

## REVISION HISTORY



**LEADING**  
METAL-MECHANIC SOLUTIONS

PART NUMBER	<b>Bottom Plate Target Cassette</b>	
DESIGNATION	<b>Bottom Plate Target Cassette</b>	
DESCRIPTION	<b>PROCESS</b>	SHEET N° 1 OF 1 REVISION 0

REVISION N°	DESCRIPTION	DATE
0	First edition	20/07/2016

OBSERVATIONS

PREPARED BY	Luis Urrutia	DATE	20/07/2016	APPROVED BY	Carlos Aguilar	DATE	
-------------	--------------	------	------------	-------------	----------------	------	--

**RANGE OF MANUFACTURING**



**LEADING**  
METAL-MECHANIC SOLUTIONS

PART NUMBER

**Bottom Plate Target Cassette**

DESIGNATION

**Bottom Plate Target Cassette**



CODE OF CASTING

SHEET Nº 1 OF 1  
REVISION 0

OPERATION		MACHINE		OBSERVATIONS
Nº	Description	Nº	Class	
10	PLAIN MILLING		MAH DMC 103V	TWO SIDES
20	TOP FACE ROUGH MILLING		MAH DMC 103V	
30	TABS ATTACHMENT MILLING		MAH DMC 103V	CONTOUR
40	INTERIOR FACE ROUGH MILLING		MAH DMC 103V	
50	EXTERIOR FACE ROUGH MILLING		MAH DMC 103V	
60	STRAIGHTENING		MANUAL OPERATION	
70	PREFINISHING-PARALLELISM SIDES		MAH DMC 103V	
80	INTERIOR FACE PREFINISH-FINISH MILLING		MAH DMC 103V	
90	EXTERIOR FACE PREFINISH-FINISH MILLING		MAH DMC 103V	
100	EXTERIOR PROFILE, DRILLS AND PINS		MAH DMC 103V	
110	TRIMMING		MANUAL OPERATION	

OBSERVATIONS

PREPARED BY Luis Urrutia DATE 20/07/2016 APPROVED BY Carlos Aguilar DATE

# OPERATIONS SHEET



**LEADING**  
METAL-MECHANIC SOLUTIONS

PART NUMBER	<b>Bottom Plate Target Cassette</b>			 Nº ES 001207 Nº ES04/0167/AE Nº ES04/NT06
DESIGNATION	<b>Bottom Plate Target Cassette</b>	OP	<b>10</b>	
DESCRIPTION	<b>PLAIN MILLING</b>	M/C	<b>02-05</b>	
MACHINING PROGRAM		...		

## PREPARATION

TOOL N°	QUANTITY	DESIGNATION	DATA
	1	CLAMPING TOOL	SPECIAL CLAMP
T1/ N1	1	TOOL HOLDER	0 mm. (pre-setting)

Instructions to fix the clamping tool:

- 1.- Clean all machine surfaces including clamp base and table.
- 2.- Place the clamps on the table.
- 3.- Tighten the screws that secure the clamp to the table.
- 4.- Hold the workpiece with the clamp, plain milling the lateral.
- 5.- Release the piece, rotate and re-attach the clamp, plain milling the opposite lateral.

PREPARED BY	Luis Urrutia	DATE	20/07/2016	APPROVED BY	Carlos Aguilar	DATE	
-------------	--------------	------	------------	-------------	----------------	------	--

# OPERATIONS SHEET



**LEADING**  
METAL-MECHANIC SOLUTIONS

PART NUMBER	<b>Bottom Plate Target Cassette</b>			
DESIGNATION	<b>Bottom Plate Target Cassette</b>	OP	<b>10</b>	
DESCRIPTION	<b>PLAIN MILLING</b>	M/C	<b>02-05</b>	SHEET N° 1 OF 1 REVISION 0

MACHINING PROGRAM ...

## TOOLS + TOOLING

TOOL N°	QUANTITY	DESIGNATION	REFERENCE
T1 / N1 MILLING PLATE Ø63	1	ARBOR ISO-40 Ø22	(KENNAMETAL)
	1	MILLING CUTTER PLATE Ø63	WGCM4063RS (SUMITOMO)
	5	INSERT	<b>SEMT13T3AGSN-G ACK300</b> (SUMITOMO)
	5	INSERTS SCREW	BFTX03512IP (SUMITOMO)
	1	KEY	TRDR15IP (SUMITOMO)
	5	ANVIL	WGCS13R (SUMITOMO)
	5	ANVIL SCREW	BW0507F (SUMITOMO)
	1	KEY	LH035 (SUMITOMO)

PREPARED BY	Luis Urrutia	DATE	20/07/2016	APPROVED BY	Carlos Aguilar	DATE	
-------------	--------------	------	------------	-------------	----------------	------	--

# OPERATIONS SHEET



**LEADING**  
METAL-MECHANIC SOLUTIONS

PART NUMBER	<b>Bottom Plate Target Cassette</b>			
DESIGNATION	<b>Bottom Plate Target Cassette</b>	OP	<b>20</b>	
DESCRIPTION	<b>TOP FACE ROUGH MILLING</b>	M/C	<b>02-05</b>	



SHEET N° 1 OF 1  
REVISION 0

MACHINING PROGRAM ...

## PREPARATION

HTA N°	QUANTITY	DESIGNATION	DATA
	1	CLAMPING TOOL	SPECIAL CLAMP
T1/ N1	1	TOOL HOLDERS	0 mm. (pre-setting)

Instructions to fix the clamping tool:

- 1.- Hold the workpiece with the clamp, and rough milling of one of the sides

PREPARED BY	Luis Urrutia	DATE	20/07/2016	APPROVED BY	Carlos Aguilar	DATE	
-------------	--------------	------	------------	-------------	----------------	------	--

# OPERATIONS SHEET



**LEADING**  
METAL-MECHANIC SOLUTIONS

PART NUMBER	<b>Bottom Plate Target Cassette</b>			
DESIGNATION	<b>Bottom Plate Target Cassette</b>	OP	<b>20</b>	
DESCRIPTION	<b>TOP FACE ROUGH MILLING</b>	M/C	<b>02-05</b>	SHEET N° 1 OF 1 REVISION 0

MACHINING PROGRAM ...

## TOOLS + TOOLING

TOOL N°	QUANTITY	DESIGNATION	REFERENCE
T1 / N1 MILLING PLATE Ø63	1	ARBOR ISO-40 Ø22	(KENNAMETAL)
	1	MILLING CUTTER PLATE Ø63	WGCM4063RS (SUMITOMO)
	5	INSERT	<b>SEMT13T3AGSN-G ACK300</b> (SUMITOMO)
	5	INSERTS SCREW	BFTX03512IP (SUMITOMO)
	1	KEY	TRDR15IP (SUMITOMO)
	5	ANVIL	WGCS13R (SUMITOMO)
	5	ANVIL SCREW	BW0507F (SUMITOMO)
	1	KEY	LH035 (SUMITOMO)

PREPARED BY	Luis Urrutia	DATE	20/07/2016	APPROVED BY	Carlos Aguilar	DATE	
-------------	--------------	------	------------	-------------	----------------	------	--

# OPERATIONS SHEET



**LEADING**  
METAL-MECHANIC SOLUTIONS

PART NUMBER	<b>Bottom Plate Target Cassette</b>			
DESIGNATION	<b>Bottom Plate Target Cassette</b>	OP	<b>30</b>	
DESCRIPTION	<b>TABS ATTACHMENT MILLING</b>	M/C	<b>02-05</b>	
				SHEET N° 1 OF 1 REVISION 0

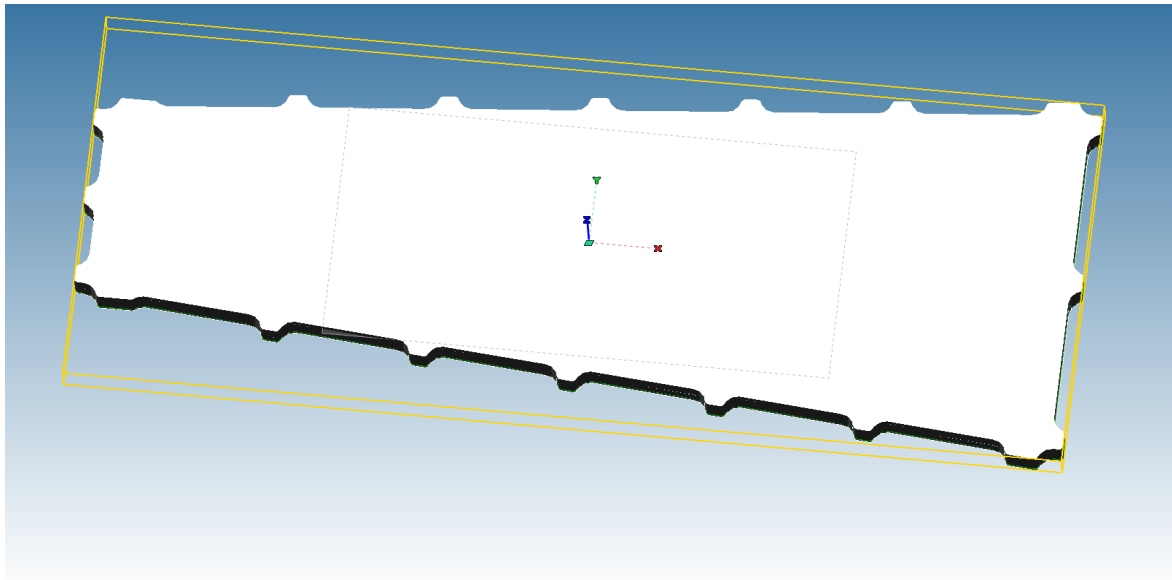
MACHINING PROGRAM ...

## PREPARATION

HTA N°	QUANTITY	DESIGNATION	DATA
	4	CLAMPING TOOL	STAPLES FIXING
T14/ N1	1	TOOL HOLDERS	0 mm. (pre-setting)
T2/ N2	1	TOOL HOLDERS	0 mm. (pre-setting)
T15/ N3	1	TOOL HOLDERS	0 mm. (pre-setting)
T4/ N4	1	TOOL HOLDERS	0 mm. (pre-setting)
T16/ N5	1	TOOL HOLDERS	0 mm. (pre-setting)
T9/ N6	1	TOOL HOLDERS	0 mm. (pre-setting)
T17/ N7	1	TOOL HOLDERS	0 mm. (pre-setting)

Instructions to fix the clamping tool:

- 1.- Clean the supporting surface from the machine table.
- 2.- Place the piece and fastened with staples.
- 3.- Proceed to contouring, threading and reaming the attachment tabs of two of the laterals.
- 4.- Release the piece, rotate 180 degrees and re-fasten.
- 5.- Contour milling, threading and reaming the attachment tabs of the other two laterals.



PREPARED BY	Luis Urrutia	DATE	20/07/2016	APPROVED BY	Carlos Aguilar	DATE	
-------------	--------------	------	------------	-------------	----------------	------	--

# OPERATIONS SHEET



**LEADING**  
METAL-MECHANIC SOLUTIONS

PART NUMBER	<b>Bottom Plate Target Cassette</b>			
DESIGNATION	<b>Bottom Plate Target Cassette</b>	OP	<b>30</b>	
DESCRIPTION	<b>TABS ATTACHMENT MILLING</b>	M/C	<b>02-05</b>	SHEET N° 1 OF 1 REVISION 0

MACHINING PROGRAM ...

## TOOLS + TOOLING

HTA N°	QUANTITY	DESIGNATION	DATA
<b>T14 / N1</b> MILLING CUTTER Ø63	1	ARBOR ISO 40	DV40CS22055M
	1	MILLING CUTTER Ø 63	M4D063Z06S22LN15 (KENNAMETAL)
	6	INSERTS	<b>LNGU15T608SRGEKCPM40</b> (KENNAMETAL)
	6	INSERTS SCREW	MS-2071 (KENNAMETAL)
	1	KEY	<b>DT15IP</b> (KENNAMETAL)
<b>T2 / N2</b>	1	TOOL HOLDERS DV40 Ø 20	DV40BWN20063M (KENNAMETAL)
	1	BODY HEAD ADAPTER	E16-A20-SS-070 (SANDVIK)
	1	MILLING HEAD Ø16 RADIUS 2	<b>316-16SM450C16020P 1030</b> (SANDVIK)
	1	KEY	5680 093-03(SANDVIK)
<b>T15 / N3</b>	1	TOOL HOLDERS DV40 Ø 16	DV40BWN16063M (KENNAMETAL)
	1	MILLING CUTTER Ø 16	<b>1P330-1600-XA 1620</b> (SANDVIK)
<b>T4 / N4</b>	1	TOOL HOLDERS DV40 Ø 6	DV40BWN06050M (KENNAMETAL)
	1	DRILL Ø 5	<b>860.1-0500-037A0-PM 4234</b> (SANDVIK)
<b>T16 / N5</b>	1	TOOL HOLDERS DV40 Ø 6	DV40BWN06050M (KENNAMETAL)
	1	DRILL Ø 5,8	<b>860.1-0580-037A0-PM 4234</b> (SANDVIK)
<b>T9 / N6</b>	1	TAP HOLDERS DV40	DV40RC1060M (KENNAMETAL)
	1	QUICK CHANGER	RC1TA060049M050 (KENNAMETAL)
	1	TAP M6	<b>S2051302-M6</b> (WALTER)
<b>T17 / N7</b>	1	COLLET HOLDERS DV40 / ER32	DV40BER32070M (KENNAMETAL)
	1	COLLET ER32 Ø 6	32ER060M (KENNAMETAL)
	1	REAMER Ø 6	<b>RMS06000H7SF</b> (KENNAMETAL)
	1	TIGHTENING NUT	LNSER32M (KENNAMETAL)
	1	NUT KEY	ER32WM (KENNAMETAL)
	1	SCREW STOPPER	SS094041G (KENNAMETAL)
	1	SCREW STOPPER KEY	ALLEN 4 mm.

PREPARED BY	Luis Urrutia	DATE	20/07/2016	APPROVED BY	Carlos Aguilar	DATE	
-------------	--------------	------	------------	-------------	----------------	------	--



# OPERATIONS SHEET



**LEADING**  
METAL-MECHANIC SOLUTIONS

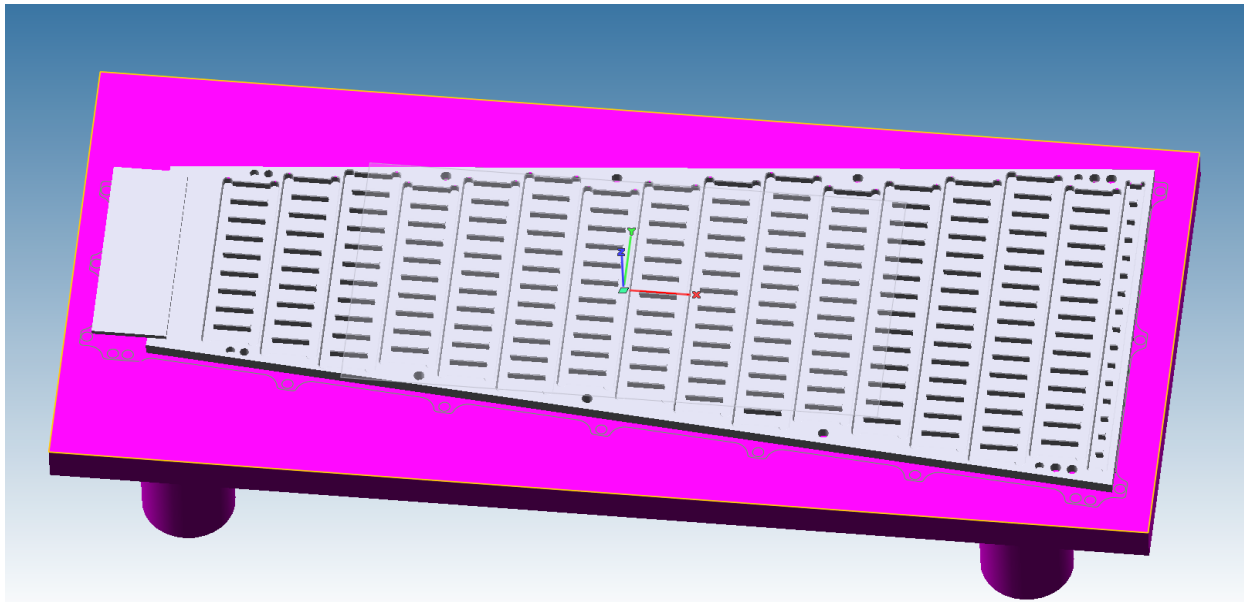
PART NUMBER	<b>Bottom Plate Target Cassette</b>			
DESIGNATION	<b>Bottom Plate Target Cassette</b>	OP	<b>40</b>	
DESCRIPTION	<b>INTERIOR FACE ROUGH MILLING</b>	M/C	<b>02-05</b>	SHEET N° 1 OF 1
MACHINING PROGRAM	...			REVISION 0

## PREPARATION

HTA N°	QUANTITY	DESIGNATION	DATA
	1	CLAMPING TOOL	ESPECIAL ELEVATED TOOL
T1/ N1	1	ARBOR	0 mm. (pre-setting)
T2/ N2	1	TOOL HOLDERS	0 mm. (pre-setting)
T18/ N3	1	TOOL HOLDERS	0 mm. (pre-setting)
T19/ N4	1	TOOL HOLDERS	0 mm. (pre-setting)

Instructions to fix the clamping tool:

- 1.- Clean all machine surfaces including clamp base and table.
- 2.- Place the clamps on the table.
- 3.- Tighten the screws that secure the clamp to the table.
- 4.- Positioning the workpiece with pins and screwing by the tabs to the clamping tool.



PREPARED BY	Luis Urrutia	DATE	20/07/2016	APPROVED BY	Carlos Aguilar	DATE	
-------------	--------------	------	------------	-------------	----------------	------	--

# OPERATIONS SHEET



**LEADING**  
METAL-MECHANIC SOLUTIONS

PART NUMBER	<b>Bottom Plate Target Cassette</b>			 Nº ES 001207 Nº ES04/0167/AE Nº ES04/0167/AE
DESIGNATION	<b>Bottom Plate Target Cassette</b>	OP	<b>40</b>	
DESCRIPTION	<b>INTERIOR FACE ROUGH MILLING</b>	M/C	<b>02-05</b>	SHEET Nº 1 OF 1 REVISION 0

MACHINING PROGRAM ...

## TOOLS + TOOLING

HTA Nº	QUANTITY	DESIGNATION	DATA
<b>T1 / N1</b> MILLING CUTTER Ø63	1	ARBOR ISO-40 Ø22	(KENNAMETAL)
	1	MILLING CUTTER Ø63	WGCM4063RS (SUMITOMO)
	5	INSERTS	<b>SEMT13T3AGSN-G ACK300</b> (SUMITOMO)
	5	INSERTS SCREW	BFTX03512IP (SUMITOMO)
	1	KEY	TRDR15IP (SUMITOMO)
	5	ANVIL	WGCS13R (SUMITOMO)
	5	ANVIL SCREW	BW0507F (SUMITOMO)
	1	KEY	LH035 (SUMITOMO)
<b>T2 / N2</b>	1	TOOL HOLDERS DV40 Ø 20	DV40BWN20063M (KENNAMETAL)
	1	BODY HEAD ADAPTER	E16-A20-SS-070 (SANDVIK)
	1	MILLING HEAD Ø16 RADIUS 2	<b>316-16SM450C16020P 1030</b> (SANDVIK)
	1	KEY	5680 093-03(SANDVIK)
<b>T18 / N3</b>	1	TOOL HOLDERS DV40 Ø 6	DV40BWN06050M (KENNAMETAL)
	1	MILLING CUTTER Ø 5 RADIUS 1	<b>2S340-0500-100-MA 1640</b> (SANDVIK)
<b>T19 / N4</b>	1	TOOL HOLDERS DV40 Ø 6	DV40BWN06050M (KENNAMETAL)
	1	MILLING CUTTER Ø 3 RADIUS 0,5	<b>R216.24-03050BCC05P 1640</b> (SANDVIK)

PREPARED BY	Luis Urrutia	DATE	20/07/2016	APPROVED BY	Carlos Aguilar	DATE	
-------------	--------------	------	------------	-------------	----------------	------	--

# OPERATIONS SHEET



**LEADING**  
METAL-MECHANIC SOLUTIONS

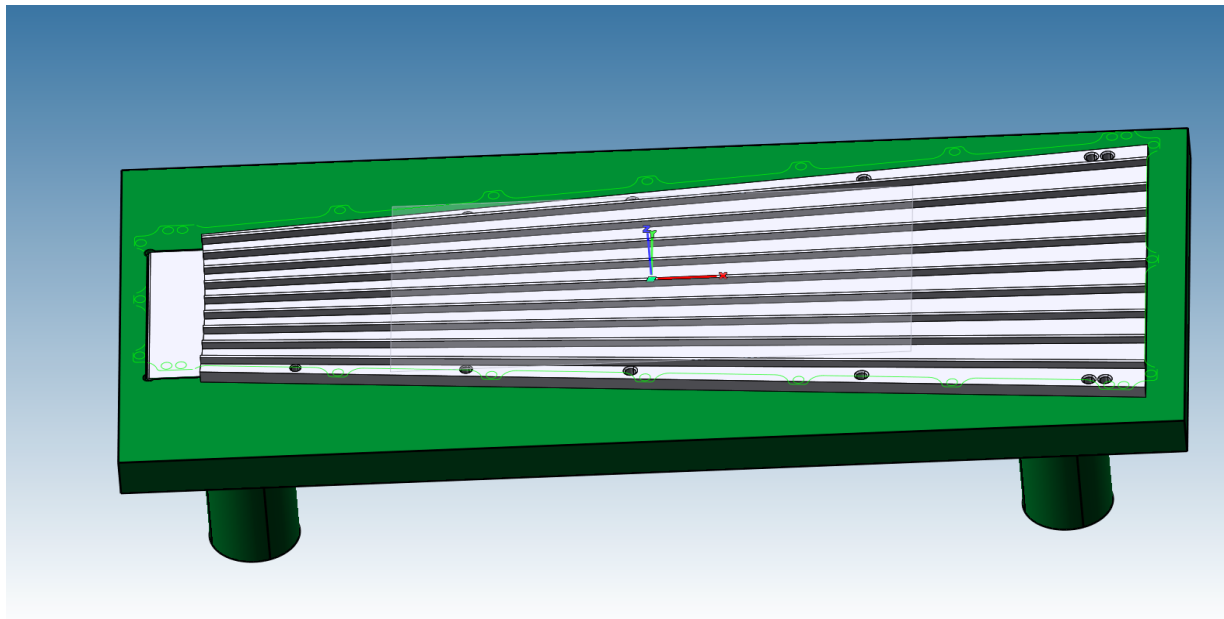
PART NUMBER	<b>Bottom Plate Target Cassette</b>			 SHEET N° 1 OF 1 REVISION 0
DESIGNATION	<b>Bottom Plate Target Cassette</b>	OP	<b>50</b>	
DESCRIPTION	<b>EXTERIOR FACE ROUGH MILLING</b>	M/C	<b>02-05</b>	
MACHINING PROGRAM	...			

## PREPARATION

HTA N°	QUANTITY	DESIGNATION	DATA
	1	CLAMPING TOOL	ESPECIAL ELEVATED TOOL
T1/ N1	1	ARBOR	0 mm. (pre-setting)
T2/ N2	1	TOOL HOLDERS	0 mm. (pre-setting)
T20/ N3	1	TOOL HOLDERS	0 mm. (pre-setting)

Instructions to fix the clamping tool:

- 1.- Turn the piece to machine the other side.
- 2.- Positioning the workpiece with pins and screwing by the tabs to the clamping tool.



PREPARED BY	Luis Urrutia	DATE	20/07/2016	APPROVED BY	Carlos Aguilar	DATE	
-------------	--------------	------	------------	-------------	----------------	------	--

# OPERATIONS SHEET



**LEADING**  
METAL-MECHANIC SOLUTIONS



PART NUMBER	<b>Bottom Plate Target Cassette</b>			SHEET N° 1 OF 1 REVISION 0
DESIGNATION	<b>Bottom Plate Target Cassette</b>	OP	<b>50</b>	
DESCRIPTION	<b>EXTERIOR FACE ROUGH MILLING</b>	M/C	<b>02-05</b>	

MACHINING PROGRAM ...

## TOOLS + TOOLING

TOOL N°	QUANTITY	DESIGNATION	REFERENCE
<b>T1 / N1</b> MILLING CUTTER Ø63	1	ARBOR ISO-40 Ø22	(KENNAMETAL)
	1	MILLING CUTTER Ø63	WGCM4063RS (SUMITOMO)
	5	INSERTS	<b>SEMT13T3AGSN-G ACK300</b> (SUMITOMO)
	5	INSERTS SCREW	BFTX03512IP (SUMITOMO)
	1	KEY	TRDR15IP (SUMITOMO)
	5	ANVIL	WGCS13R (SUMITOMO)
	5	ANVIL SCREW	BW0507F (SUMITOMO)
	1	KEY	LH035 (SUMITOMO)
<b>T2 / N2</b>	1	TOOL HOLDERS DV40 Ø 20	DV40BWN20063M (KENNAMETAL)
	1	BODY HEAD ADAPTER	E16-A20-SS-070 (SANDVIK)
	1	MILLING HEAD Ø16 RADIUS 2	<b>316-16SM450C16020P 1030</b> (SANDVIK)
	1	KEY	5680 093-03(SANDVIK)
<b>T20 / N3</b>	1	TOOL HOLDERS DV40 Ø 8	DV40BWN08050M (KENNAMETAL)
	1	MILLING CUTTER Ø 8 RADIUS 1	<b>2S340-0800-100-MA 1640</b> (SANDVIK)

PREPARED BY	Luis Urrutia	DATE	20/07/2016	APPROVED BY	Carlos Aguilar	DATE	
-------------	--------------	------	------------	-------------	----------------	------	--

# OPERATIONS SHEET



**LEADING**  
METAL-MECHANIC SOLUTIONS

PART NUMBER	<b>Bottom Plate Target Cassette</b>			
DESIGNATION	<b>Bottom Plate Target Cassette</b>	OP	<b>60</b>	
DESCRIPTION	<b>STRAIGHTENING</b>	M/C	..*	SHEET N° 1 OF 1 REVISION 0

MACHINING PROGRAM: ...

## PREPARATION

HTA N°	QUANTITY	DESIGNATION	DATA

**Process:**

- 1.- Put the workpiece in the control table with guides.
- 2.- Check deformations using a dial gauge.
- 3.- Straighten the piece by the pressure exerted by the staples placed in the deformed points.

PREPARED BY	Luis Urrutia	DATE	20/07/2016	APPROVED BY	Carlos Aguilar	DATE	
-------------	--------------	------	------------	-------------	----------------	------	--

# OPERATIONS SHEET



**LEADING**  
METAL-MECHANIC SOLUTIONS

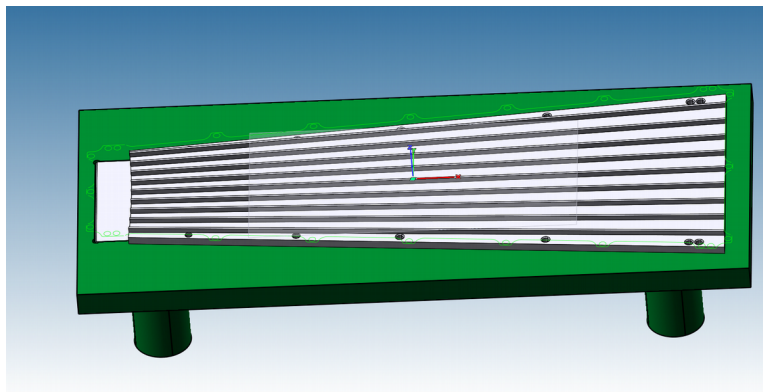
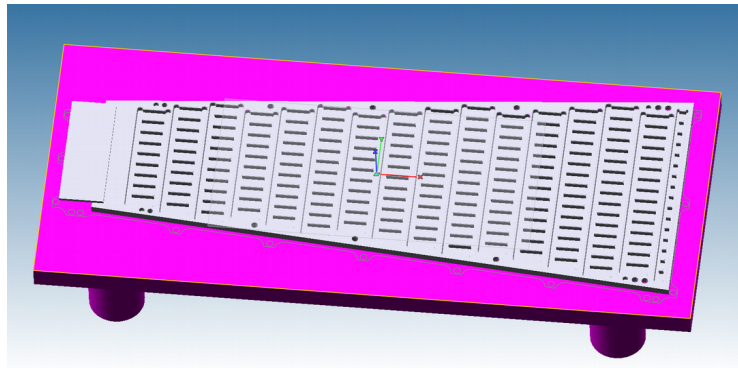
PART NUMBER	<b>Bottom Plate Target Cassette</b>			
DESIGNATION	<b>Bottom Plate Target Cassette</b>	OP	<b>70</b>	
DESCRIPTION	<b>PREFINISHING-PARALLELISM SIDES</b>	M/C	<b>02-05</b>	SHEET N° 1 OF 1
MACHINING PROGRAM		REVISION 0		

## PREPARATION

HTA N°	QUANTITY	DESIGNATION	DATA
	1	CLAMPING TOOL	ESPECIAL ELEVATED TOOL
T15 / N1	1	TOOL HOLDERS	0 mm. (pre-setting)

Instructions to fix the clamping tool:

- 1.- Positioning the workpiece by the face to be machined with pins and screwing by the tabs to the clamping tool.
- 2.- Turn the workpiece
- 3.- Positioning the workpiece by the other face to be machined with pins and screwing by the tabs to the clamping tool.



PREPARED BY	Luis Urrutia	DATE	20/07/2016	APPROVED BY	Carlos Aguilar	DATE	
-------------	--------------	------	------------	-------------	----------------	------	--

# OPERATIONS SHEET



**LEADING**  
METAL-MECHANIC SOLUTIONS

PART NUMBER	<b>Bottom Plate Target Cassette</b>			
DESIGNATION	<b>Bottom Plate Target Cassette</b>	OP	<b>70</b>	
DESCRIPTION	<b>PREFINISHING-PARALLELISM SIDES</b>	M/C	<b>02-05</b>	



SHEET N° 1 OF 1  
REVISION 0

MACHINING PROGRAM ...

## TOOLS + TOOLING

TOOL N°	QUANTITY	DESIGNATION	REFERENCE
T15 / N1	1	TOOL HOLDERS DV40 Ø 16	DV40BWN16063M (KENNAMETAL)
	1	MILLING CUTTER Ø 16	1P330-1600-XA 1620 (SANDVIK)

PREPARED BY	Luis Urrutia	DATE	20/07/2016	APPROVED BY	Carlos Aguilar	DATE	
-------------	--------------	------	------------	-------------	----------------	------	--

# OPERATIONS SHEET



**LEADING**  
METAL-MECHANIC SOLUTIONS

PART NUMBER	<b>Bottom Plate Target Cassette</b>			
DESIGNATION	<b>Bottom Plate Target Cassette</b>	OP	<b>80</b>	
DESCRIPTION	<b>INTERIOR FACE PREFINISH-FINISH MILLING</b>	M/C	<b>02-05</b>	
MACHINING PROGRAM		...		

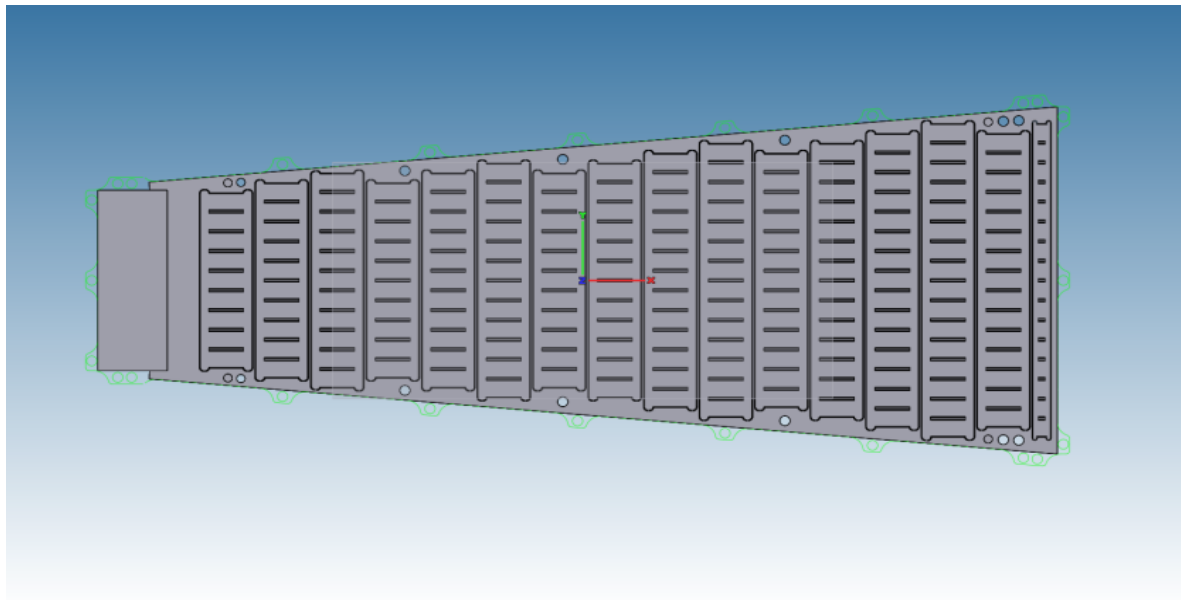


## PREPARATION

HTA N°	QUANTITY	DESIGNATION	DATA
	1	CLAMPING TOOL	ESPECIAL ELEVATED TOOL
T15/ N1	1	TOOL HOLDERS	0 mm. (pre-setting)
T21/ N2	1	TOOL HOLDERS	0 mm. (pre-setting)
T22/ N3	1	TOOL HOLDERS	0 mm. (pre-setting)

Instructions to fix the clamping tool:

- 1.- Positioning the workpiece by the face to be machined with pins and screwing by the tabs to the clamping tool.  
Proceed with the prefinish milling
- 2.- Release the piece and check the deformation. If necessary straighten, then perform the operation 60 straightening.
- 3.- Positioning the workpiece by the face to be machined with pins and screwing by the tabs to the clamping tool.  
Proceed with the finish milling



PREPARED BY	Luis Urrutia	DATE	20/07/2016	APPROVED BY	Carlos Aguilar	DATE	
-------------	--------------	------	------------	-------------	----------------	------	--



# OPERATIONS SHEET



**LEADING**  
METAL-MECHANIC SOLUTIONS

PART NUMBER	<b>Bottom Plate Target Cassette</b>			
DESIGNATION	<b>Bottom Plate Target Cassette</b>	OP	<b>80</b>	
DESCRIPTION	<b>INTERIOR FACE PREFINISH-FINISH MILLING</b>	M/C	<b>02-05</b>	

SHEET N° 1 OF 1  
REVISION 0

MACHINING PROGRAM ...

## TOOLS + TOOLING

TOOL N°	QUANTITY	DESIGNATION	REFERENCE
T15 / N1	1	TOOL HOLDERS DV40 Ø 16	DV40BWN16063M (KENNAMETAL)
	1	MILLING CUTTER Ø 16	<b>1P330-1600-XA 1620 (SANDVIK)</b>
T21 / N2	1	TOOL HOLDERS DV40 Ø 6	DV40BWN06050M (KENNAMETAL)
	1	MILLING CUTTER Ø 4	<b>1P330-0400-XA 1620 (SANDVIK)</b>
T22 / N2	1	TOOL HOLDERS DV40 Ø 6	DV40BWN06050M (KENNAMETAL)
	1	MILLING CUTTER Ø 2	<b>1P330-0200-XA 1620 (SANDVIK)</b>

PREPARED BY	Luis Urrutia	DATE	20/07/2016	APPROVED BY	Carlos Aguilar	DATE	
-------------	--------------	------	------------	-------------	----------------	------	--

# OPERATIONS SHEET



**LEADING**  
METAL-MECHANIC SOLUTIONS

PART NUMBER	<b>Bottom Plate Target Cassette</b>			 SHEET N° 1 OF 1 REVISION 0
DESIGNATION	<b>Bottom Plate Target Cassette</b>	OP	<b>90</b>	
DESCRIPTION	<b>EXTERIOR FACE PREFINISH-FINISH MILLING</b>	M/C	<b>02-05</b>	

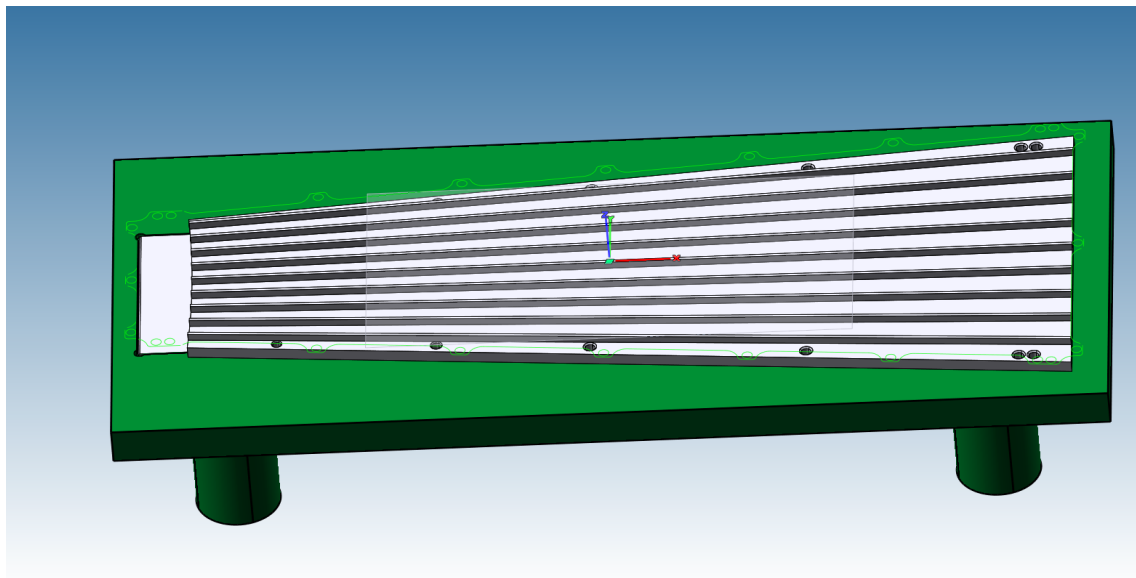
MACHINING PROGRAM ...

## PREPARATION

HTA N°	QUANTITY	DESIGNATION	DATA
	1	CLAMPING TOOL	ESPECIAL ELEVATED TOOL
T2/ N1	1	TOOL HOLDERS	0 mm. (pre-setting)
T15/ N2	1	TOOL HOLDERS	0 mm. (pre-setting)
T20/ N3	1	TOOL HOLDERS	0 mm. (pre-setting)
T23/ N4	1	TOOL HOLDERS	0 mm. (pre-setting)
T24/ N5	1	TOOL HOLDERS	0 mm. (pre-setting)
T25/ N6	1	TOOL HOLDERS	0 mm. (pre-setting)

Instructions to fix the clamping tool:

- 1.- Positioning the workpiece by the face to be machined with pins and screwing by the tabs to the clamping tool. Proceed with the prefinish milling
- 2.- Release the piece and check the deformation. If necessary straighten, then perform the operation 60 straightening.
- 3.- Positioning the workpiece by the face to be machined with pins and screwing by the tabs to the clamping tool. Proceed with the finish milling



PREPARED BY	Luis Urrutia	DATE	20/07/2016	APPROVED BY	Carlos Aguilar	DATE	
-------------	--------------	------	------------	-------------	----------------	------	--

# OPERATIONS SHEET



**LEADING**  
METAL-MECHANIC SOLUTIONS

PART NUMBER	<b>Bottom Plate Target Cassette</b>			
DESIGNATION	<b>Bottom Plate Target Cassette</b>	OP	<b>90</b>	
DESCRIPTION	<b>EXTERIOR FACE PREFINISH-FINISH MILLING</b>	M/C	<b>02-05</b>	SHEET N° 1 OF 1 REVISION 0

MACHINING PROGRAM ...

## TOOLS + TOOLING

TOOL N°	QUANTITY	DESIGNATION	REFERENCE
T2 / N1	1	TOOL HOLDERS DV40 Ø 20	DV40BWN20063M (KENNAMETAL)
	1	BODY HEAD ADAPTER	E16-A20-SS-070 (SANDVIK)
	1	MILLING HEAD Ø16 RADIUS 2	<b>316-16SM450C16020P 1030</b> (SANDVIK)
	1	KEY	5680 093-03(SANDVIK)
T15 / N2	1	TOOL HOLDERS DV40 Ø 16	DV40BWN16063M (KENNAMETAL)
	1	MILLING CUTTER Ø 16	<b>1P330-1600-XA 1620</b> (SANDVIK)
T20 / N3	1	TOOL HOLDERS DV40 Ø 8	DV40BWN08050M (KENNAMETAL)
	1	MILLING CUTTER Ø 8 RADIUS 1	<b>2S340-0800-100-MA 1640</b> (SANDVIK)
T23 / N4	1	TOOL HOLDERS DV40 Ø 8	DV40BWN08050M (KENNAMETAL)
	1	MILLING CUTTER Ø 8	<b>1P330-0800-XA 1620</b> (SANDVIK)
T24 / N5	1	TOOL HOLDERS DV40 Ø 6	DV40BWN06050M (KENNAMETAL)
	1	MILLING CUTTER Ø 3	<b>1P330-0300-XA 1620</b> (SANDVIK)
T25 / N6	1	TOOL HOLDERS DV40 Ø 6	DV40BWN06050M (KENNAMETAL)
	1	DRILL Ø 3	<b>860.1-0300-021A0-PM 4234</b> (SANDVIK)

PREPARED BY	Luis Urrutia	DATE	20/07/2016	APPROVED BY	Carlos Aguilar	DATE	
-------------	--------------	------	------------	-------------	----------------	------	--

# OPERATIONS SHEET



**LEADING**  
METAL-MECHANIC SOLUTIONS

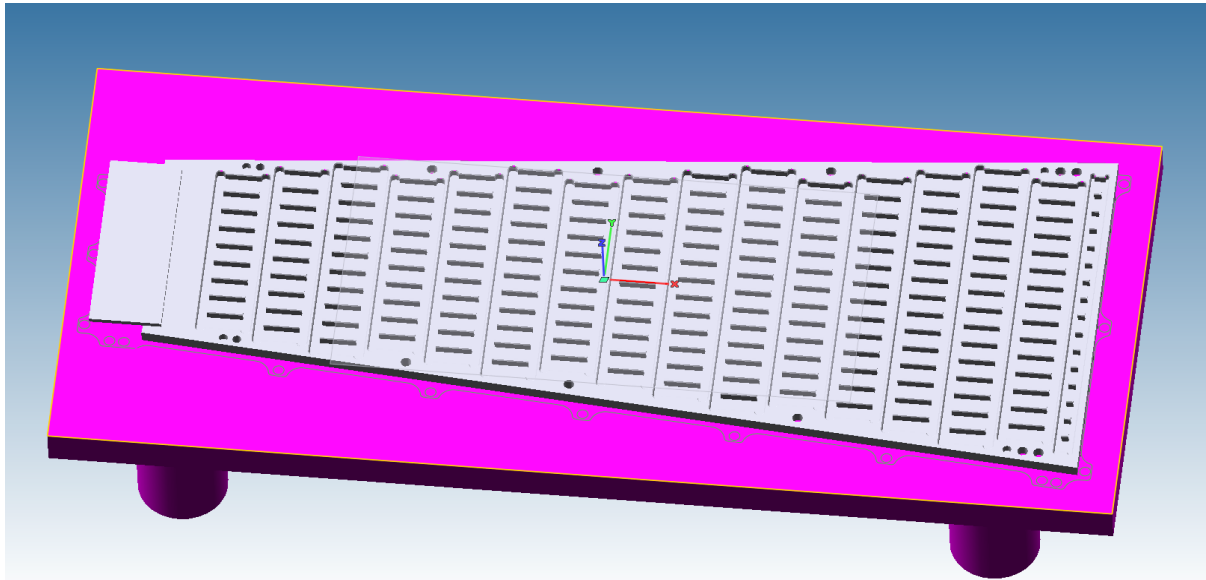
PART NUMBER	<b>Bottom Plate Target Cassette</b>			 Nº ES 001207    Nº ES04/0167/16    Nº ES04/1716
DESIGNATION	<b>Bottom Plate Target Cassette</b>	OP	<b>100</b>	
DESCRIPTION	<b>EXTERIOR PROFILE, DRILLS AND FIXED</b>	M/C	<b>02-05</b>	SHEET Nº 1 OF 1 REVISION 0
MACHINING PROGRAM	...			

## PREPARATION

HTA Nº	QUANTITY	DESIGNATION	DATA
	1	CLAMPING TOOL	ESPECIAL ELEVATED TOOL
T2/ N1	1	TOOL HOLDERS	0 mm. (pre-setting)
T15/ N2	1	TOOL HOLDERS	0 mm. (pre-setting)
T24/ N3	1	TOOL HOLDERS	0 mm. (pre-setting)

Instructions to fix the clamping tool:

- 1.- Positioning the workpiece by the other face to be machined with pins and screwing by the tabs to the clamping tool.
- 2.- Start machining, and using staples as the tabs disappear.



PREPARED BY	Luis Urrutia	DATE	20/07/2016	APPROVED BY	Carlos Aguilar	DATE	
-------------	--------------	------	------------	-------------	----------------	------	--

# OPERATIONS SHEET



**LEADING**  
METAL-MECHANIC SOLUTIONS

PART NUMBER	<b>Bottom Plate Target Cassette</b>			  
DESIGNATION	<b>Bottom Plate Target Cassette</b>	OP	<b>100</b>	
DESCRIPTION	<b>EXTERIOR PROFILE, DRILLS AND FIXED</b>	M/C	<b>02-05</b>	
				SHEET N° 1 OF 1 REVISION 0

MACHINING PROGRAM ...

## TOOLS + TOOLING

TOOL N°	QUANTITY	DESIGNATION	REFERENCE
T2 / N1	1	TOOL HOLDERS DV40 Ø 20	DV40BWN20063M (KENNAMETAL)
	1	BODY HEAD ADAPTER	E16-A20-SS-070 (SANDVIK)
	1	MILLING HEAD Ø16 RADIUS 2	<b>316-16SM450C16020P 1030</b> (SANDVIK)
	1	KEY	5680 093-03(SANDVIK)
T15 / N2	1	TOOL HOLDERS DV40 Ø 16	DV40BWN16063M (KENNAMETAL)
	1	MILLING CUTTER Ø 16	<b>1P330-1600-XA 1620</b> (SANDVIK)
T24 / N3	1	TOOL HOLDERS DV40 Ø 6	DV40BWN06050M (KENNAMETAL)
	1	MILLING CUTTER Ø 3	<b>1P330-0300-XA 1620</b> (SANDVIK)

PREPARED BY	Luis Urrutia	DATE	20/07/2016	APPROVED BY	Carlos Aguilar	DATE	
-------------	--------------	------	------------	-------------	----------------	------	--

# OPERATIONS SHEET



**LEADING**  
METAL-MECHANIC SOLUTIONS

PART NUMBER	<b>Bottom Plate Target Cassette</b>			 SGS # ES 0012073    SGS # ES04/0167/AE    SGS # ES04/0167/AE
DESIGNATION	<b>Bottom Plate Target Cassette</b>	OP	<b>110</b>	
DESCRIPTION	<b>TRIMMING</b>	M/C	..*	SHEET N° 1 OF 1 REVISION 0

MACHINING PROGRAM: ...

## PREPARATION

HTA N°	QUANTITY	DESIGNATION	DATA
--------	----------	-------------	------

Process:

- 1.- Place the piece on the worktable.
- 2.- Deburr milling remains.

PREPARED BY	Luis Urrutia	DATE	20/07/2016	APPROVED BY	Carlos Aguilar	DATE	
-------------	--------------	------	------------	-------------	----------------	------	--

# OPERATIONS SHEET



**LEADING**  
METAL-MECHANIC SOLUTIONS

PART NUMBER	<b>Bottom Plate Target Cassette</b>			
DESIGNATION	<b>Bottom Plate Target Cassette</b>	OP	<b>110</b>	
DESCRIPTION	<b>TRIMMING</b>	M/C	..-..	SHEET N° 1 OF 1 REVISION 0

MACHINING PROGRAM ...

## TOOLS + TOOLING

TOOL N°	QUANTITY	DESIGNATION	REFERENCE
	1	GRINDER MACHINE	GG27LC (BOSCH)
	1	MICRO GRINDER	<b>Z - 5095 (FLEXOVIT)</b>

PREPARED BY	Luis Urrutia	DATE	20/07/2016	APPROVED BY	Carlos Aguilar	DATE	
-------------	--------------	------	------------	-------------	----------------	------	--