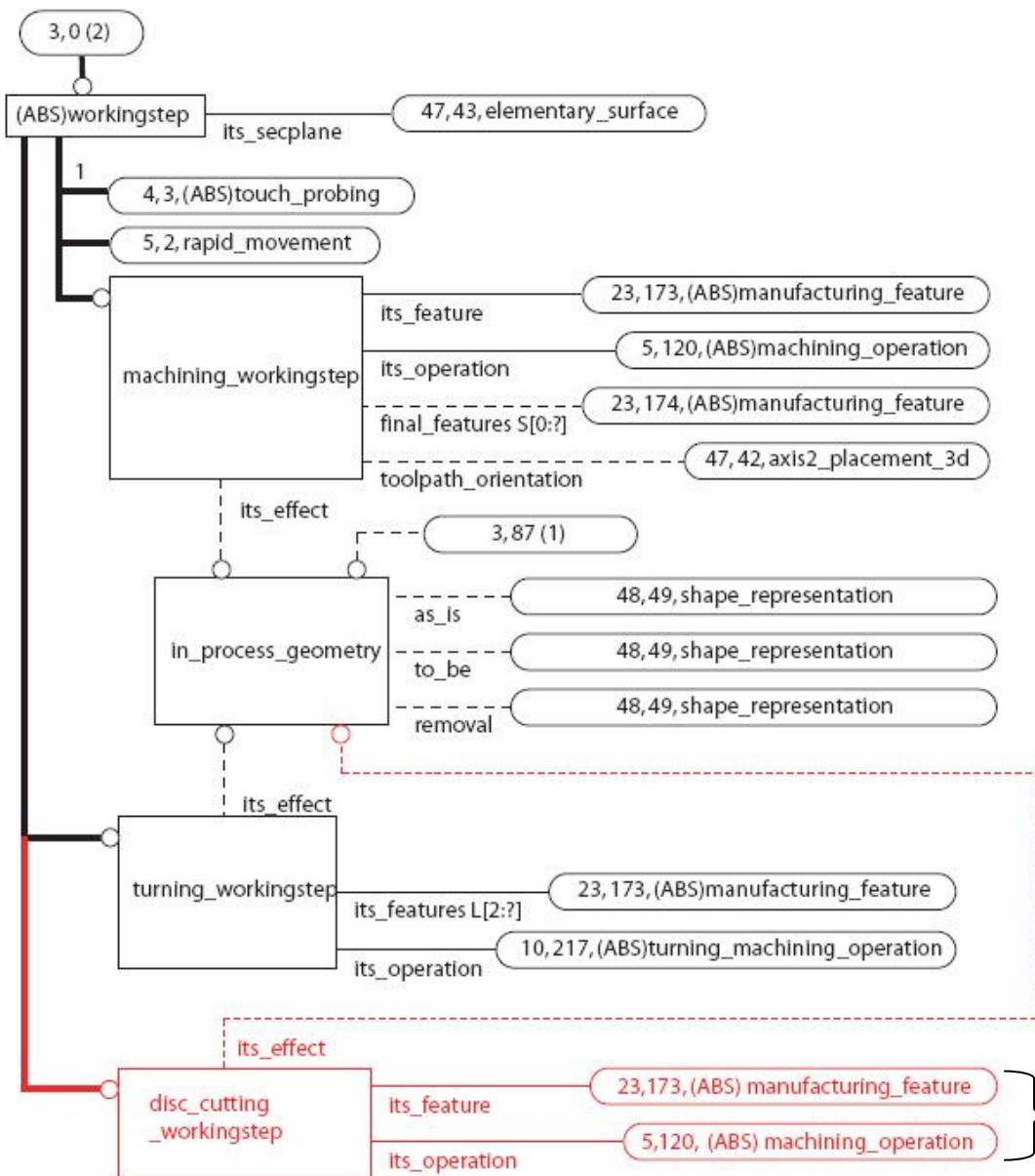
Cutting



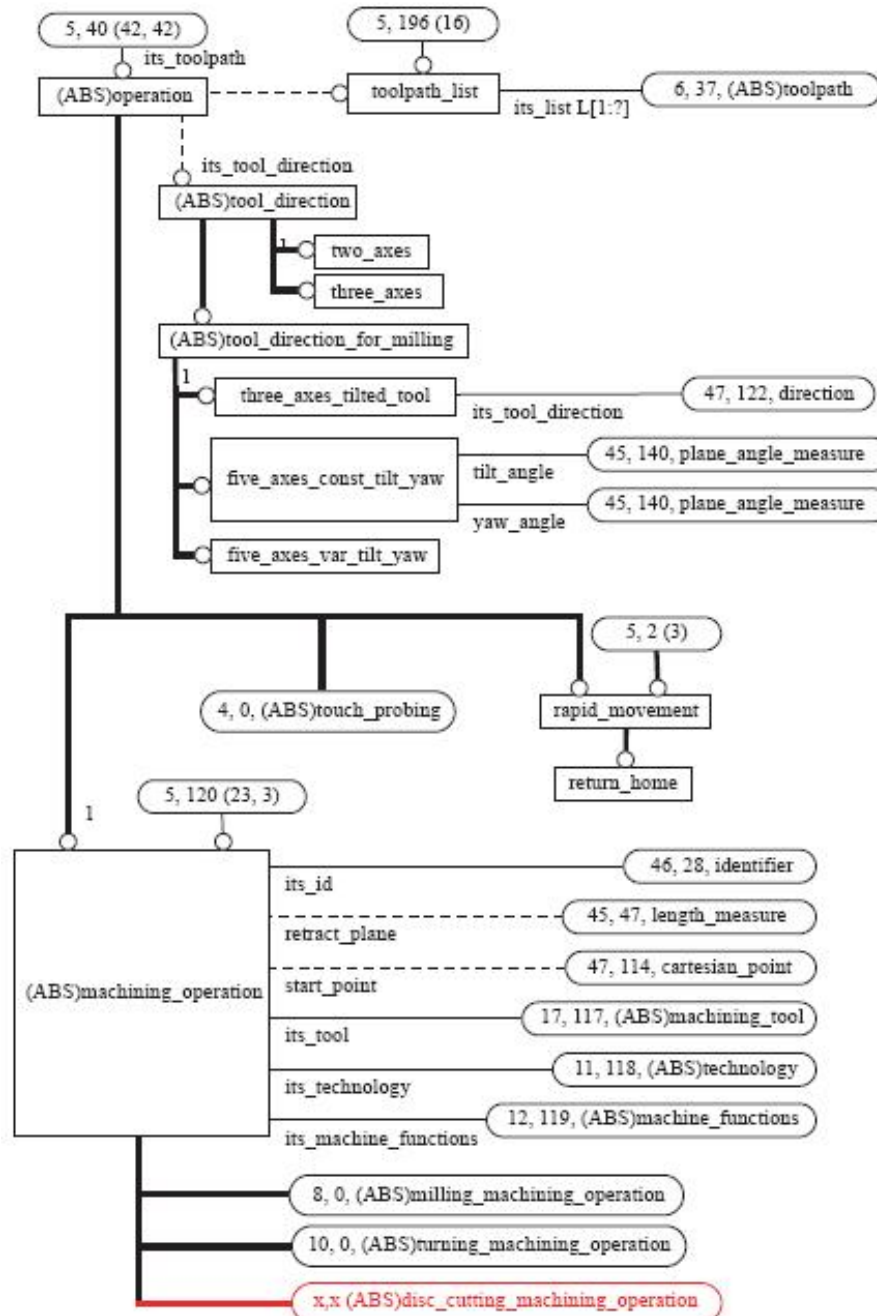
New Model:



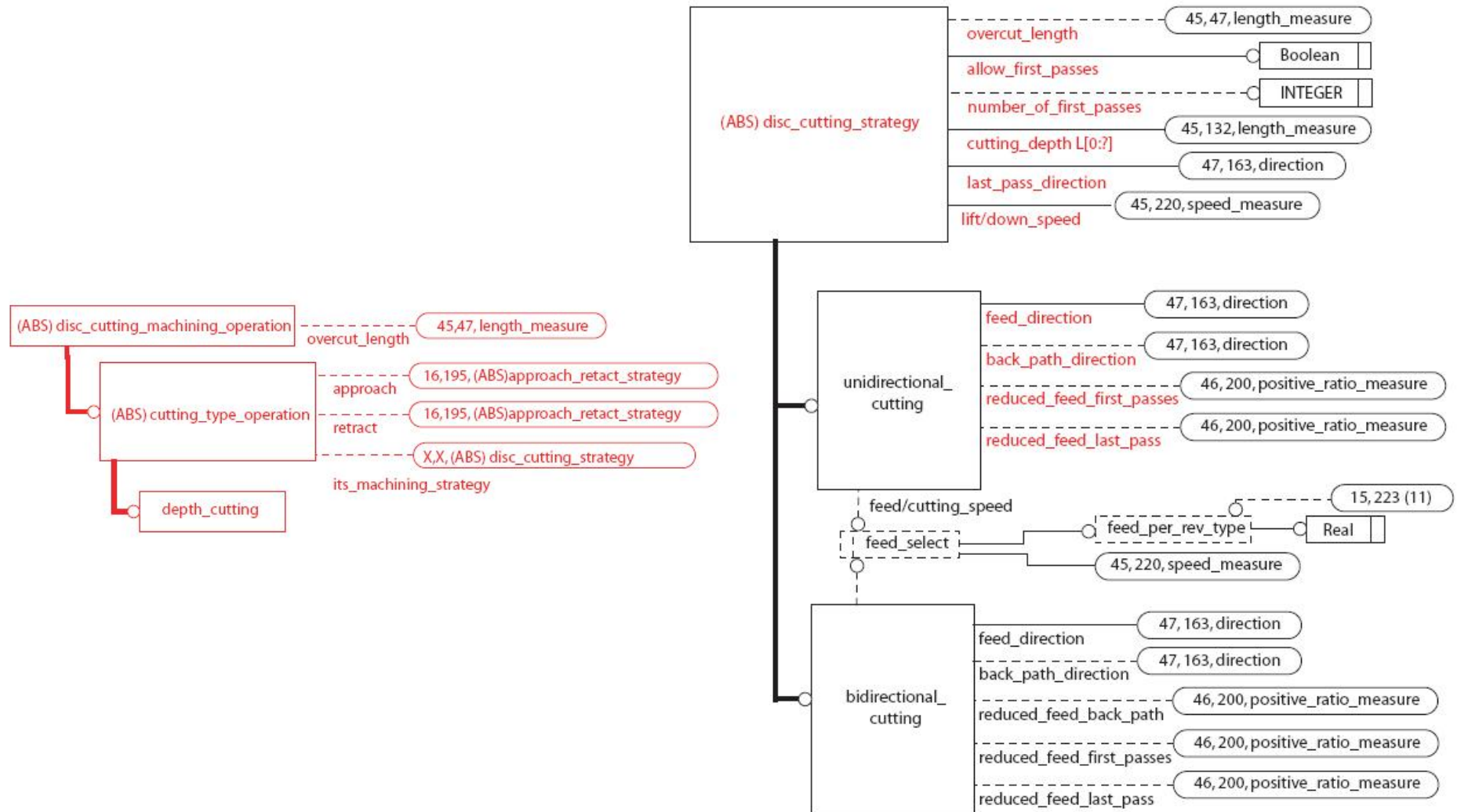
Model



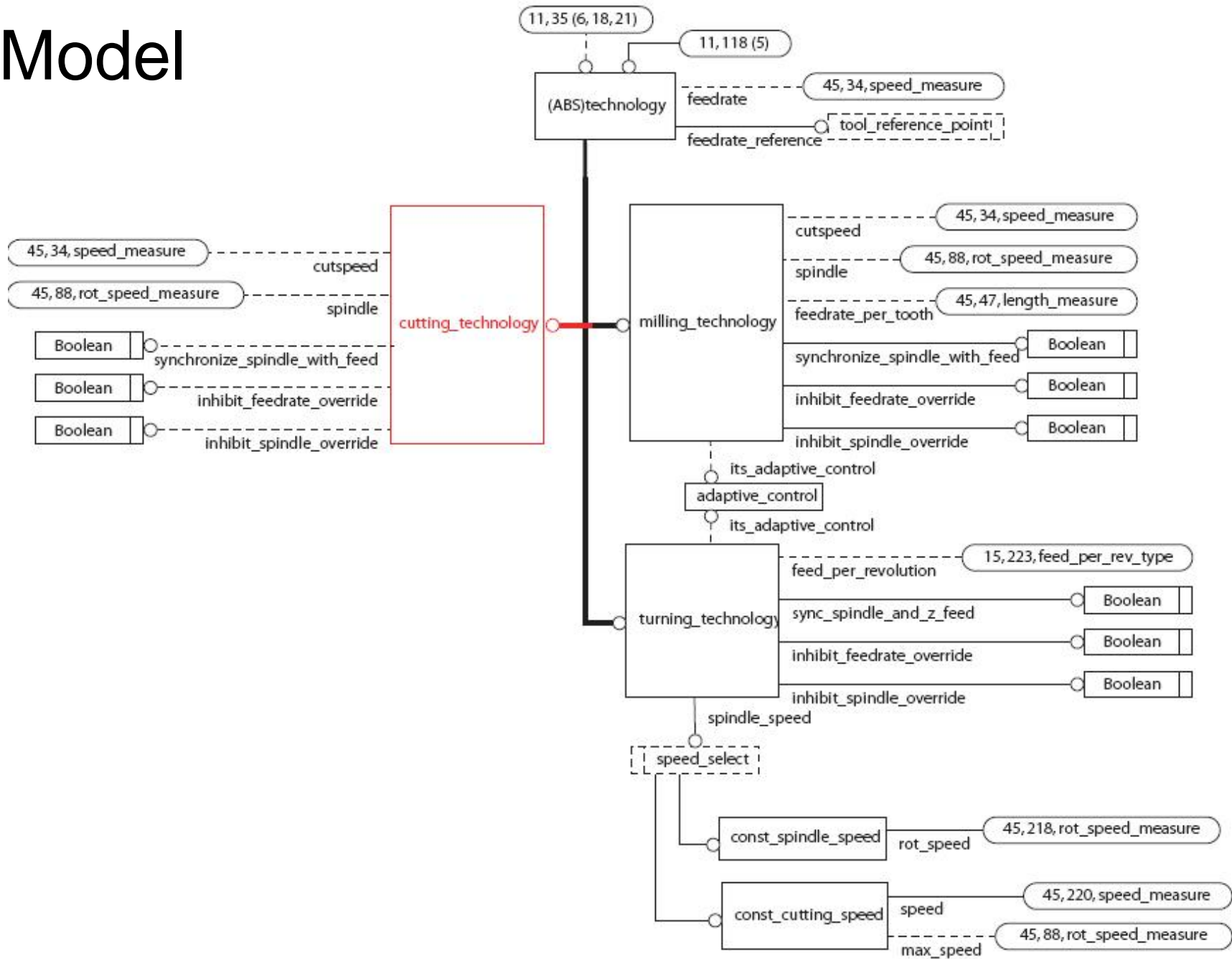
Model



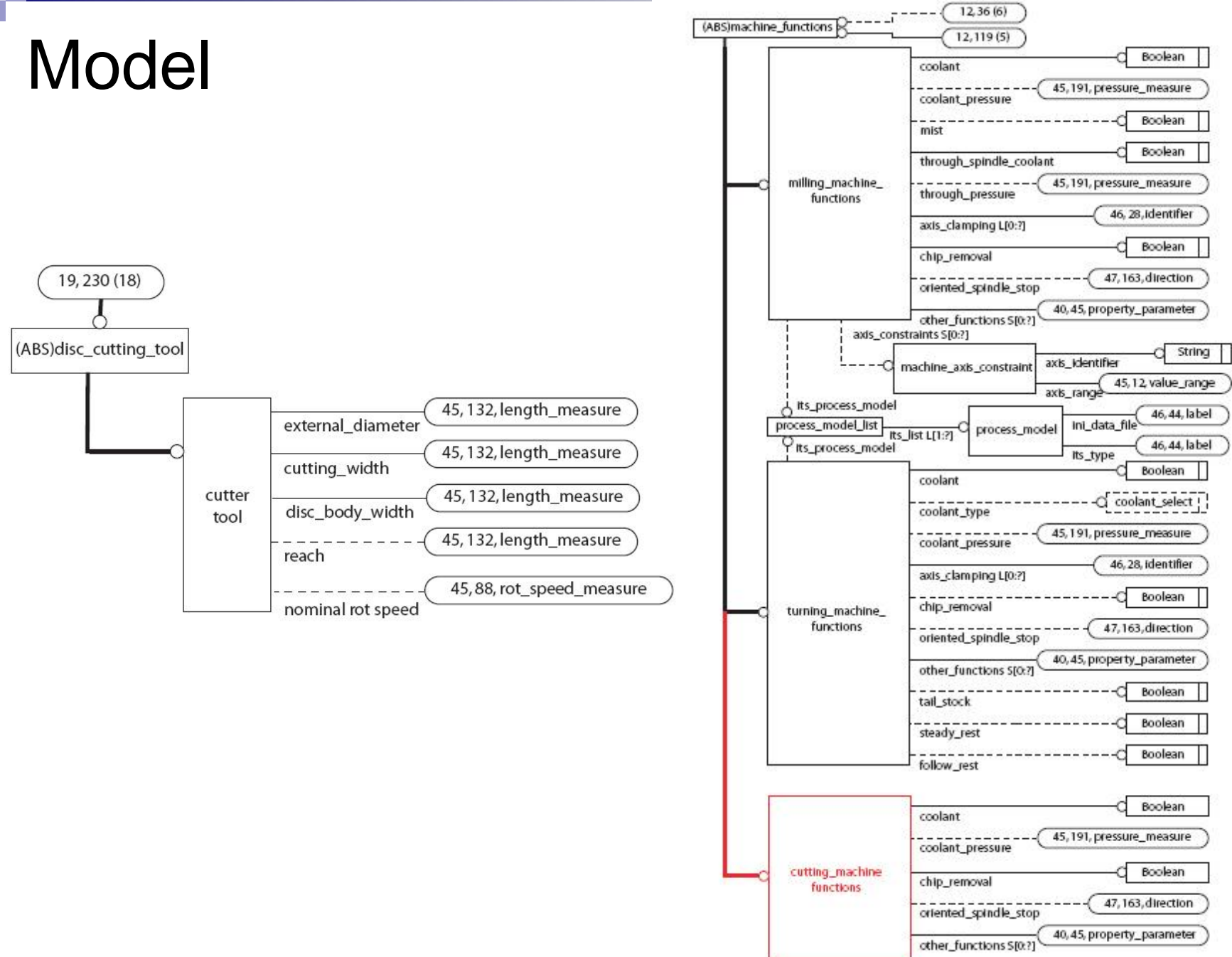
Model



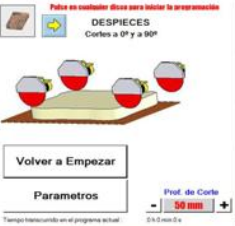
Model



Model

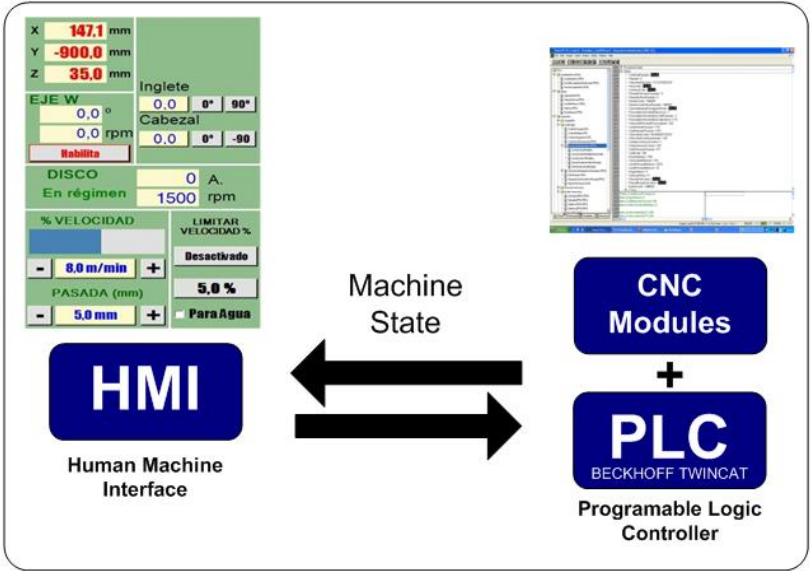


Comercial CNC stone disc cutting machine



**CAM System
DiscCAM**
 Computer Aided
Manufacturing

Owner
Design



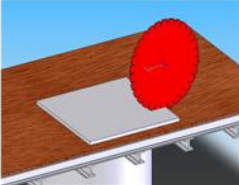
**Stone Cutting Machine
System Control**

I/O



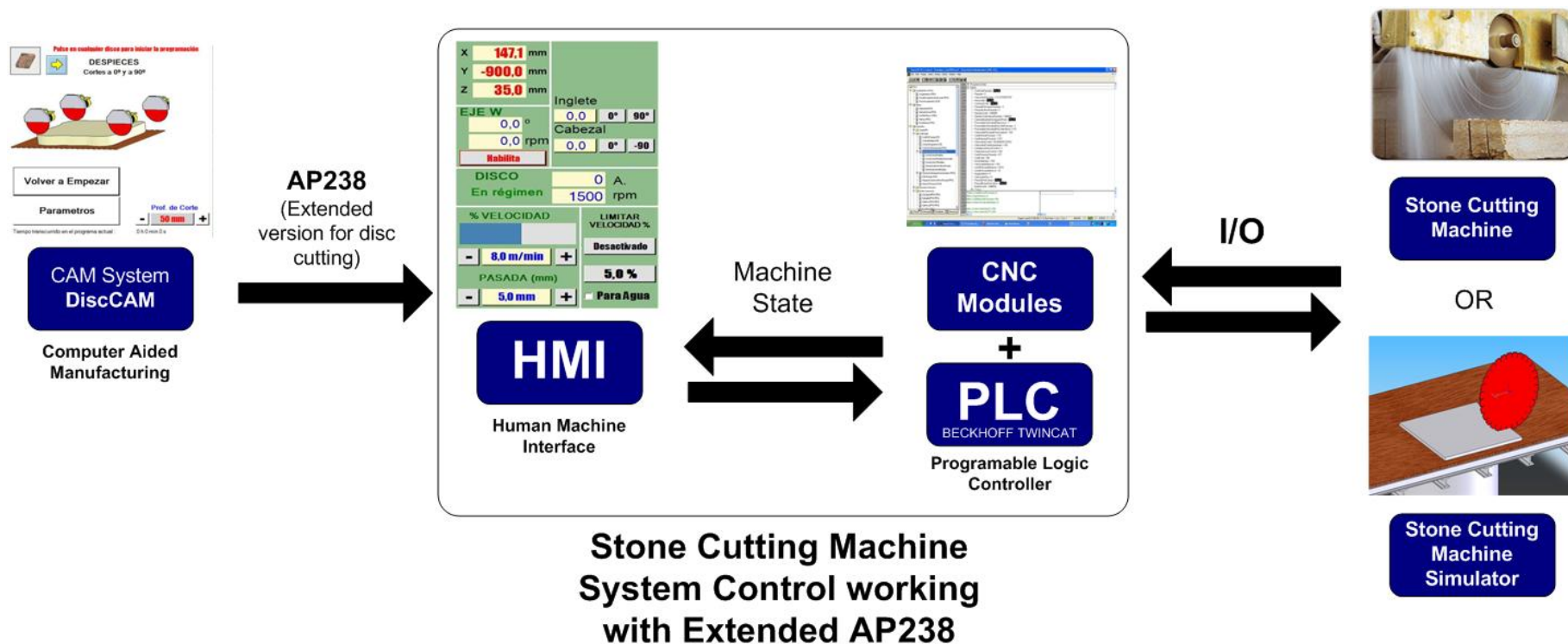
**Stone Cutting
Machine**

OR

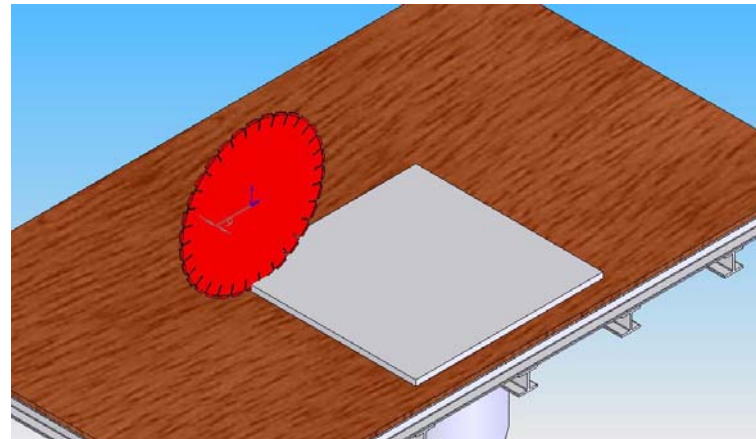
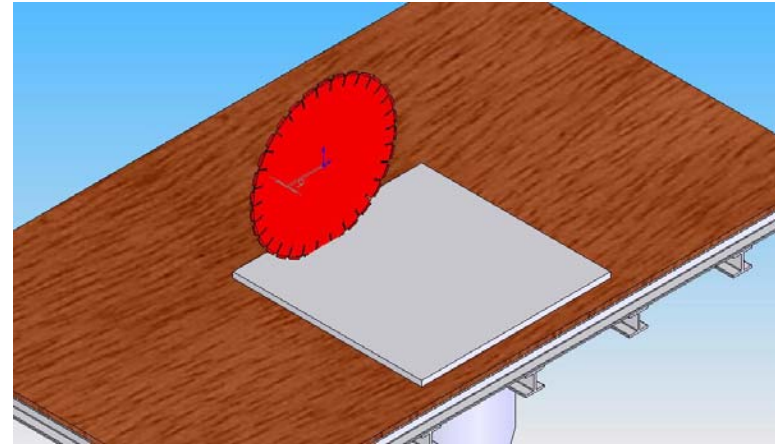
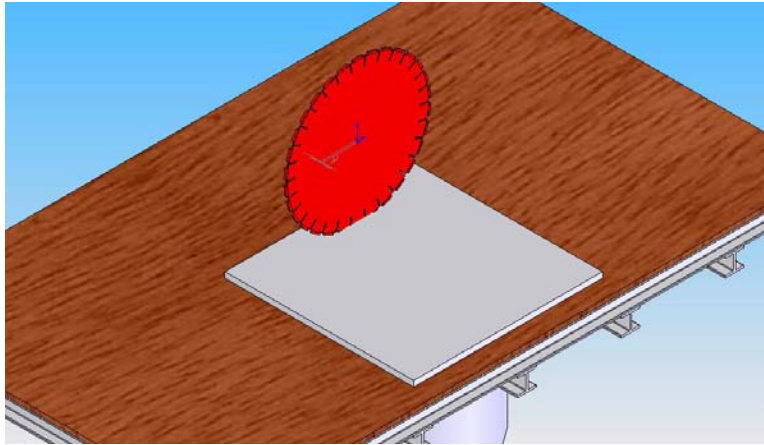


**Stone Cutting
Machine
Simulator**

AP238 Prototype implementation on a comercial CNC stone disc cutting machine



Simulation: The Controller and the control software is the same in the simulation and in a real machine.

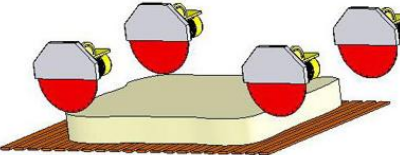




CONTROL AUTOMÁTICO

Pulse en cualquier disco para iniciar la programación

DESPIECES
Cortes a 0° y a 90°



X **0,0** mm
Y **0,0** mm
Z **0,0** mm

Inglete
EJE W **0,0** 0° 90°
Cabezal **0,0** rpm 0° -90°

Habilita

DISCO **0** A.
En régimen **1500** rpm

% VELOCIDAD LIMITAR VELOCIDAD %
Desactivado

- **1,5 m/min** +

PASADA (mm) **5,0 %**

- **5,0 mm** + Para Agua

Volver a Empezar

Parametros

Tiempo transcurrido en el programa actual : 0 h 0 min 0 s

Prof. de Corte **50 mm**

CAM Application

CAM Application: Disk parameters

AJUSTE DIÁMETRO DISCO

Valor actual : **770,0 mm**

ACTUALIZAR ↑

Valor medido : **450,0 mm**

Altura de referencia : **200,0 mm**



CAM Application: Simple feature selection



CAM Application: Feature selection



MODO TRABAJO



**COPIAR FIGURAS
DESDE USB**



**SELECCIONAR
PERFIL**



**MODO
SECUENCIAL**



Moldura curva



- Loncheado
- Repasado

CAM Application: Feature selection



MODO TRABAJO

 **COPIAR FIGURAS
DESDE USB**

 **SELECCIONAR
PERFIL**

 **MODO
SECUENCIAL**

 **Moldura recta** 



Loncheado

Repasado

CAM Application: Feature selection

