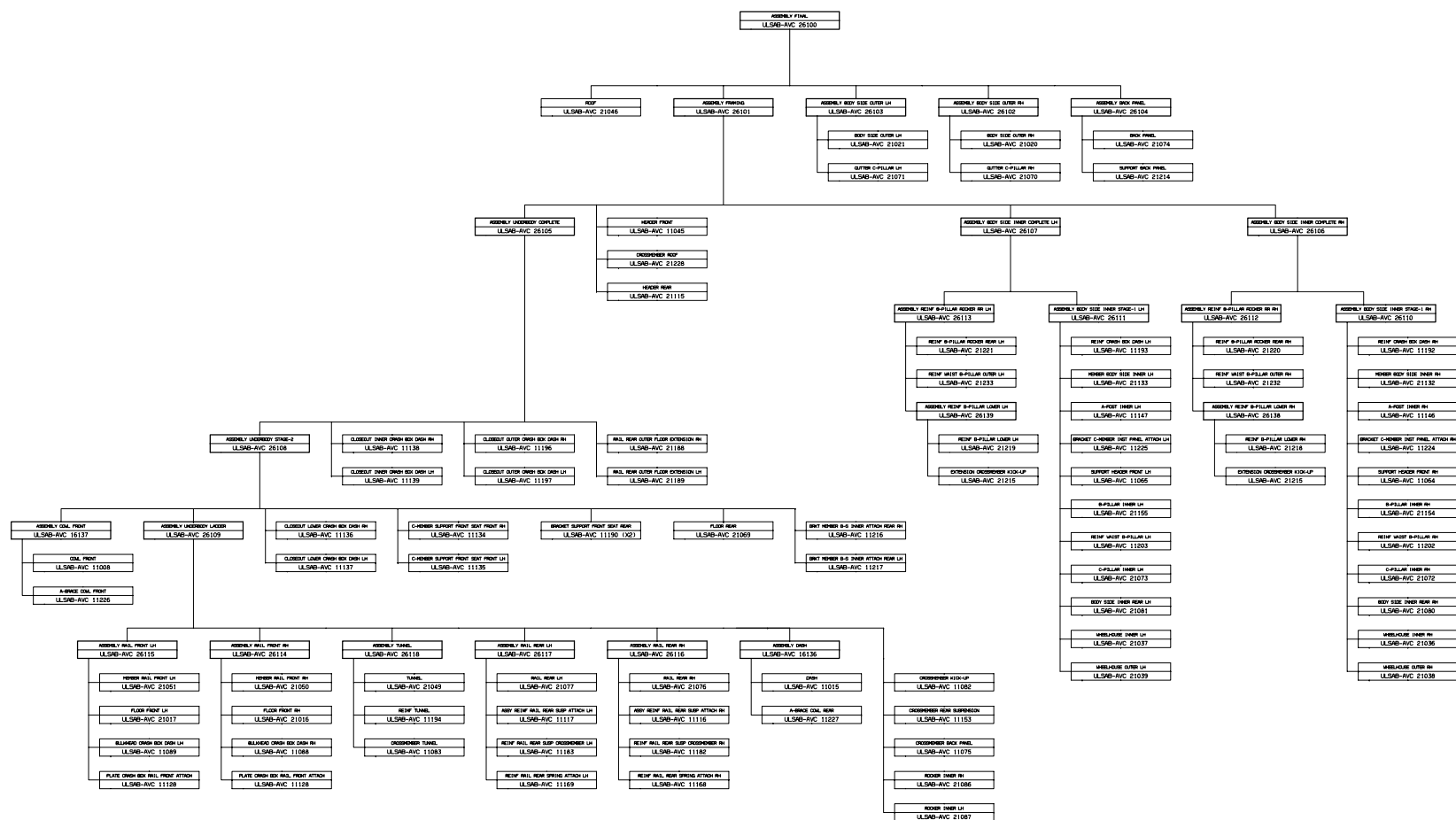


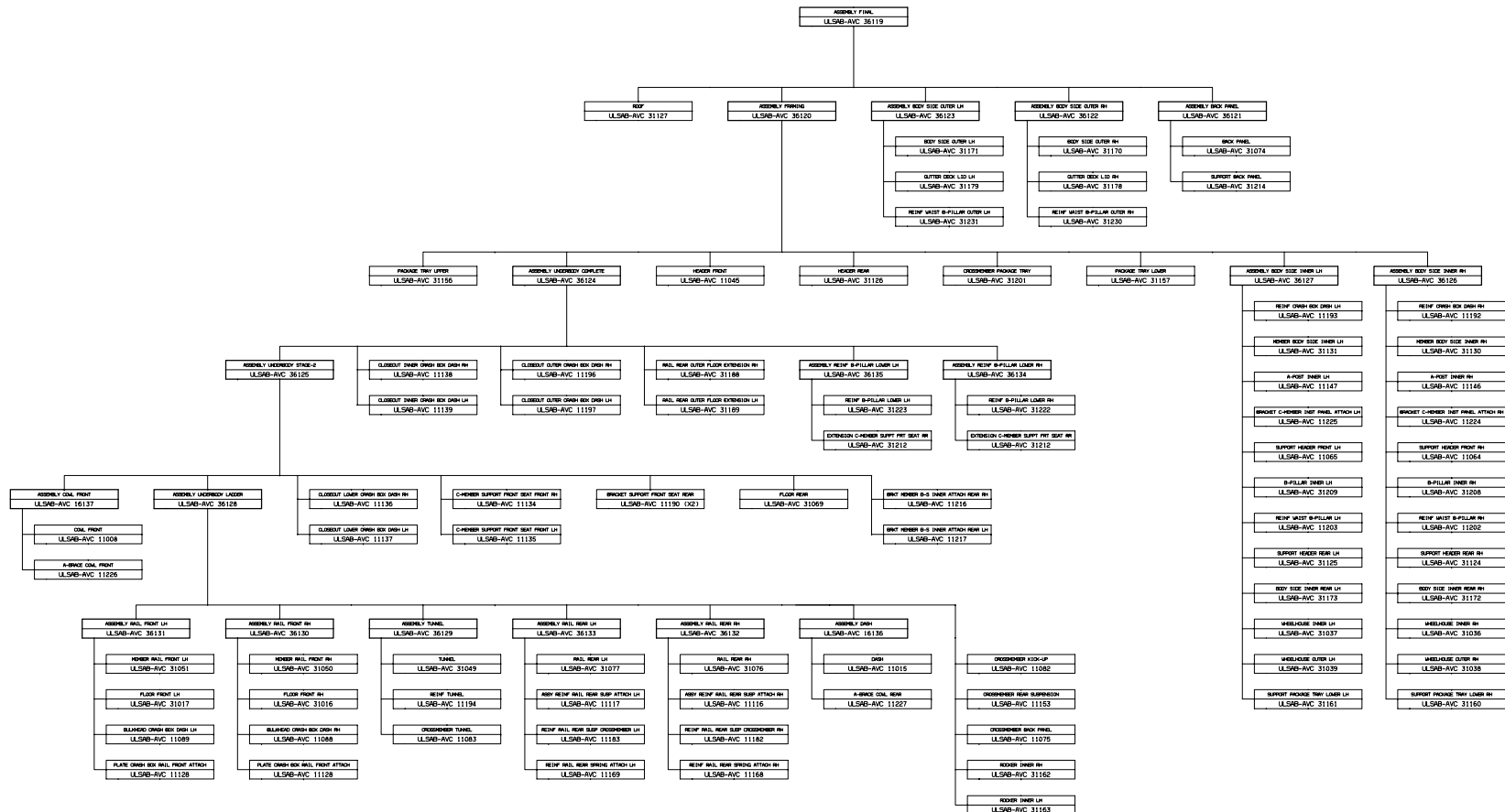
8. Manufacturing Engineering

8.1 Assembly Trees - Body Structure

8.1 Assembly Tree - C-Class



8.1 Assembly Tree - PNGV-Class



8.2 Joining Process

8.2.1 Joining Process Index

8.2.1 Assembly - Body Structure

Part No.	C-Class Body-in-White Assembly Name
AVC 1 6136	Assembly Dash (x2)
AVC 1 6137	Assembly Cowl Front (x2)
AVC 2 6100	Assembly Final
AVC 2 6101	Assembly Framing
AVC 2 6102	Assembly Body Side Outer RH
AVC 2 6103	Assembly Body Side Outer LH
AVC 2 6104	Assembly Back Panel
AVC 2 6105	Assembly Underbody Complete
AVC 2 6106	Assembly Body Side Inner Complete RH
AVC 2 6107	Assembly Body Side Inner Complete LH
AVC 2 6108	Assembly Underbody Stage 2
AVC 2 6109	Assembly Underbody Ladder
AVC 2 6110	Assembly Body Side Inner Stage 1 - RH
AVC 2 6111	Assembly Body Side Inner Stage 1 - LH
AVC 2 6112	Assembly Reinf B-Pillar Rocker Rear RH
AVC 2 6113	Assembly Reinf B-Pillar Rocker Rear LH
AVC 2 6114	Assembly Rail Front RH
AVC 2 6115	Assembly Rail Front LH
AVC 2 6116	Assembly Rail Rear RH
AVC 2 6117	Assembly Rail Rear LH
AVC 2 6118	Assembly Tunnel
AVC 2 6138	Assembly Reinf B-Pillar Lower RH
AVC 2 6139	Assembly Reinf B-Pillar Lower LH

8.2.1 Assembly - Body Structure

Part No.	PNGV-Class Body-in-White Assembly Name
AVC 1 6136	Assembly Dash (x2)
AVC 1 6137	Assembly Cowl Front (x2)
AVC 3 6119	Assembly Final
AVC 3 6120	Assembly Framing
AVC 3 6121	Assembly Back Panel
AVC 2 6122	Assembly Body Side Outer RH
AVC 2 6123	Assembly Body Side Outer LH
AVC 3 6124	Assembly Underbody Complete
AVC 3 6125	Assembly Underbody Stage 2
AVC 3 6126	Assembly Body Side Inner RH
AVC 3 6127	Assembly Body Side Inner LH
AVC 3 6128	Assembly Underbody Ladder
AVC 3 6129	Assembly Tunnel
AVC 3 6130	Assembly Rail Front RH
AVC 3 6131	Assembly Rail Front LH
AVC 3 6132	Assembly Rail Rear RH
AVC 3 6133	Assembly Rail Rear LH
AVC 3 6134	Assembly Reinf B-Pillar Lower RH
AVC 3 6135	Assembly Reinf B-Pillar Lower LH

8.2.2 Joining Process Sheets

AVC 26114 Joining Process

Laser Weld 1 > 4	340 mm
Laser Weld 2 > 4	1922 mm
Laser Weld 3 > 2+4	1173 mm

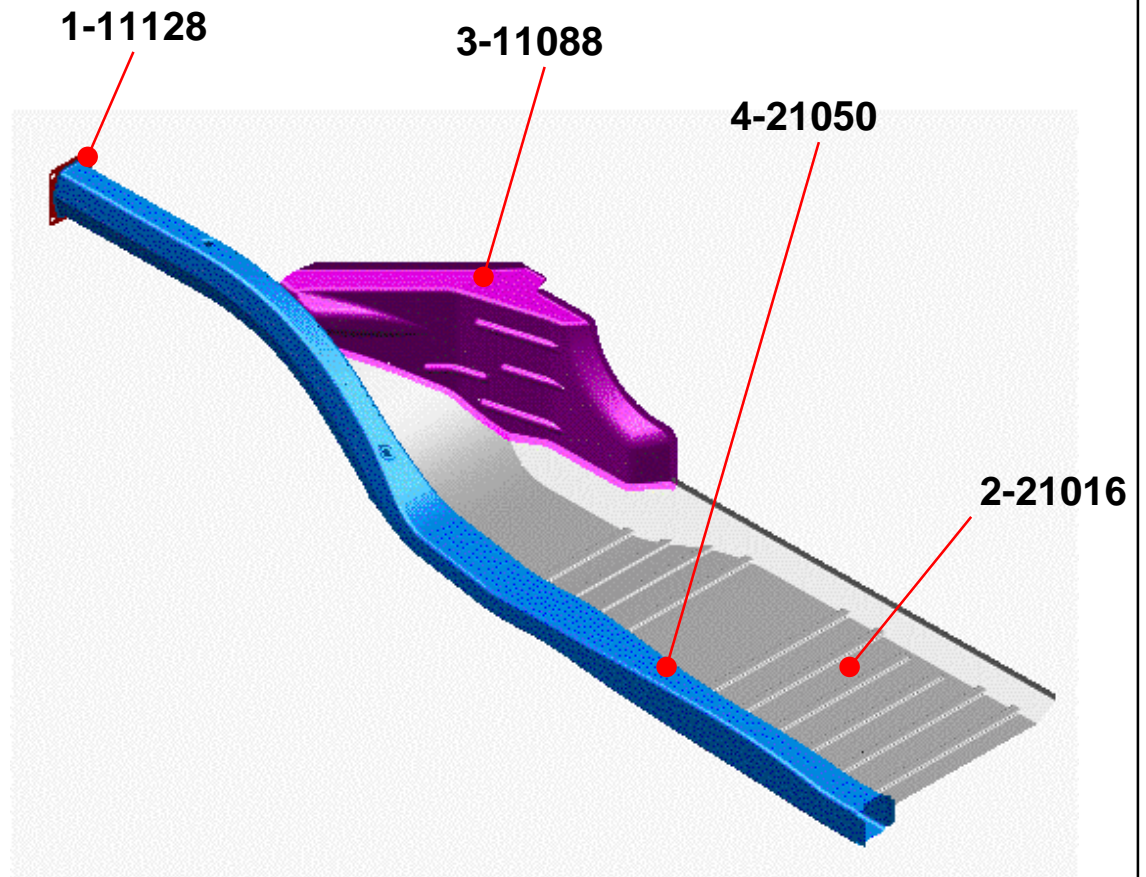
AVC 26114 Total Welds

Laser Weld	3435 mm
Spot Weld	-

AVC 26115 Total Welds

Laser Weld	3435 mm
Spot Weld	-

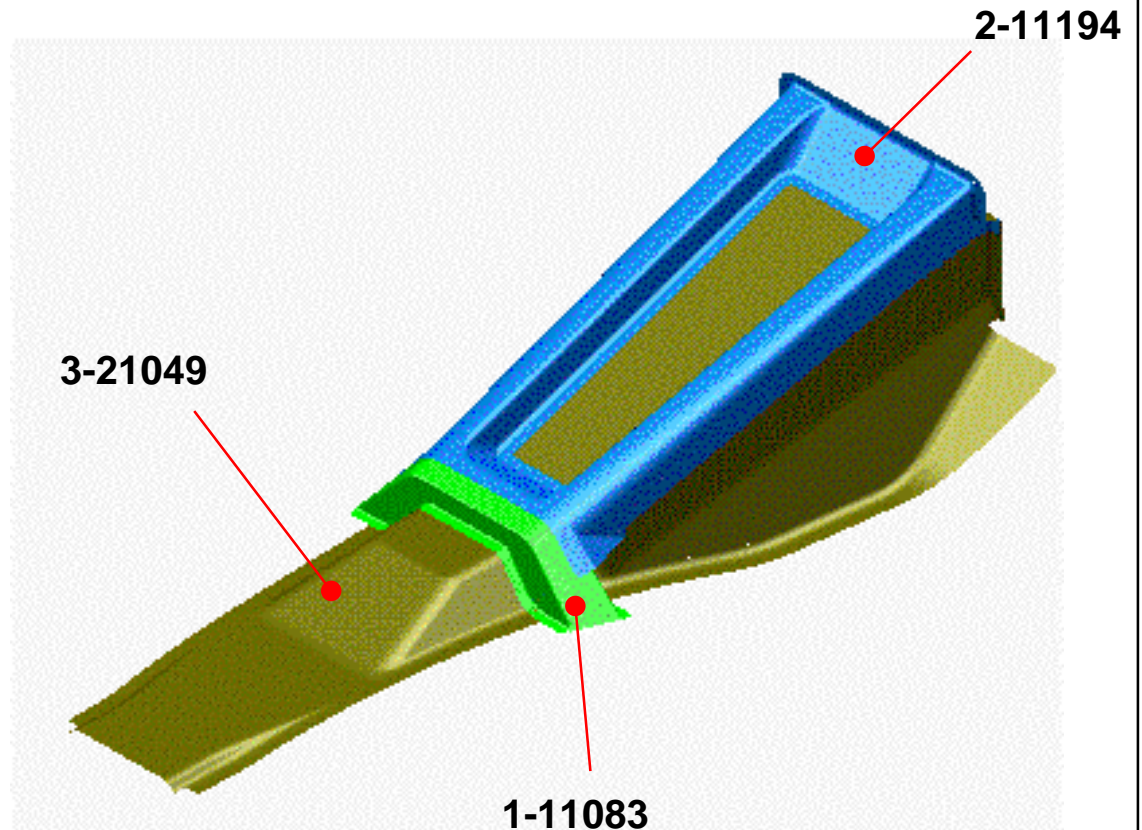
Right Hand (RH)
Assembly shown



Joining Process

Laser Weld 1 > 3
Laser Weld 2 > 1+3

658 mm
3491mm



AVC 26118 Total Welds

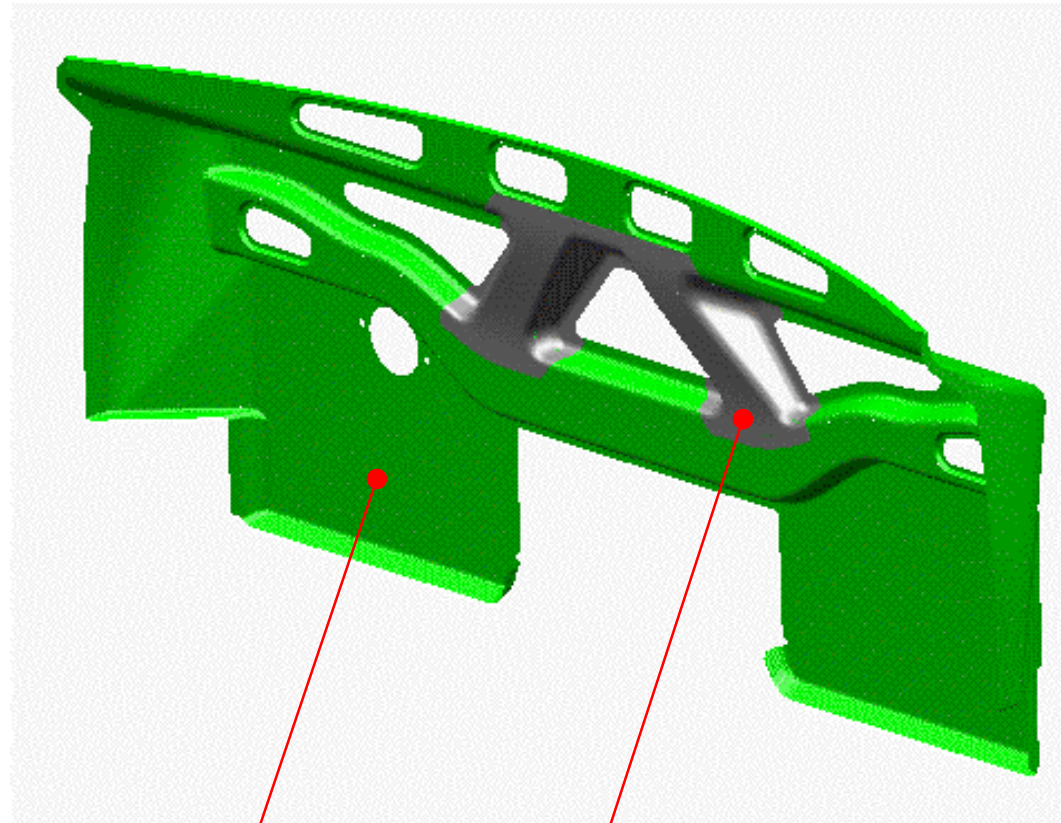
Laser Weld
Spot Weld

4149 mm
-

Joining Process

Laser Weld 1 > 2

1200 mm



AVC 16136 Total Welds

Laser Weld
Spot Weld

1200 mm
-

2-11015

1-11227

Right Hand (RH)
Assembly shown

Joining Process

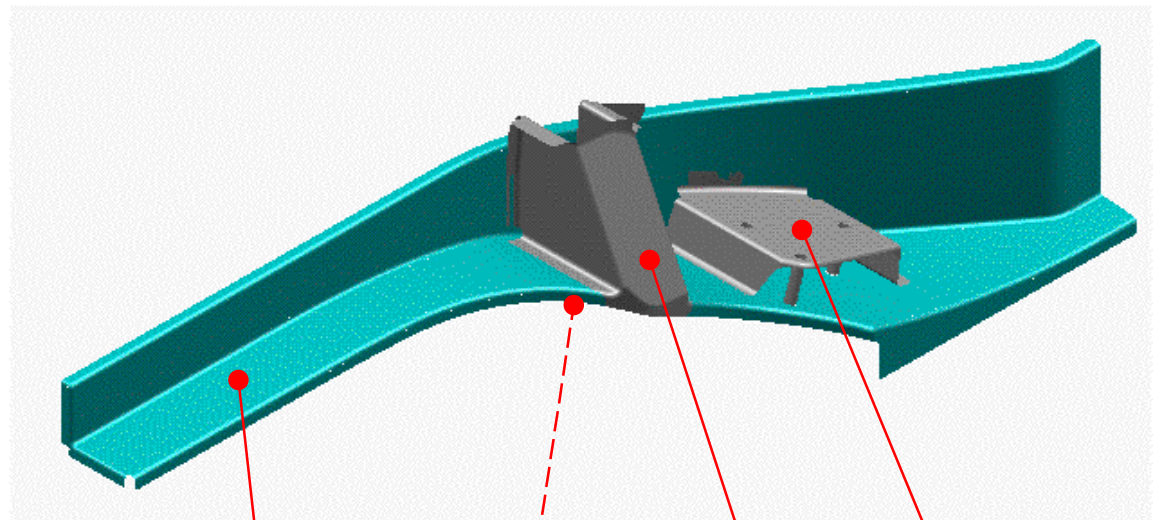
Spot Weld 1 > 4	12
Spot Weld 2 > 1+4	12
Spot Weld 3 > 4	12

AVC 26116 Total Welds

Laser Weld	-
Spot Weld	36

AVC 26117 Total Welds

Laser Weld	-
Spot Weld	36



4-21076

1-11168

2-11182

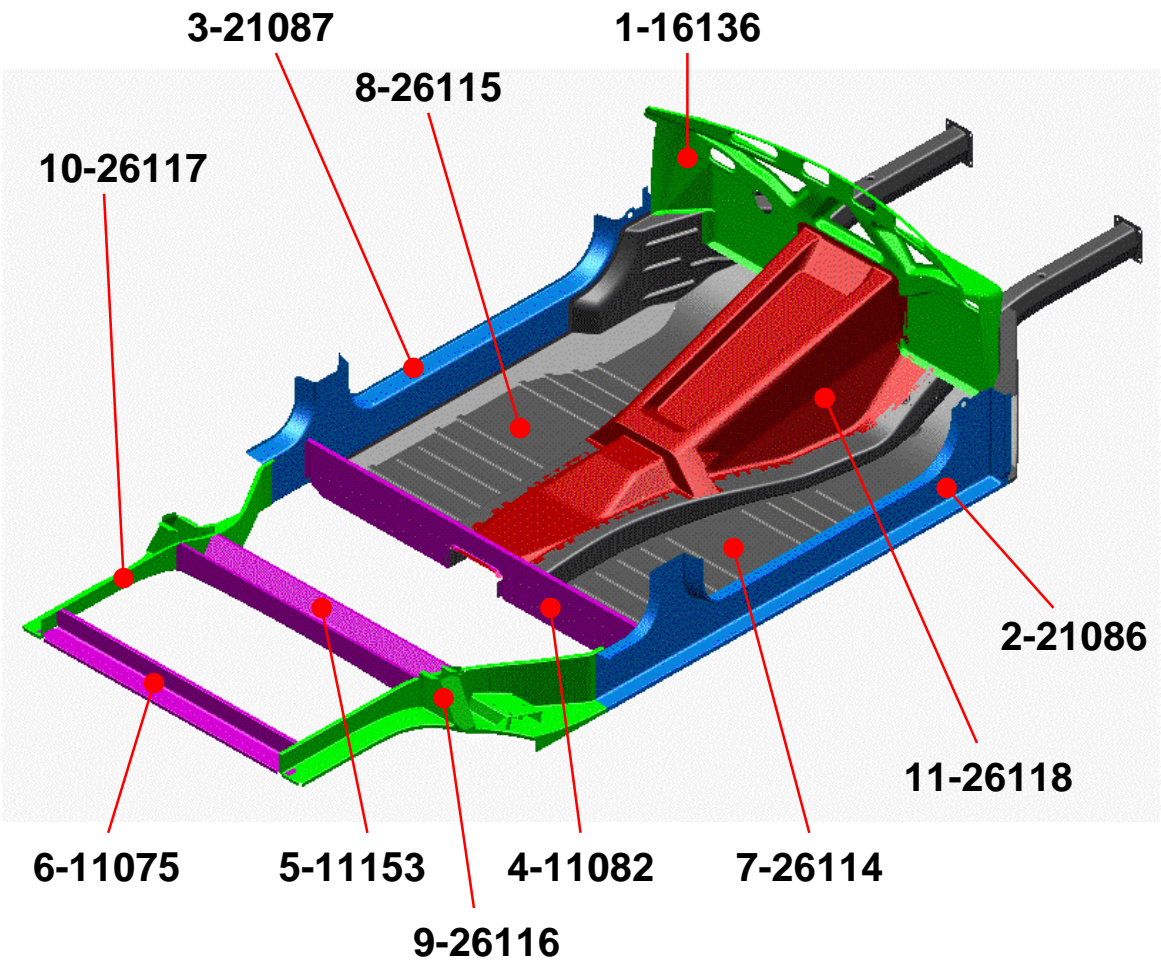
3-11116

Joining Process

Laser Weld	11 > 7+8	3342 mm
Adhesive	11 > 7+8	250 mm
Laser Weld	1 > 7+8+11	80 mm
Spot Weld	1 > 7+8+11	52
Laser Weld	4 > 7+8	1200 mm
Spot Weld	4 > 7+8+11	18
Laser Weld	2 > 7	411 mm
Spot Weld	2 > 4+7	58
Laser Weld	3 > 8	411 mm
Spot Weld	3 > 4+8	58
Spot Weld	9 > 2+5+6	26
Spot Weld	10 > 3+5+6	26

AVC 26109 Total Welds

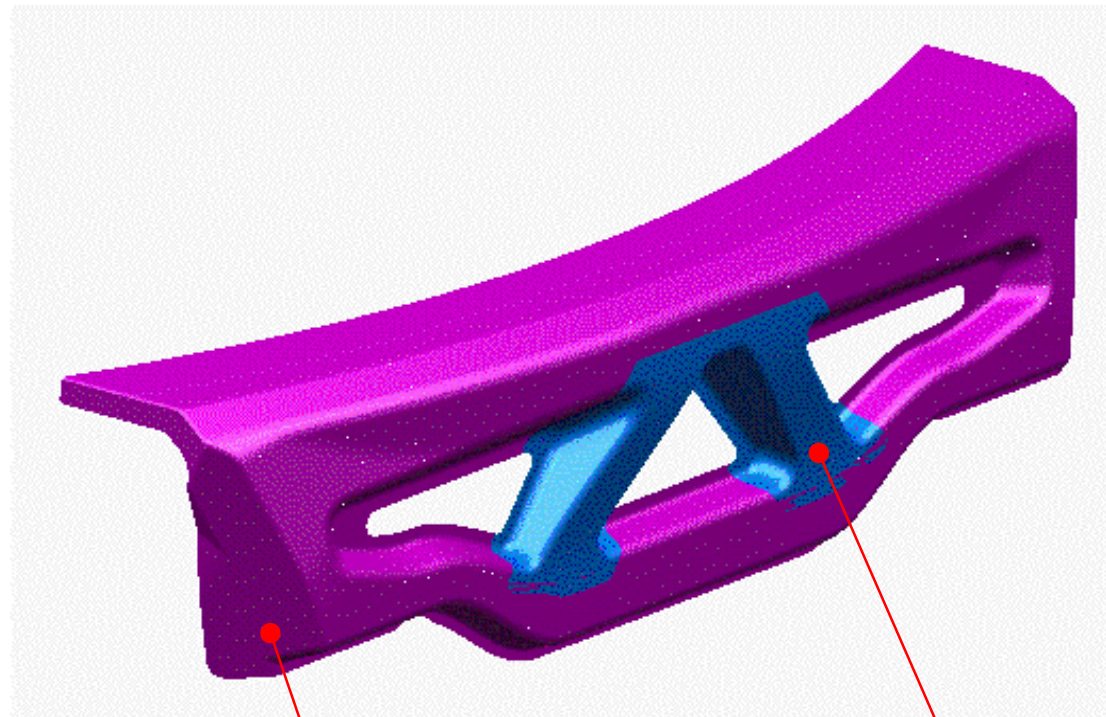
Laser Weld	5444 mm
Spot Weld	238
Adhesive	250 mm



Joining Process

Laser Weld 1 > 2

900 mm



AVC 16137 Total Welds

Laser Weld
Spot Weld

900 mm
-

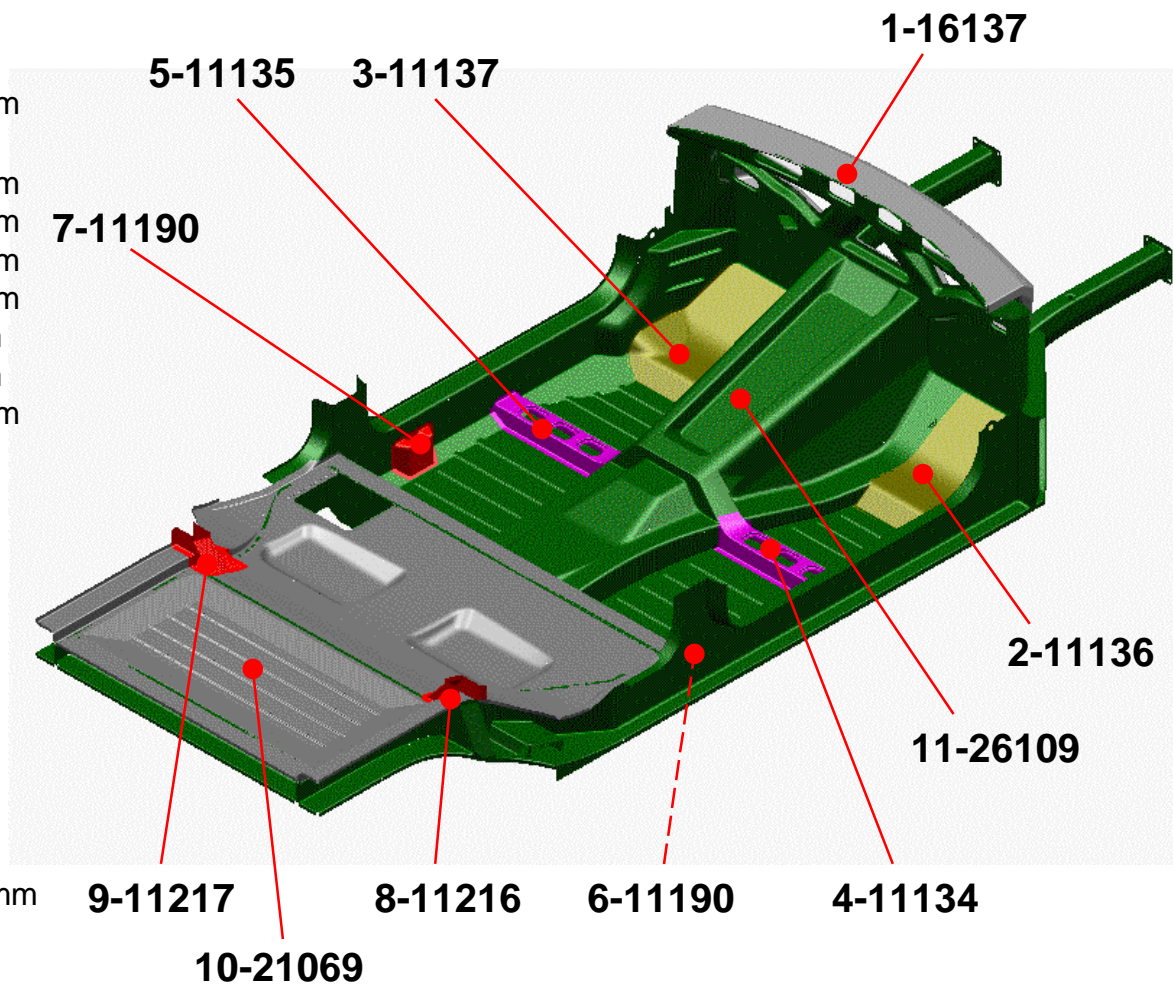
2-11008

1-11226

Joining Process

Laser Weld 1 > 11
 Spot Weld 1 > 11
 Laser Weld 2 > 11
 Laser Weld 3 > 11
 Laser Weld 4 > 11
 Laser Weld 5 > 11
 Laser Weld 6 > 11
 Laser Weld 7 > 11
 Laser Weld 10 > 11
 Spot Weld 10 > 11
 Spot Weld 8 > 10+11
 Spot Weld 9 > 10+11

3066 mm
 50
 1544 mm
 1544 mm
 1213 mm
 1213 mm
 526 mm
 526 mm
 5916 mm
 107
 18
 18



AVC 26108 Total Welds

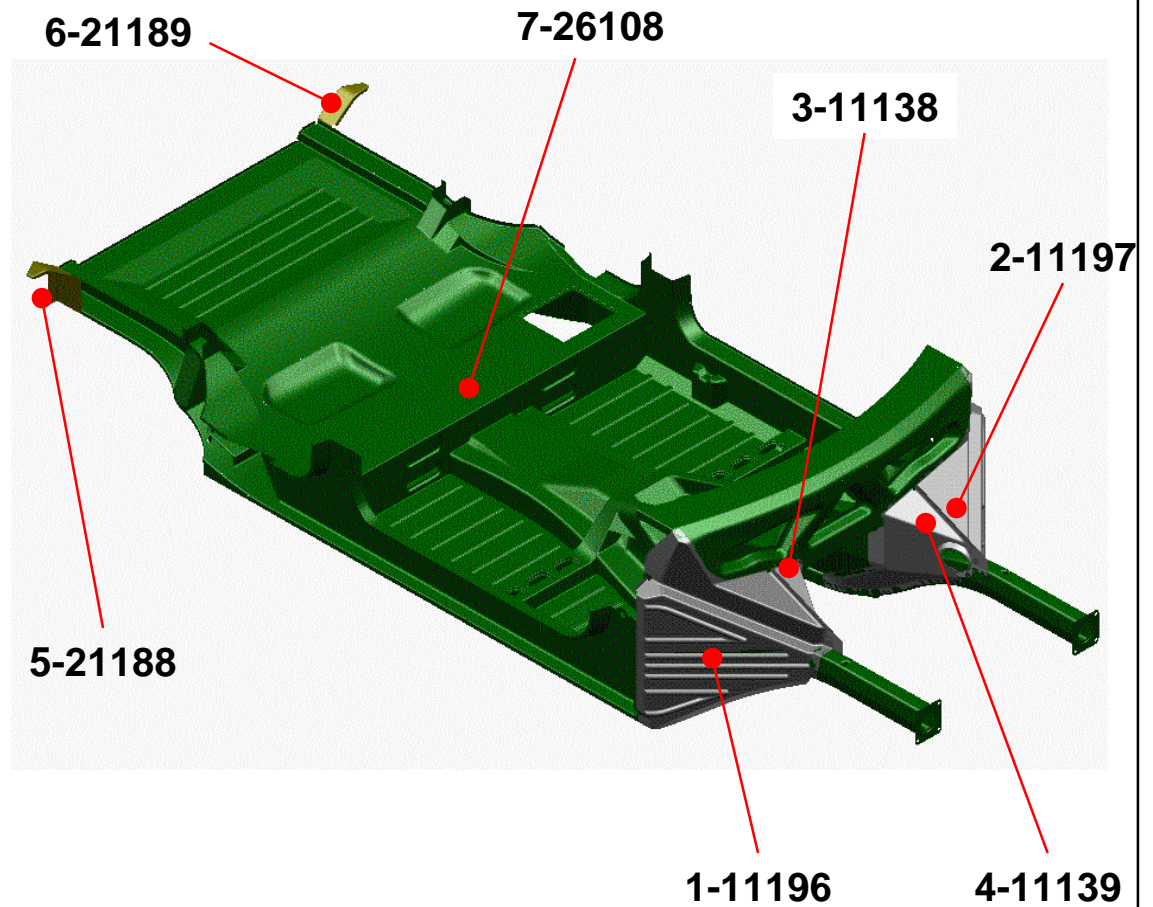
Laser Weld
 Spot Weld

15548 mm
 193

Joining Process

Laser Weld 1 > 7
 Laser Weld 2 > 7
 Laser Weld 3 > 1+7
 Laser Weld 4 > 2+7
 Laser Weld 5 > 7
 Laser Weld 6 > 7

2028 mm
 2028 mm
 1417 mm
 1417 mm
 208 mm
 208 mm



AVC 26105 Total Welds

Laser Weld
 Spot Weld

7306 mm
 -

Joining Process

Laser Weld 1 > 2	574 mm
Laser Weld 3 > 1+2	399 mm
Laser Weld 4 > 2	231 mm
Laser Weld 6 > 5	692 mm
Laser Weld 5 > 2	666 mm
Laser Weld 7 > 2+5	540 mm
Laser Weld 9 > 2+7	700 mm
Laser Weld 8 > 9+7	1253 mm
Laser Weld 10 > 2	689 mm
Laser Weld 11 > 1	210 mm

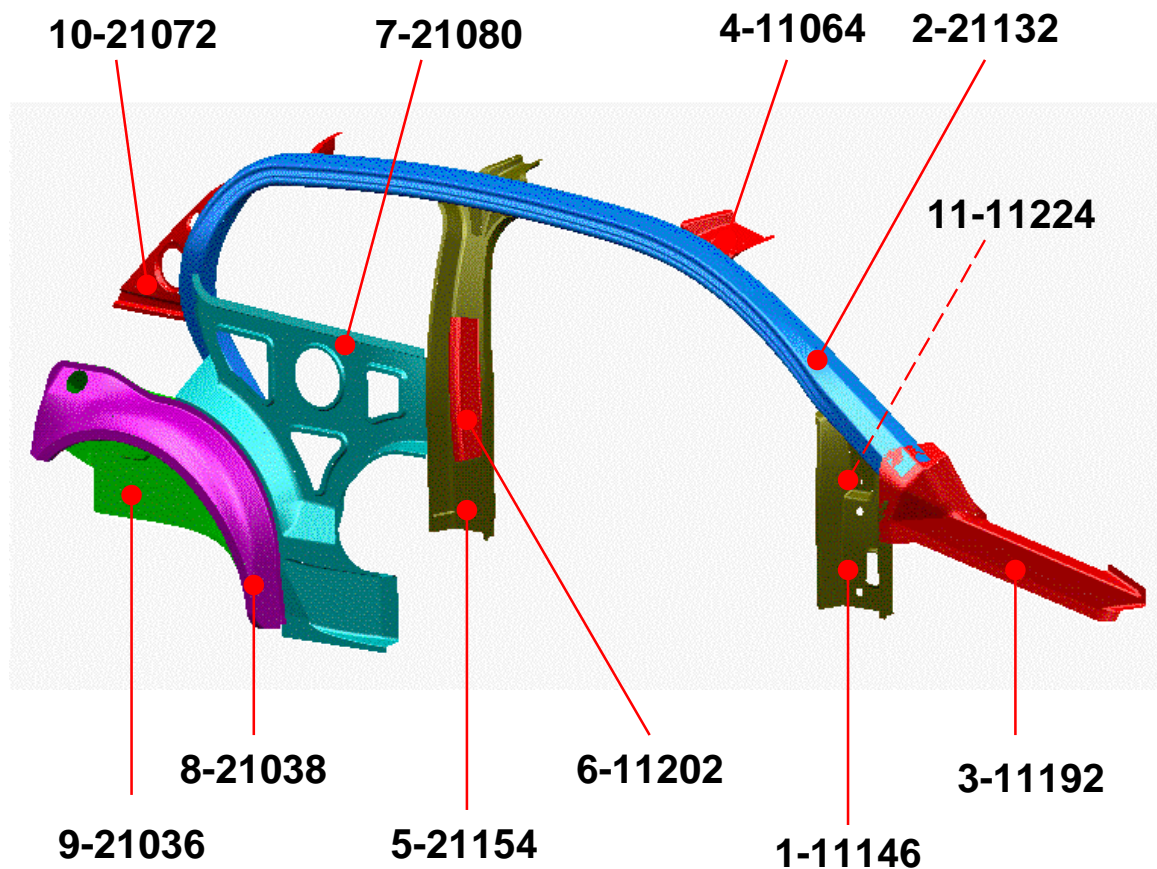
AVC 26110 Total Welds

Laser Weld	5954 mm
Spot Weld	-

AVC 26111 Total Welds

Laser Weld	5954 mm
Spot Weld	-

Right Hand (RH)
Assembly shown



Joining Process

Laser Weld 1 > 2	214 mm
Laser Weld 2 > 4	1027 mm
Laser Weld 3 > 4	438 mm

*Sub-Assembly

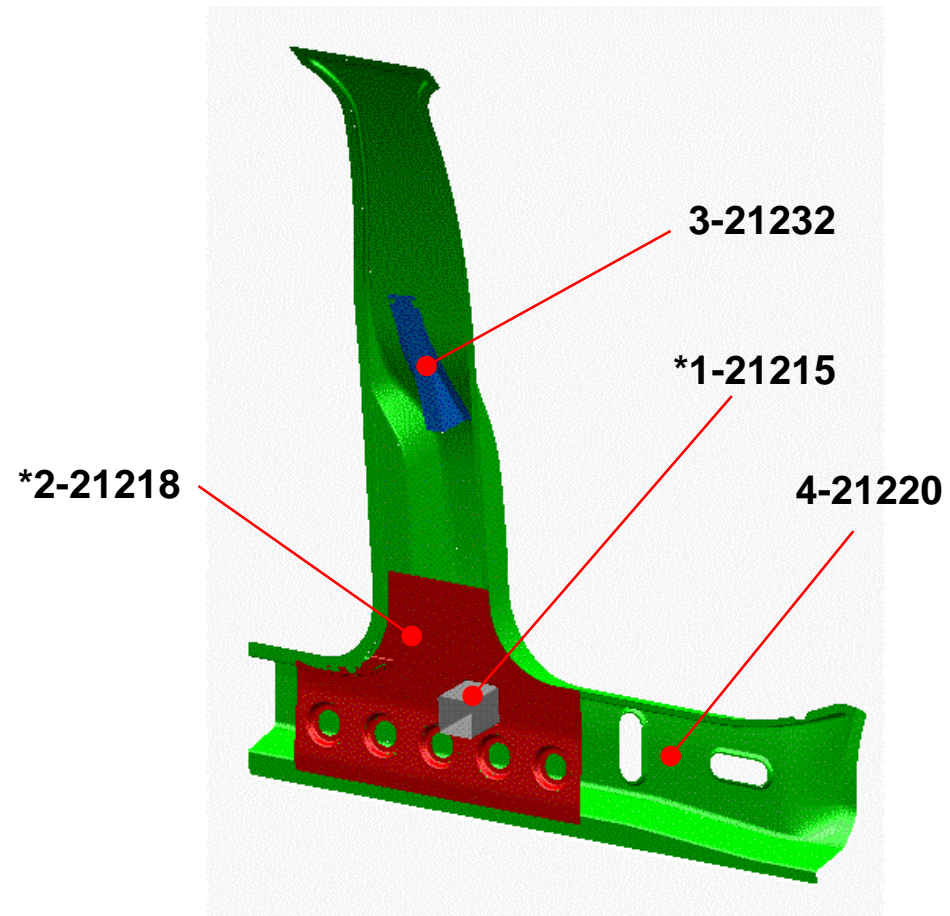
AVC 26112 Total Welds

Laser Weld	1679 mm
Spot Weld	-

AVC 26113 Total Welds

Laser Weld	1679 mm
Spot Weld	-

Right Hand (RH)
Assembly shown



Right Hand (RH)
Assembly shown

Joining Process

Laser Weld 1 > 2

3002 mm

AVC 26106 Total Welds

Laser Weld

3002 mm

Spot Weld

-

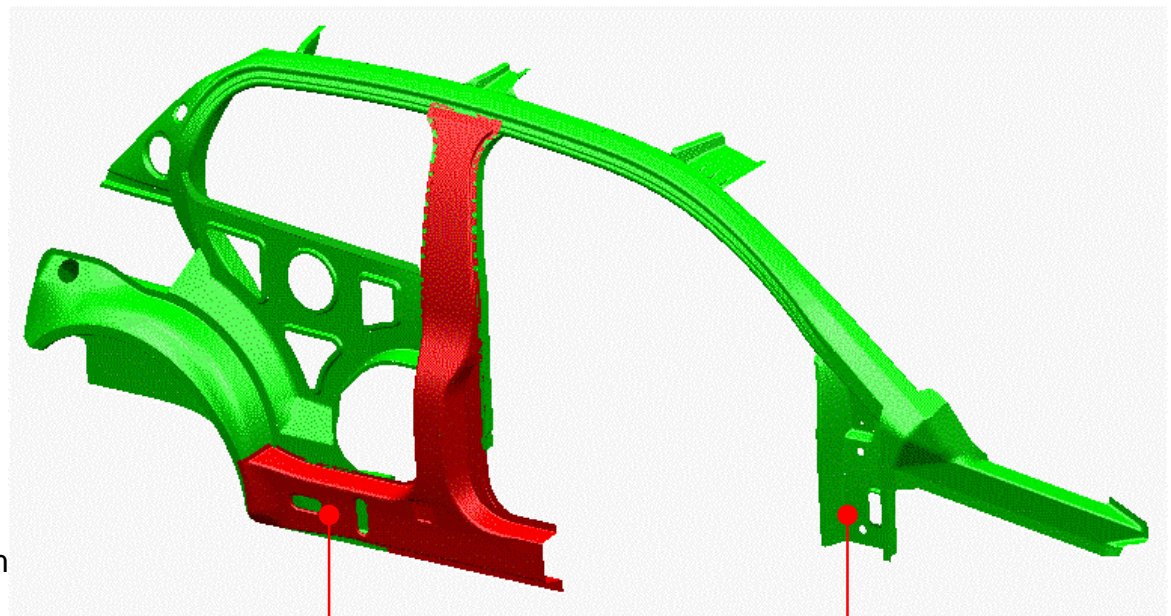
AVC 26107 Total Welds

Laser Weld

3002 mm

Spot Weld

-



1-26112

2-26110

Joining Process

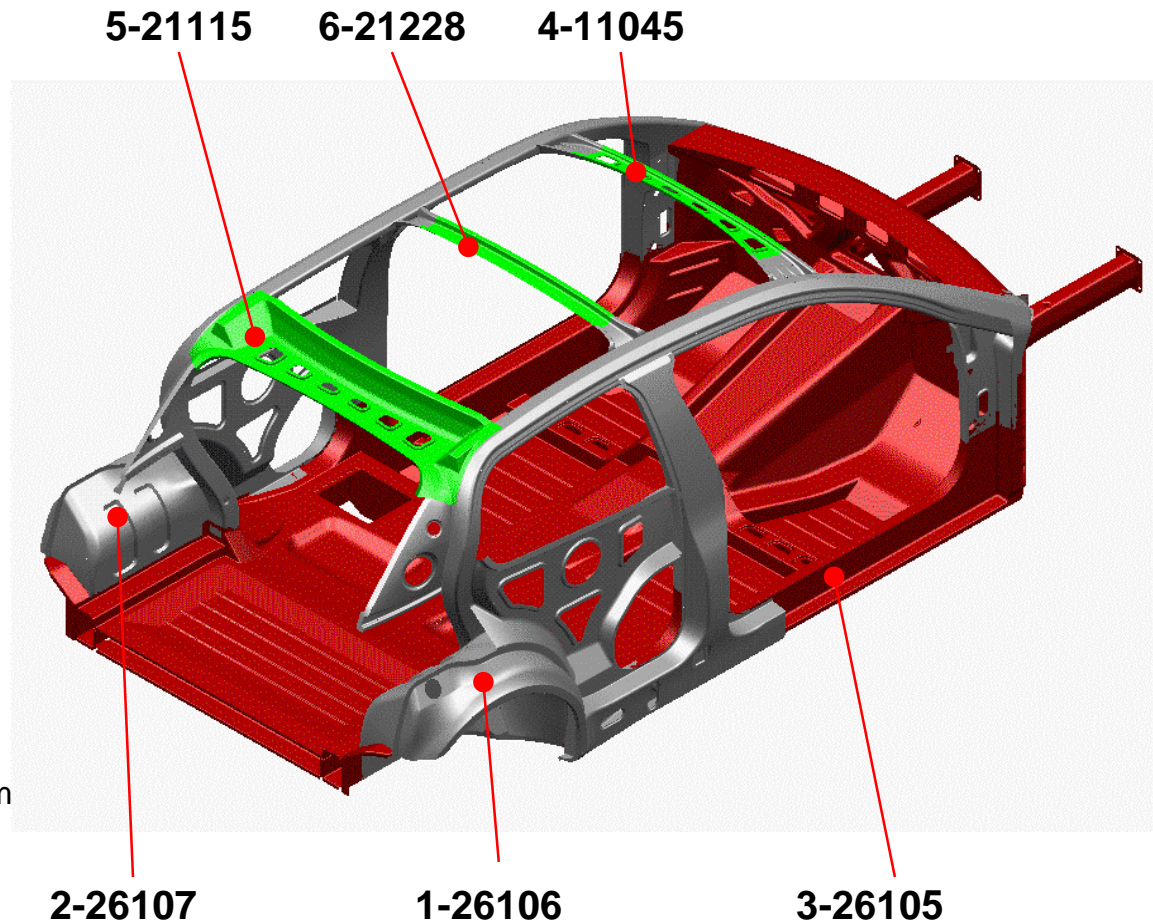
Laser Weld 1 > 3
Spot Weld 1 > 3
Adhesive 1 > 3
Laser Weld 2 > 3
Spot Weld 2 > 3
Adhesive 2 > 3
Laser Weld 4 > 1+2
Laser Weld 5 > 1+2
Laser Weld 6 > 1+2

5708 mm
42
678 mm
5708 mm
42
678 mm
778 mm
1876 mm
230 mm

AVC 26101 Total Welds

Laser Weld
Spot Weld
Adhesive

14300 mm
84
1356 mm



Right Hand (RH)
Assembly shown

Joining Process

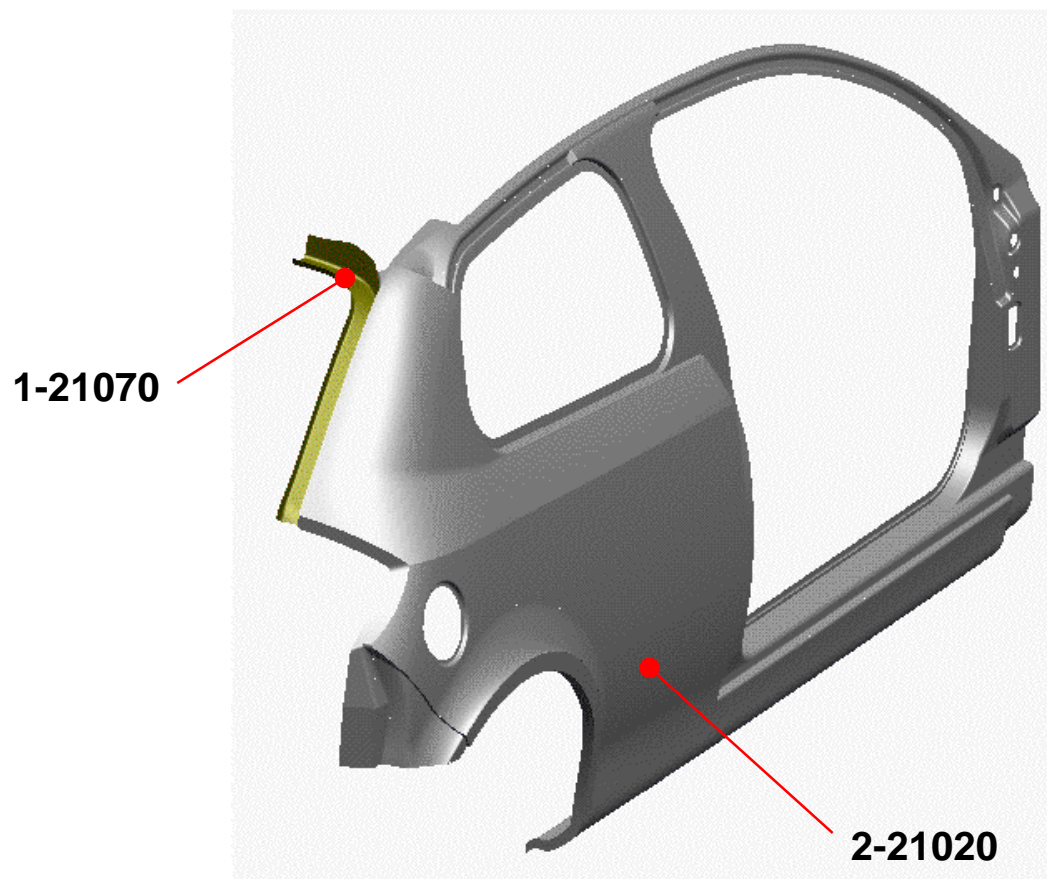
Spot Weld 1 > 2 18

AVC 26102 Total Welds

Laser Weld -
Spot Weld 18

AVC 26103 Total Welds

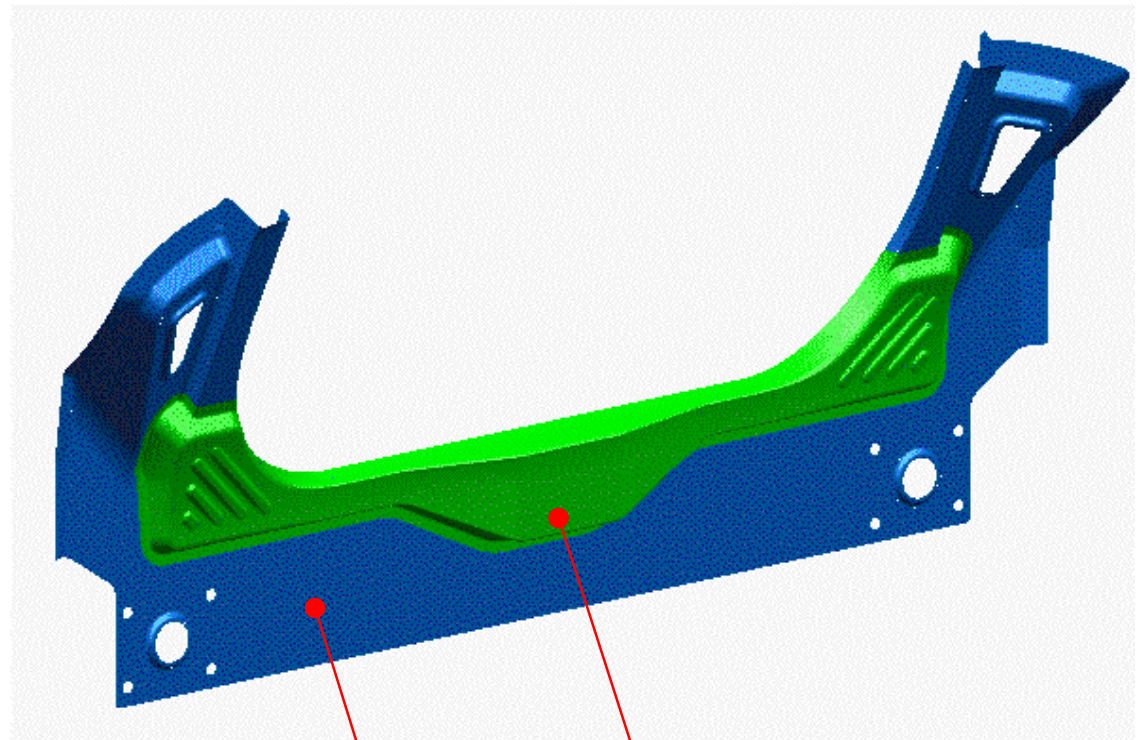
Laser Weld -
Spot Weld 18



Joining Process

Laser Weld 1 > 2

2854 mm



AVC 26104 Total Welds

Laser Weld

Spot Weld

2854 mm

-

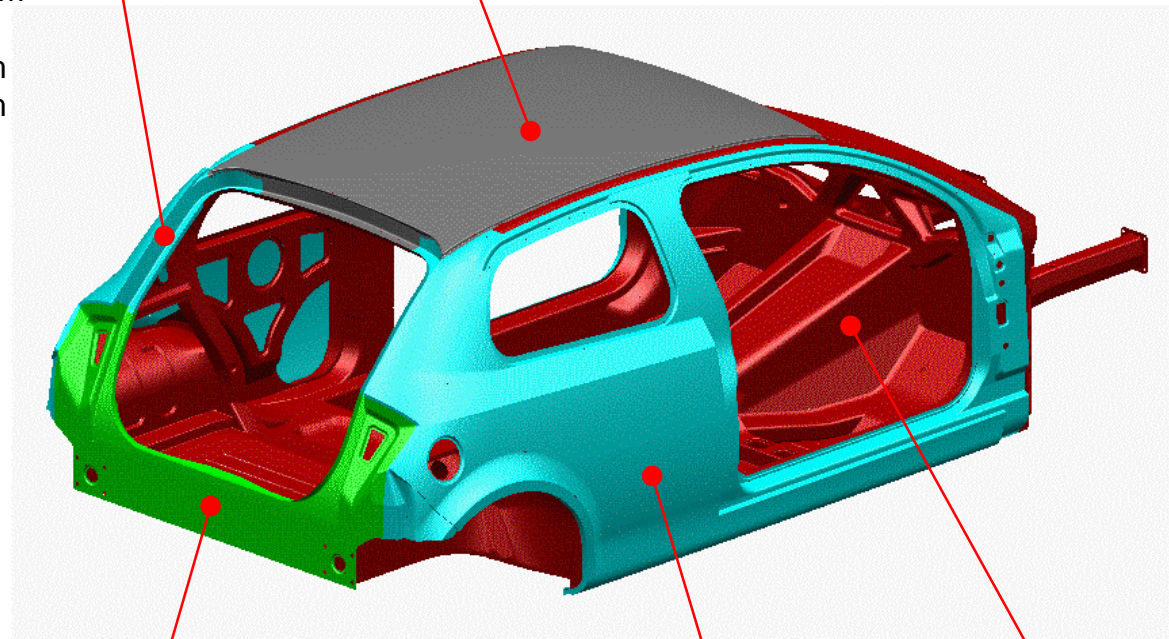
2-21074

1-21214

Joining Process

Laser Weld 1 > 5
 Spot Weld 1 > 5
 Laser Weld 2 > 5
 Spot Weld 2 > 5
 Laser Weld 3 > 1+2+5
 Laser Weld 4 > 5
 Spot Weld 4 > 1+2

2-26103 13251 mm
 30
 13251 mm
 30
3-21046 5668 mm
 2006 mm
 40 mm



AVC 26100 Total Welds

Laser Weld
 Spot Weld

34176 mm
 100

4-26104

1-26102

5-26101

Joining Process

Laser Weld 1 > 4
Laser Weld 2 > 4
Laser Weld 3 > 2+4

340 mm
1980 mm
1173 mm

AVC 36130 Total Welds

Laser Weld
Spot Weld

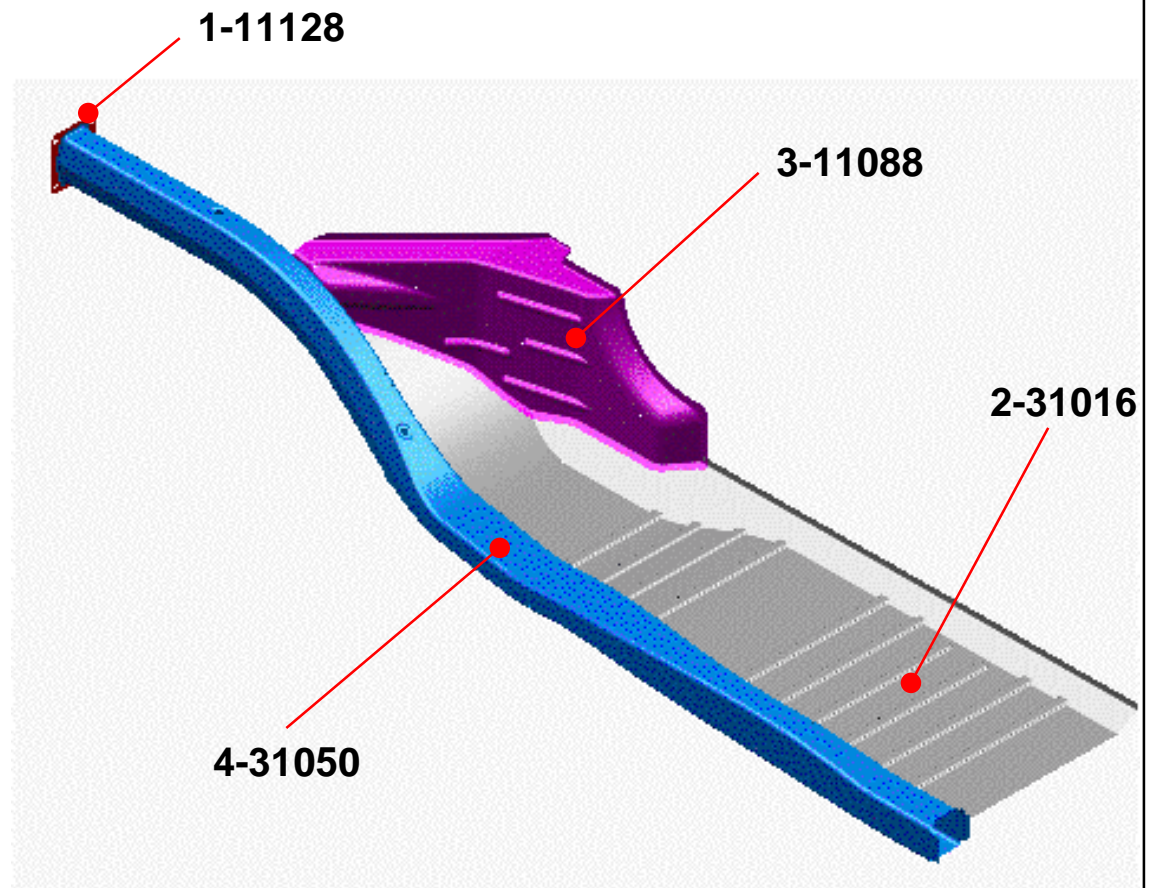
3493 mm
-

AVC 36131 Total Welds

Laser Weld
Spot Weld

3493 mm
-

Right Hand (RH)
Assembly shown



Joining Process

Laser Weld 1 > 3

Laser Weld 2 > 1+3

658 mm

3491 mm

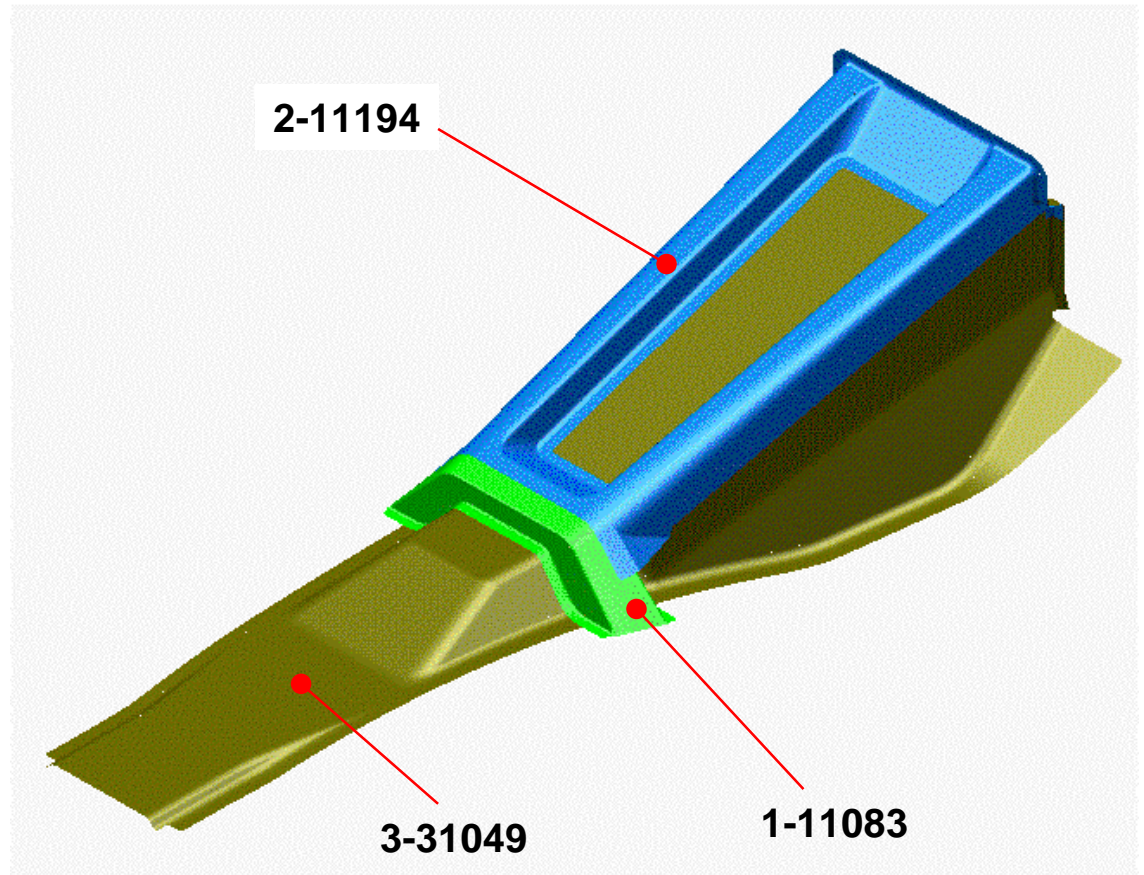
AVC 36129 Total Welds

Laser Weld

Spot Weld

4149 mm

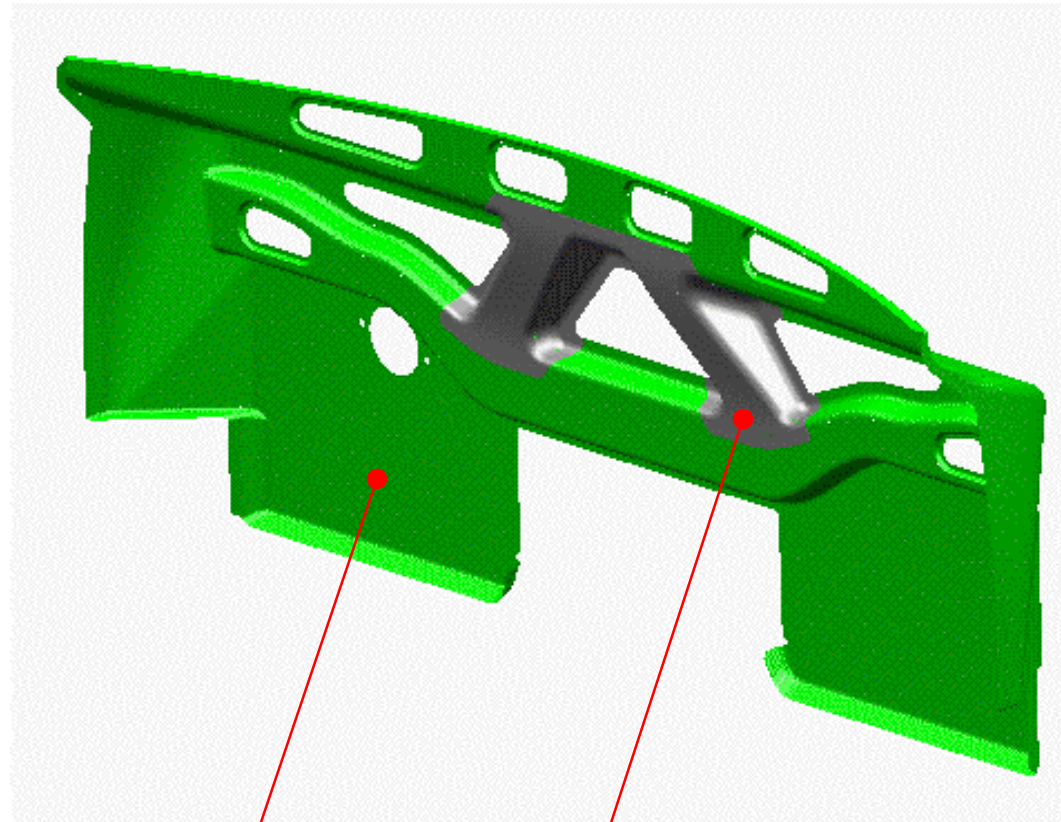
-



Joining Process

Laser Weld 1 > 2

1200 mm



AVC 16136 Total Welds

Laser Weld
Spot Weld

1200 mm
-

2-11015

1-11227

Joining Process

Spot Weld 1 > 4	12
Spot Weld 2 > 1+4	12
Spot Weld 3 > 4	12

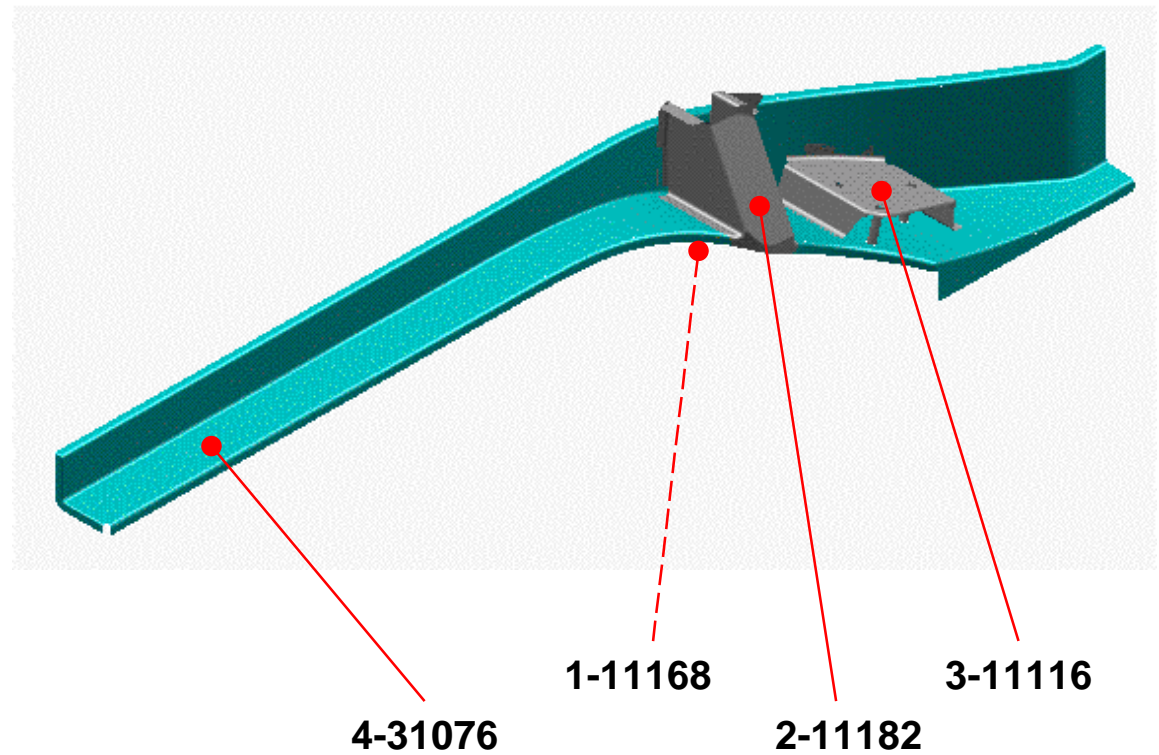
AVC 36132 Total Welds

Laser Weld	-
Spot Weld	36

AVC 36133 Total Welds

Laser Weld	-
Spot Weld	36

Right Hand (RH)
Assembly shown

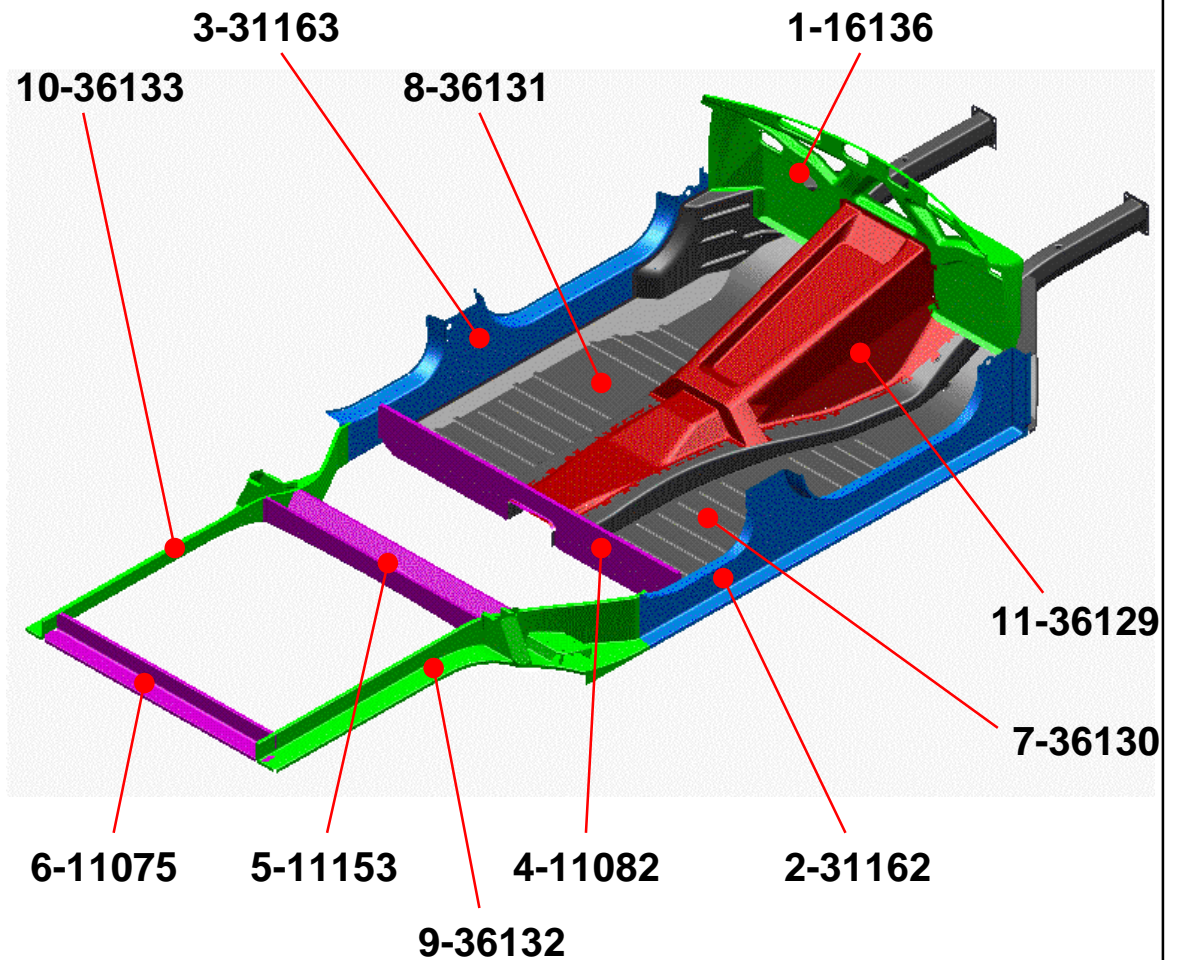


Joining Process

Laser Weld	11 > 7+8	3458 mm
Adhesive	11 > 7+8	250 mm
Laser Weld	1 > 7+8+11	80 mm
Spot Weld	1 > 7+8+11	52
Laser Weld	4 > 7+8	1200 mm
Spot Weld	4 > 7+8+11	18
Laser Weld	2 > 7	411 mm
Laser Weld	3 > 8	411 mm
Spot Weld	2 > 4+7	60
Spot Weld	3 > 4+8	60
Spot Weld	9 > 2+5+6	26
Spot Weld	10 > 3+5+6	26

AVC 36128 Total Welds

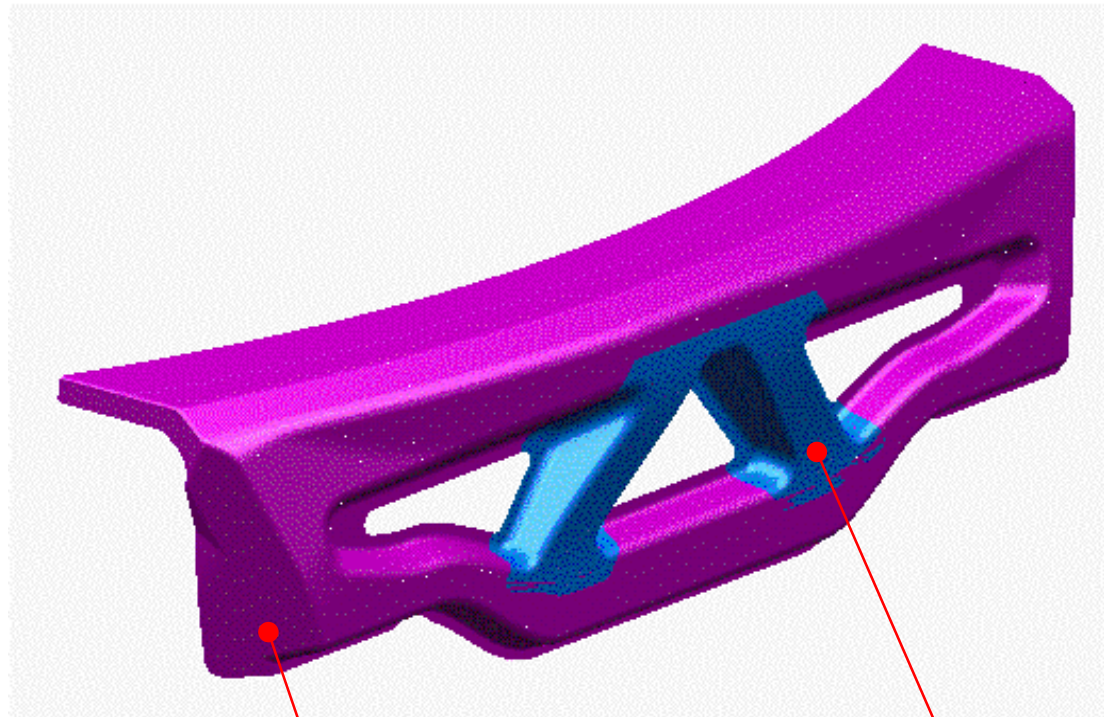
Laser Weld	5560 mm
Spot Weld	242
Adhesive	250 mm



Joining Process

Laser Weld 1 > 2

900 mm



AVC 16137 Total Welds

Laser Weld
Spot Weld

900 mm
-

2-11008

1-11226

Joining Process

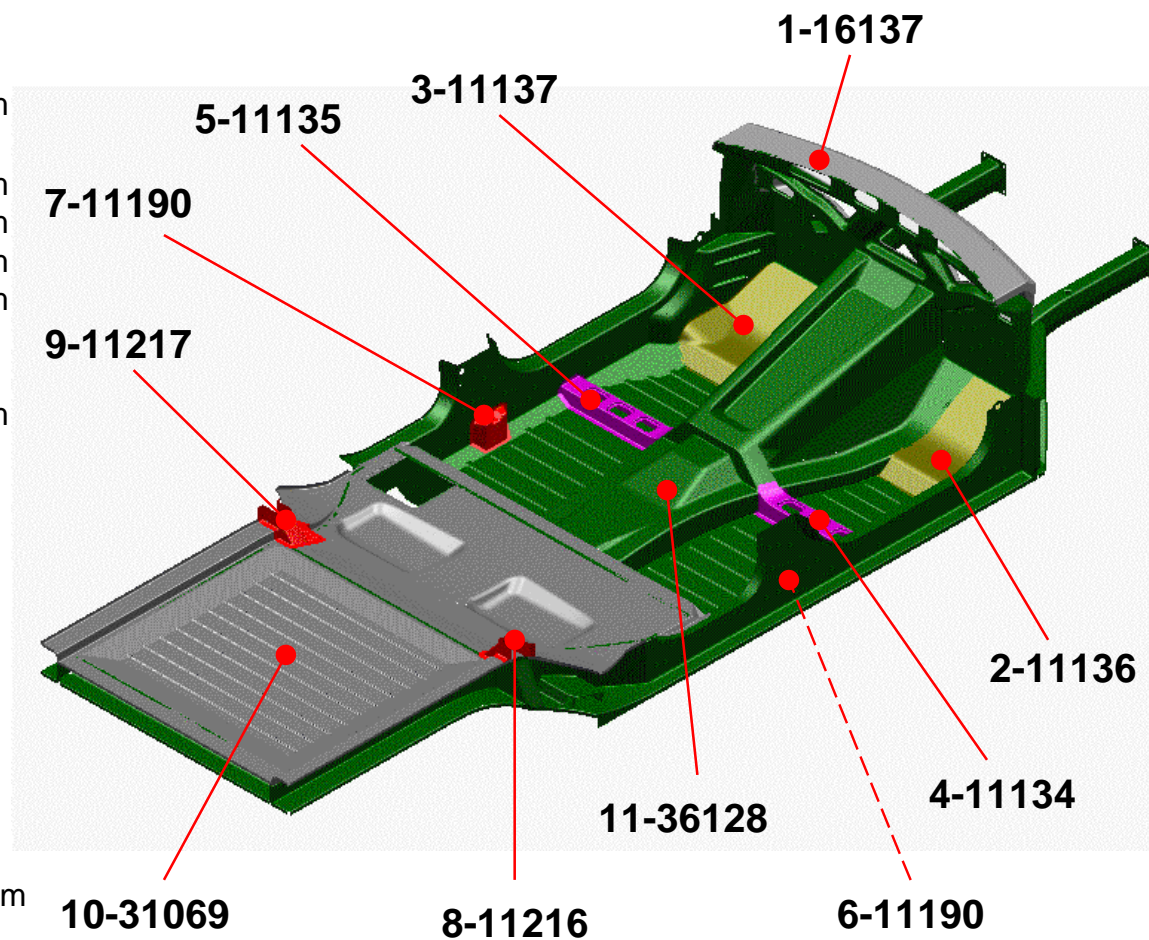
Laser Weld 1 > 11
 Spot Weld 1 > 11
 Laser Weld 2 > 11
 Laser Weld 3 > 11
 Laser Weld 4 > 11
 Laser Weld 5 > 11
 Laser Weld 6 > 11
 Laser Weld 7 > 11
 Laser Weld 10 > 11
 Spot Weld 10 > 11
 Spot Weld 8 > 10+11
 Spot Weld 9 > 10+11

3066 mm
 50
 1544 mm
 1544 mm
 1213 mm
 1213 mm
 526 mm
 526 mm
 5916 mm
 128
 18
 18

AVC 36125 Total Welds

Laser Weld
 Spot Weld

15548 mm
 214



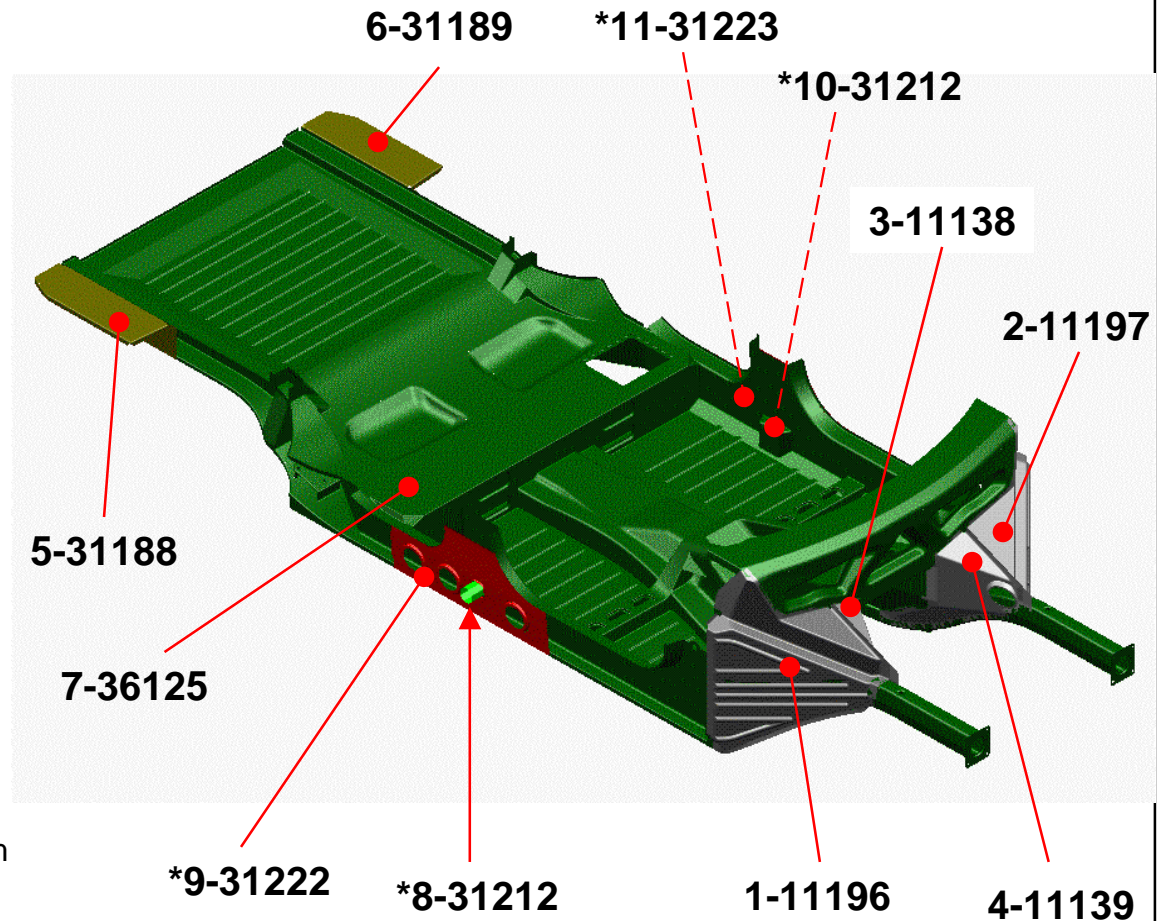
Joining Process

Laser Weld 1 > 7	2028 mm
Laser Weld 2 > 7	2028 mm
Laser Weld 3 > 1+7	1417 mm
Laser Weld 4 > 2+7	1417 mm
Laser Weld 5 > 7	110 mm
Laser Weld 6 > 7	110 mm
Laser Weld 8 > 9	72 mm
Laser Weld 9 > 7	1558 mm
Laser Weld 10 > 11	72 mm
Laser Weld 11 > 7	1558 mm

*Sub-Assembly (x2)

AVC 36124 Total Welds

Laser Weld	10370 mm
Spot Weld	-



Joining Process

Laser Weld 1 > 2	574 mm
Laser Weld 3 > 1+2	399 mm
Laser Weld 4 > 2	231 mm
Laser Weld 6 > 5	692 mm
Laser Weld 5 > 2	666 mm
Laser Weld 7 > 2	606 mm
Laser Weld 8 > 2	702 mm
Laser Weld 9 > 2	375 mm
Laser Weld 10 > 2	502 mm
Laser Weld 11 > 9+10	1316 mm
Laser Weld 12 > 1	210 mm

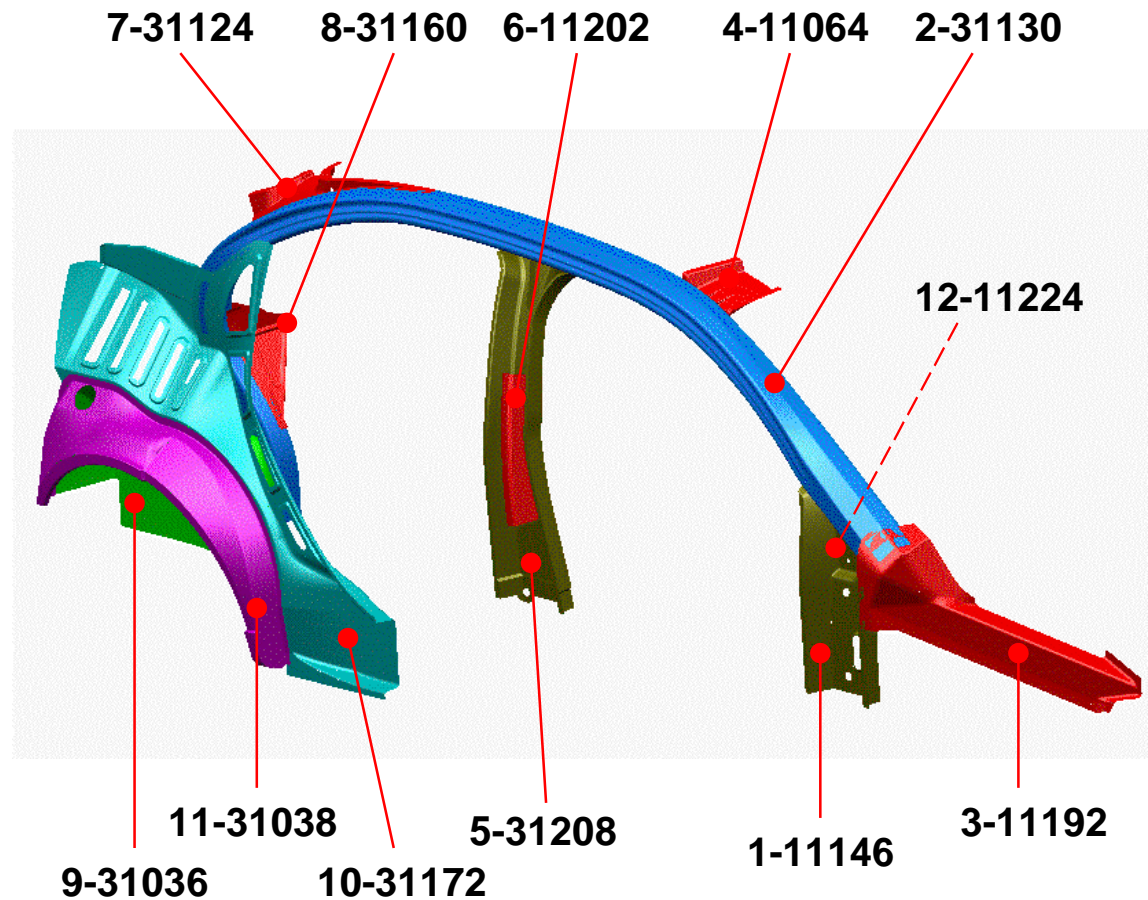
AVC 36126 Total Welds

Laser Weld	6273 mm
Spot Weld	-

AVC 36127 Total Welds

Laser Weld	6273 mm
Spot Weld	-

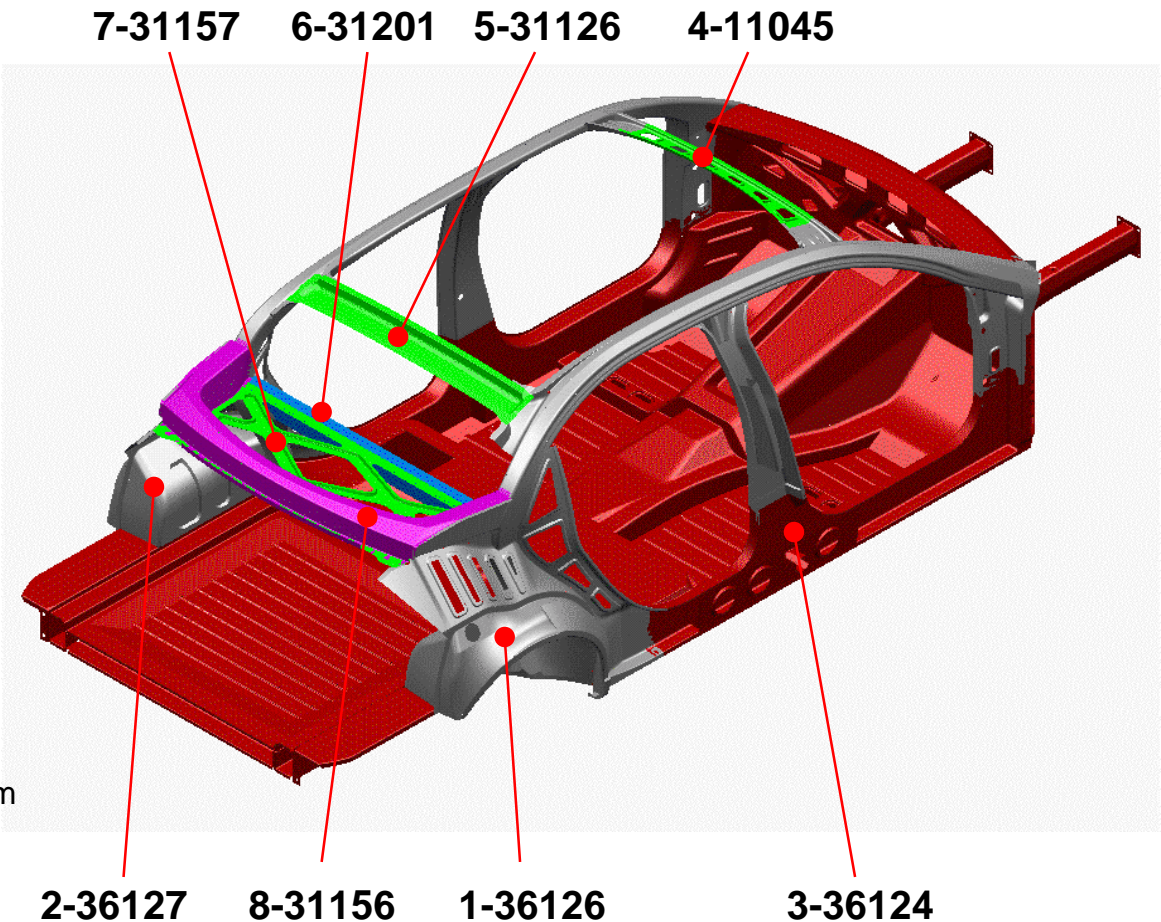
Right Hand (RH)
Assembly shown



Joining Process

Laser Weld 1 > 3
 Spot Weld 1 > 3
 Adhesive 1 > 3
 Laser Weld 2 > 3
 Spot Weld 2 > 3
 Adhesive 2 > 3
 Laser Weld 4 > 1+2
 Laser Weld 5 > 1+2
 Laser Weld 6 > 1+2
 Laser Weld 7 > 1+2+6
 Laser Weld 8 > 1+2+6+7

5109 mm
 46
 678 mm
 5109 mm
 46
 678 mm
 778 mm
 948 mm
 860 mm
 2210 mm
 4304 mm



AVC 36120 Total Welds

Laser Weld
 Spot Weld
 Adhesive

19318 mm
 92
 1356 mm

Right Hand (RH)
Assembly shown

Joining Process

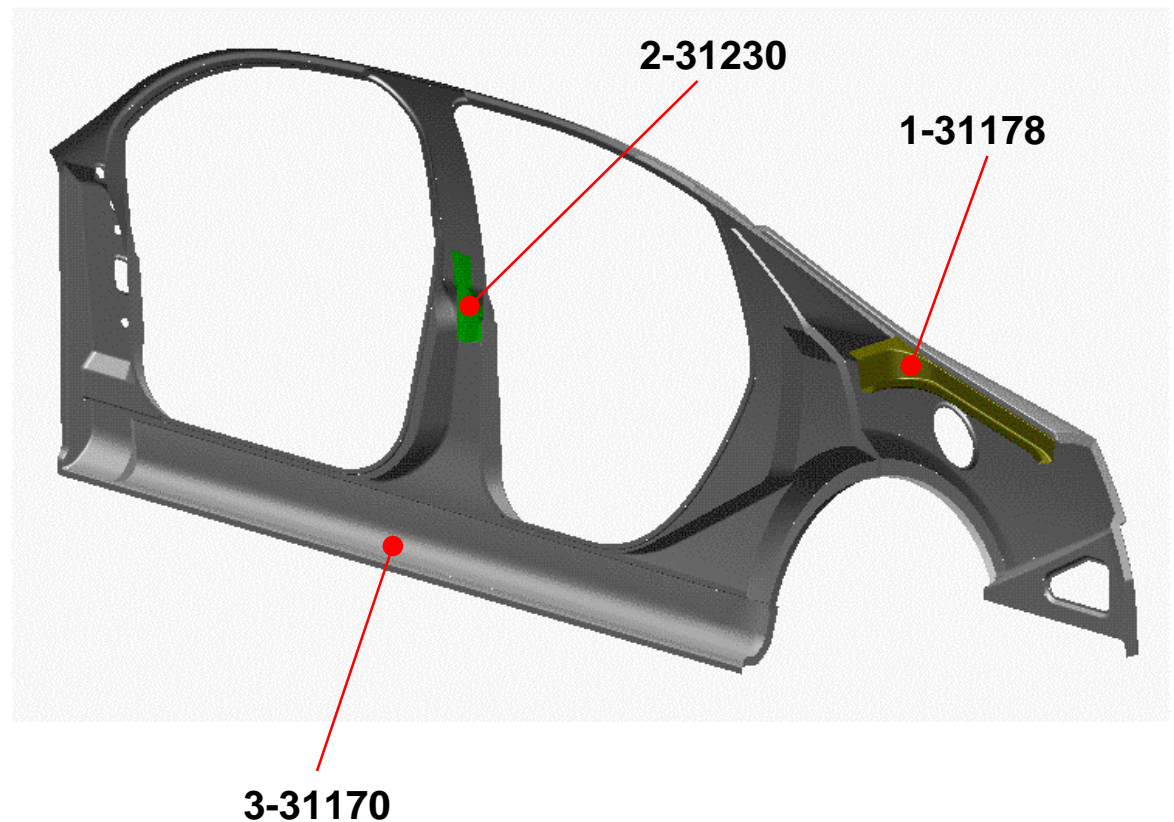
Spot Weld	1 > 3	16
Laser Weld	2 > 3	428 mm

AVC 36122 Total Welds

Laser Weld	428
Spot Weld	16

AVC 36123 Total Welds

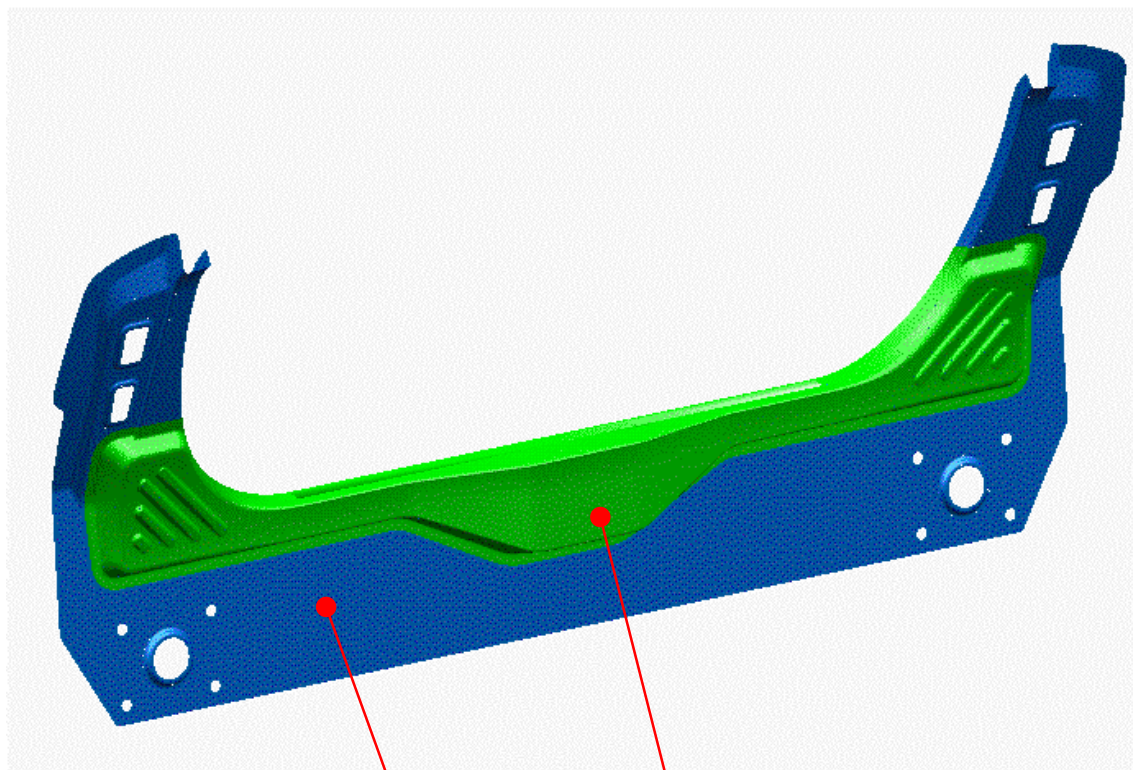
Laser Weld	428
Spot Weld	16



Joining Process

Laser Weld 1 > 2

3016 mm



AVC 36121 Total Welds

Laser Weld
Spot Weld

3016 mm
-

2-31074

1-31214

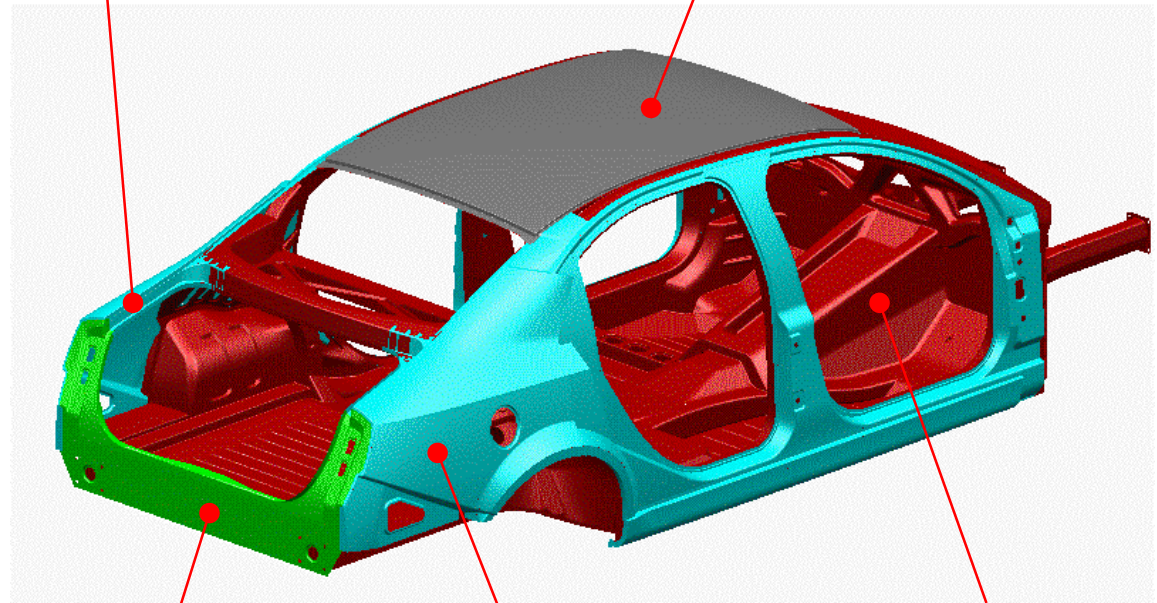
Joining Process

Laser Weld 1 > 5
 Spot Weld 1 > 5
 Laser Weld 2 > 5
 Spot Weld 2 > 5
 Laser Weld 3 > 1+2+5
 Laser Weld 4 > 5
 Spot Weld 4 > 1+2

5508 mm
 59
 5508 mm
 59
 5300 mm
 2970 mm
 44

2-36123

3-31127



AVC 36119 Total Welds

Laser Weld
 Spot Weld

19286 mm
 162

4-36121

1-36122

5-36120

C-Class Total Welds

Laser Weld	114,017 mm
Spot Weld	723
Adhesive	1,606 mm

PNGV-Class Total Welds

Laser Weld	99,735 mm
Spot Weld	814
Adhesive	1,606 mm

8.3 Process Planning Sheets

8.3 Process Planning Sheet - AVC 11008 Cowl Front

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 11008				PART NAME:		Cowl Front	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION		
10	Blank Die	1400 x 2200	1	600 ton	82,000.00			
20	Draw Die	1000 x 2000	1	1000 ton	242,000.00			
30	Trim & Prc Die	1600 x 2400	1	1000 ton	148,500.00			
40	Flange & Restrike	1600 x 2400	1	1000 ton	197,400.00			
50	Finish Prc	1400 2200	1	1000 ton	115,000.00			
60	Checking Fixture				42,000.00			
70								
80				Total	\$826,900.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.450 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC		
ENGINEERING LEVELS						MAT. SPECS:	.70 500 MPa	
DATE	LEVEL	DETAIL				APPROX. BLANK SIZE:	.80 x 1644 x 900 = 1 pc Approx Gross Weight = 9.23 Kg Ea	
05-Mar-01	D03					APPV'D. BY:	Notes	DATE
							Blank Size Changed Rev level changed	

8.3 Process Planning Sheets - AVC 11015 Dash Panel

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 11015				PART NAME:	Dash Panel	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION	
10	Blank Die	1600 x 2700	1	1000 Ton	105,000.00		
20	Draw Die	1900 x 3000	1	1600 Ton	287,500.00		
30	Trim Die	1700 x 2800	1	1600 Ton	150,000.00		
40	Flange & Restrike	1700 x 2800	1	1600 Ton	267,900.00		
50	Trim & Prc Die	1700 x 2800	1	1600 Ton	160,000.00		
60	Finish Flange Die	1700 x 2800	1	1600 Ton	120,000.00		
70	Checking Fixture				52,000.00		
80				Total	\$1,142,400.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.350 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC	
ENGINEERING LEVELS						.65 280 MPa	
DATE	LEVEL	DETAIL			MAT. SPECS:		
22-Mar-01	C15				APPROX. BLANK SIZE:	.65 x 2114 x 913 = 1 pc Approx Gross Weight = 9.7855 Kg Ea	
					APPV'D. BY:	Notes	DATE
						Cut outs added Rev level changed	

8.3 Process Planning Sheets - AVC 11045 Header Front

Mercia, Ltd.



Process Planning Sheets

PART NO.		ULSAB-AVC 11045			PART NAME:		Header Front		
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION			
10	SQ Shr		1						
20	Draw Die	1400 x 1900	1	500 Ton	189,000.00				
30	Trim & Prc Die	1400 x 1900	1	500 Ton	128,500.00				
40	Flange & Restrike	1400 x 1900	1	500 ton	165,000.00				
50	Checking Fixture				26,000.00				
60									
70									
80				Total	\$508,500.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.500 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC			
ENGINEERING LEVELS									
DATE	LEVEL	DETAIL				MAT. SPECS:		.70 300 MPa	
09-Mar-01	E01					APPROX. BLANK SIZE:		.70 x 898 x 332 =1 pc Approx Gross Weight 1.639 Kg	
						APPV'D. BY:		Notes	
								DATE	
								Cut outs added Rev level changed	

8.3 Process Planning Sheets - AVC 11064 Support Header Front RH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 11064				PART NAME:		Support Header Front RH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION		
10	Sq Shr							
20	Draw Die	1000 x 1600	1	500 Ton	125,000.00	2 out attached LH & RH		
30	im,Prc & Seperate D	1000 x 1600	1	500 Ton	107,000.00	2 out attached LH & RH		
40	Flange & restrike	1000 x 1600	1	500 Ton	112,000.00	2 out attached LH & RH		
50	Cam Trim & Separat	1000 x 1600	1	500 Ton	97,000.00	2 out attached LH & RH		
60	Checking Fixture				12,000.00			
70								
80				Total	\$453,000.00	Manpower requirements = 1 operator to load lead press, 1 operators to unload and rack finished Intermediate operations to run with automation.500 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC		
ENGINEERING LEVELS						MAT. SPECS:	.7 280 MPa	
DATE	LEVEL	DETAIL				APPROX. BLANK SIZE:	.7 x 646 x 454 =2pc Approx Gross Weight= 1.6013 Kg =0.800 Kg Ea	
06-Jan-01	D00					APPV'D. BY:	Notes	DATE

8.3 Process Planning Sheets - AVC 11065 Support Header Front LH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 11065				PART NAME:	Support Header Front LH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION	
10	Sq Shr						
20	Draw Die	1000 x 1600	1	500 Ton		2 out attached LH & RH Tooling used to produce AVC11064 produces LH & RH	
30	im,Prc & Seperate D	1000 x 1600	1	500 Ton		2 out attached LH & RH Tooling used to produce AVC11064 produces LH & RH	
40	Flange & restrike	1000 x 1600	1	500 Ton		2 out attached LH & RH Tooling used to produce AVC11064 produces LH & RH	
50	Cam Trim & Separat	1000 x 1600	1	500 Ton		2 out attached LH & RH Tooling used to produce AVC11064 produces LH & RH	
60	Checking Fixture				12,000.00		
70							
80				Total	\$12,000.00	Manpower requirements = 1 operator to load lead press, 1 operators to unload and rack finished Intermediate operations to run with automation.500 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC	
ENGINEERING LEVELS						.7 280 MPa	
DATE	LEVEL	DETAIL			MAT. SPECS:		
06-Jan-01	D00				APPROX. BLANK SIZE:	.7 x 646 x 454 =2pc Approx Gross Weight= 1.6013 Kg =0.800 Kg Ea	
					APPV'D. BY:	Notes	DATE

8.3 Process Planning Sheets - AVC 11075 Cross Member Rear

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 11075				PART NAME:	Cross Member Rear
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION
10	Blank & Prc Die	900 x 1800	1	TP	90,000.00	Transfer
20	Flange Die	900 x 1800	1	TP	140,000.00	Transfer
30	Finish Flange Die	900 x 1800	1	TP	140,000.00	Transfer
40	Checking Fixture				22,000.00	
50						
60						
70						
80				Total	\$392,000.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.1000 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC
ENGINEERING LEVELS						
DATE	LEVEL	DETAIL			MAT. SPECS:	.65 280 MPa
240ct00	C00				APPROX. BLANK SIZE:	.65 x 1200 x 260 =1pc Approx Gross Weight= 1.592 Kg Ea
					APPV'D. BY:	Notes
						DATE

8.3 Process Planning Sheets - AVC 11082 Crossmember Kick Up

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 11082				PART NAME:	Crossmember Kick Up	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION	
10	Blank & Prc Die	1000 x 2000	1	Transfer	90,000.00		
20	Flange Die	1000 x 2000	1	Transfer	130,000.00		
30	Flange Die	1000 x 2000	1	Transfer	120,000.00		
40	Checking Fixture				24,000.00		
50							
60							
70							
80				Total	\$364,000.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.1000 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC	
ENGINEERING LEVELS							
DATE	LEVEL	DETAIL			MAT. SPECS:	.7 700 MPa	
27-Feb-01	E04				APPROX. BLANK SIZE:	.70 x 1490 x 336 = 1 pc Approx Gross Weight = 2.752 Kg Ea	
					APPV'D. BY:	Notes	DATE
						Part Moved No Physical Change	

8.3 Process Planning Sheets - AVC 11083 Crossmember Tunnel

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 11083				PART NAME:		Crossmember Tunnel	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION		
10	Blank Die	1300 x 1500	1	600Ton	85,000.00	600 Ton Blanking Press		
20	Draw Die	1500 x 1800	1	800 ton	182,000.00	Single Out		
30	Trim & Prc Die	1500 x 1800	1	800 Ton	109,500.00	Single Out		
40	Flange & Restrike	1500 x 1800	1	800 Ton	141,000.00	Single Out		
50	Checking Fixture				28,000.00			
60								
70								
80				Total	\$545,500.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.500 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC		
ENGINEERING LEVELS						MAT. SPECS:	.7 350 MPa	
DATE	LEVEL	DETAIL		APPROX. BLANK SIZE:		.70 x 792 x 416 = 1 pc Approx Gross Weight = 1.798 Kg Ea		
17-Aug-00	B00			APPV'D. BY:		Notes	DATE	

8.3 Process Planning Sheets - AVC 11088 Bulkhead crsh Box Dash RH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 11088				PART NAME:		Bulkhead crsh Box Dash RH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION		
10	Blank Die	1700 X 1700	1	600Ton	100,000.00	1000 Ton Blanking Press		
20	Draw Die	2100 x 2100	1	800 ton	216,400.00	2 out attached 1LH & 1RH		
30	Trim & Prc & Sep Die	2100 x 2100	1	800 Ton	224,000.00	2 out attached 1LH & 1RH		
40	Flange & Restrike	2100 x 2100	1	800 Ton	202,800.00	2 out attached 1LH & 1RH		
50	Checking Fixture				24,000.00			
60								
70								
80				Total	\$767,200.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.450 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC		
ENGINEERING LEVELS						MAT. SPECS:	1.2 700 MPa	
DATE	LEVEL	DETAIL				APPROX. BLANK SIZE:	1.2 x 1080 x 1037 = 2 pc Approx Gross Weigt = 10.554 Kg = 5.277 Kg Ea	
04-Dec-00	D01					APPV'D. BY:	Notes	DATE

8.3 Process Planning Sheets - AVC 11089 Bulkhead crsh Box Dash LH

Mercia, Ltd.  Process Planning Sheets

PART NO.		ULSAB-AVC 11089			PART NAME:		Bulkhead crsh Box Dash LH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION		
10	Blank Die	1700 X 1700	1	600Ton		1000 Ton Blanking Press		
20	Draw Die	2100 x 2100	1	800 ton		2 out attached 1LH & 1RH tooling used to produce AVC11088 produces LH & RH		
30	Trim & Prc & Sep Die	2100 x 2100	1	800 Ton		2 out attached 1LH & 1RH tooling used to produce AVC11088 produces LH & RH		
40	Flange & Restrike	2100 x 2100	1	800 Ton		2 out attached 1LH & 1RH tooling used to produce AVC11088 produces LH & RH		
50	Checking Fixture				24,000.00			
60								
70								
80				Total	\$24,000.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.450 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC		
ENGINEERING LEVELS								
DATE	LEVEL	DETAIL				MAT. SPECS:	1.2 700 MPa	
04-Dec-00	D01					APPROX. BLANK SIZE:	1.2 x 1080 x 1037 = 2 pc Approx Gross Weigt = 10.554 Kg = 5.277 Kg Ea	
						APPV'D. BY:	Notes	DATE

8.3 Process Planning Sheets - AVC 11116 Assy Reinf Rail Rear Suspension Attachment RH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 11116				PART NAME:	Assy Reinf Rail Rear Suspension Attachment RH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION	
10	Progressive Die		1	350 Ton	287,500.00	8 station progressive die 1 out	
20	Checking Fixture				8,500.00		
30							
40							
50							
60							
70							
80				Total	\$296,000.00	Manpower requirements = 1 operator to load lead press, 1 operators to unload and rack finished Intermediate operations to run with automation.1000 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC	
ENGINEERING LEVELS							
DATE	LEVEL	DETAIL			MAT. SPECS:	1.3 500 MPa	
21-Jul-00	B01				APPROX. BLANK SIZE:	1.3 x 344 x 267 = 1 pc. Approx. Gross Weight= .931 Kg Ea.	
					APPV'D. BY:	ENGINEERS	DATE

8.3 Process Planning Sheets - AVC 11117 Assy Reinf Rear Suspension Attachment LH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 11117				PART NAME:	Assy Reinf Rail Rear Suspension Attachment LH
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION
10	Progressive Die		1	350 Ton	287,500.00	8 station progressive die 1 out
20	Checking Fixture				8,500.00	
30						
40						
50						
60						
70						
80				Total	\$296,000.00	Manpower requirements = 1 operator to load lead press, 1 operators to unload and rack finished Intermediate operations to run with automation.1000 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC
ENGINEERING LEVELS						1.3 500 MPa
DATE	LEVEL	DETAIL			MAT. SPECS:	
21-Jul-00	B01				APPROX. BLANK SIZE:	1.3 x 344 x 267 = 1 pc. Approx. Gross Weight= .931 Kg Ea.
					APPV'D. BY:	ENGINEERS
						DATE

8.3 Process Planning Sheets - AVC 11128 Plate Crash Box Rail Front Attach

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 11128				PART NAME:	Plate Crash Box Rail Front Attach
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION
10	Progressive Die		1	350 Ton	135,000.00	6 station progressive die12 out
20	Checking Fixture				6,000.00	
30						
40						
50						
60						
70						
80				Total	\$141,000.00	Manpower requirements = 1 operator to load lead press, 1 operators to unload and rack finished Intermediate operations to run with automation.1000 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC
ENGINEERING LEVELS						3.0 700 MPa
DATE	LEVEL	DETAIL			MAT. SPECS:	
30-Mar-00	A00				APPROX. BLANK SIZE:	3 x 165 x 150 = 1 pc. Approx. Gross Weight= .579 Kg Ea.
					APPV'D. BY:	ENGINEERS
						DATE

8.3 Process Planning Sheets - AVC 11134 Crossmember Support Front Seat RH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 11134				PART NAME:		Crossmember Support Front Seat RH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION		
10	Sq Shr							
20	Form Die	1300 x 2128	1	800 Ton	178,000.00	2 Out Unattached 1LH & 1RH		
30	Trim & Prc Die	1300 x 2128	1	800 Ton	135,000.00	2 Out Unattached 1LH & 1RH		
40	Form Die	1300 x 2128	1	800 Ton	128,000.00	2 Out Unattached 1LH & 1RH		
50	Finish Form Die	1300 x 2128	1	800 Ton	148,000.00	2 Out Unattached 1LH & 1RH		
60	Checking Fixture				26,000.00			
70								
80				Total	\$615,000.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.500 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC		
ENGINEERING LEVELS						MAT. SPECS:	.7 450 MPa	
DATE	LEVEL	DETAIL				APPROX. BLANK SIZE:	.7 X 623 x 464 = 1 pc. Approx. Gross Weight= 1.589 Kg Ea.	
09-Mar-01	C03					APPV'D. BY:	ENGINEERS	DATE

8.3 Process Planning Sheets - AVC 11135 Crossmember Support Front Seat LH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 11135				PART NAME:	Crossmember Support Front Seat LH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION	
10	Sq Shr						
20	Form Die	1300 x 2128	1	800 Ton		2 Out Unattached 1LH & 1RH Tooling used to produce AVC 11134 produces LH & RH	
30	Trim & Prc Die	1300 x 2128	1	800 Ton		2 Out Unattached 1LH & 1RH Tooling used to produce AVC 11134 produces LH & RH	
40	Form Die	1300 x 2128	1	800 Ton		2 Out Unattached 1LH & 1RH Tooling used to produce AVC 11134 produces LH & RH	
50	Finish Form Die	1300 x 2128	1	800 Ton		2 Out Unattached 1LH & 1RH Tooling used to produce AVC 11134 produces LH & RH	
60	Checking Fixture				26,000.00		
70							
80				Total	\$26,000.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.500 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC	
ENGINEERING LEVELS						.7 450 MPa	
DATE	LEVEL	DETAIL			MAT. SPECS:		
09-Mar-01	C03				APPROX. BLANK SIZE:	.7 X 623 x 464 = 1 pc. Approx. Gross Weight= 1.589 Kg Ea.	
					APPV'D. BY:	ENGINEERS	DATE

8.3 Process Planning Sheets - AVC 11136 Closeout

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 11136				PART NAME:	Closeout				
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	OPERATION DESCRIPTION				
10	Sq Shr			600 ton		600 ton Blanker				
20	Form Die	1635 x 2000	1	800 ton	204,000.00	2 out 1LH & 1RH				
30	Trim Prc & Sep	1635 x 2000	1	800 ton	156,000.00	2 out 1LH & 1RH				
40	Flange & Restrike Die	1635 x 2000	1	800 ton	192,000.00	2 out 1LH & 1RH				
50	Checking Fixture				34,000.00					
60										
70										
80				Total	\$586,000.00	Manpower Intermediate operations to run with automation.500 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC				
NEERING LEVELS						MAT. SPECS:	.9 500 MPa			
DATE	LEVEL	DETAIL				APPROX. BLANK SIZE:	x Gross Weigt = 4.263 Kg 2 pc 2.131 Kg Ea			
05-Dec-00	C00					APPV'D. BY:	Notes			DATE

8.3 Process Planning Sheets - AVC 11137 Closeout Lower Crash Box Dash LH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 11137				PART NAME:	Closeout Lower Crash Box Dash LH
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION
10	Sq Shr			600 ton		600 ton Blanker
20	Form Die	1635 x 2000	1	800 ton		2 out 1LH & 1RH attached Tooling used to produce AVC11136 produces LH & RH
30	Trim Prc & Sep	1635 x 2000	1	800 ton		2 out 1LH & 1RH attached Tooling used to produce AVC11136 produces LH & RH
40	Flange & Restrike Die	1635 x 2000	1	800 ton		2 out 1LH & 1RH attached Tooling used to produce AVC11136 produces LH & RH
50	Checking Fixture				34,000.00	
60						
70						
80				Total	\$34,000.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.500 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC
ENGINEERING LEVELS						
DATE	LEVEL	DETAIL			MAT. SPECS:	.9 500 MPa
05-Dec-00	C00				APPROX. BLANK SIZE:	.9 x 950 x 635 = 2 pc Approx Gross Weight = 4.263 Kg 2 pc 2.131 Kg Ea
					APPV'D. BY:	Notes DATE

8.3 Process Planning Sheets - AVC 11138 Closeout Inner Crash Box Dash RH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 11138				PART NAME:	Closeout Inner Crash Box Dash RH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION	
10	Dev Blank	1481 x 1600	1	800 ton	85,000.00		
20	Form Die	1481 x 2500	1	800 ton	162,300.00	2 Out Unattached 1LH & 1RH	
30	Trim & Prc Die	1481 x 2500	1	800 ton	142,000.00	2 Out Unattached 1LH & 1RH	
40	Flange & Restrike	1481 x 2500	1	800 ton	155,000.00	2 Out Unattached 1LH & 1RH	
50	Flange Die	1300 x 2400	1	800 ton	118,000.00	2 Out Unattached 1LH & 1RH	
60	Checking Fixture				18,500.00		
70							
80				Total	\$680,800.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.500 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC	
ENGINEERING LEVELS						.80 500 MPa	
DATE	LEVEL	DETAIL			MAT. SPECS:		
20-Oct-00	A05				APPROX. BLANK SIZE:	.80 X 781 x 825 = 1 pc. Approx. Gross Weight= 4.048 Kg Ea.	
					APPV'D. BY:	ENGINEERS	DATE

8.3 Process Planning Sheets - AVC 11139 Closeout Inner Crash Box Dash LH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 11139				PART NAME:	Closeout Inner Crash Box Dash LH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION	
10	Dev Blank	1481 x 1600	1	800 ton			
20	Form Die	1481 x 2500	1	800 ton		2 Out Unattached 1LH & 1RH Tooling used to produce AVC 11138 produces LH & RH	
30	Trim & Prc Die	1481 x 2500	1	800 ton		2 Out Unattached 1LH & 1RH Tooling used to produce AVC 11138 produces LH & RH	
40	Flange & Restrike	1481 x 2500	1	800 ton		2 Out Unattached 1LH & 1RH Tooling used to produce AVC 11138 produces LH & RH	
50	Flange Die	1300 x 2400	1	800 ton		2 Out Unattached 1LH & 1RH Tooling used to produce AVC 11138 produces LH & RH	
60	Checking Fixture				18,500.00		
70							
80				Total	\$18,500.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.500 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC	
ENGINEERING LEVELS						.80 500 MPa	
DATE	LEVEL	DETAIL			MAT. SPECS:		
20-Oct-00	A05				APPROX. BLANK SIZE:	.80 X 781 x 825 = 1 pc. Approx. Gross Weight= 4.048 Kg Ea.	
					APPV'D. BY:	ENGINEERS	DATE

8.3 Process Planning Sheets - AVC 11146 A Post Inner RH

Mercia, Ltd.  Process Planning Sheets

PART NO.		ULSAB-AVC 11146			PART NAME:		A Post Inner RH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION		
10	Blank Die	1372 x 1972	1	1000 Ton	85,000.00	2 out 1LH & 1RH attached		
20	Form Die	1700 x 2300	1	1000 Ton	180,000.00	2 out 1LH & 1RH attached		
30	Trim Prc & Sep Die	1600 x 2200	1	1000 Ton	118,000.00	2 out 1LH & 1RH attached		
40	Flange & Restrike	1600 x 2200	1	1000 Ton	147,000.00	2 out 1LH & 1RH attached		
50	Checking Fixture				18,000.00			
60								
70								
80				Total	\$548,000.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.450 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC		
ENGINEERING LEVELS								
DATE	LEVEL	DETAIL		MAT. SPECS:		.90 700 MPa		
11-Apr-01	A06			APPROX. BLANK SIZE:		.90 x 1272 x 672 = 2 pc Approx Gross Weight = 6.041 Kg 2 pcs / 3.020 Ea		
				APPV'D. BY:		Notes		DATE
						Cutout added Rev Change		

8.3 Process Planning Sheets - AVC 11147 A Post Inner LH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 11147				PART NAME:	A Post Inner LH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION	
10	Blank Die	1372 x 1972	1	1000 Ton		2 out 1LH & 1RH attached Tooling used to produce AVC11146 produces LH & RH	
20	Form Die	1700 x 2300	1	1000 Ton		2 out 1LH & 1RH attached Tooling used to produce AVC11146 produces LH & RH	
30	Trim Prc & Sep Die	1600 x 2200	1	1000 Ton		2 out 1LH & 1RH attached Tooling used to produce AVC11146 produces LH & RH	
40	Flange & Restrike	1600 x 2200	1	1000 Ton		2 out 1LH & 1RH attached Tooling used to produce AVC11146 produces LH & RH	
50	Checking Fixture				18,000.00		
60							
70							
80				Total	\$18,000.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.450 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC	
ENGINEERING LEVELS						.90 700 MPa	
DATE	LEVEL	DETAIL			MAT. SPECS:		
11-Apr-01	A06				APPROX. BLANK SIZE:	.90 x 1272 x 672 = 2 pc Approx Gross Weight = 6.041 Kg 2 pcs / 3.020 Ea	
					APPV'D. BY:	Notes	DATE
						Cutout added Rev Change	

8.3 Process Planning Sheets - AVC 11153 Crossmember Rear Suspension

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 11153				PART NAME:	Crossmember Rear Suspension
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION
10	Notch & Prc Die	1300 x 1900	1	800 Ton	101,000.00	Single Out
20	Flange Die	1300 x 1900	1	800 Ton	135,000.00	Single Out
30	Flange Die	1300 x 1900	1	800 Ton	122,000.00	Single Out
40	Checking Fixture				24,000.00	Single Out
50						
60						
70						
80				Total	\$382,000.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.500 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC
ENGINEERING LEVELS						1.0 700 MPa
DATE	LEVEL	DETAIL			MAT. SPECS:	
19-Feb-01	D01				APPROX. BLANK SIZE:	1.0 x 1180 x 600 = 1 pc Approx Gross Weight = 5.522 Kg Ea
					APPV'D. BY:	Notes DATE

8.3 Process Planning Sheets - AVC 11168 Reinforcement Rail Rear Spring Attachment RH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 11168				PART NAME:	Reinforcement Rail Rear Spring Attachment RH
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION
10	Progressive Die		1	350 Ton	165,000.00	6 station progressive die 1 out
20	Checking Fixture				5,000.00	
30						
40						
50						
60						
70						
80				Total	\$170,000.00	Manpower requirements = 1 operator to load lead press, 1 operators to unload and rack finished Intermediate operations to run with automation.1000 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC
ENGINEERING LEVELS						1.2 350 MPa
DATE	LEVEL	DETAIL			MAT. SPECS:	
03-Feb-01	B01				APPROX. BLANK SIZE:	1.2 x 175 x 400 = 1 pc. Approx. Gross Weight= 0.6552 Kg Ea.
					APPV'D. BY:	ENGINEERS
						DATE

8.3 Process Planning Sheets - AVC 11169 Reinforcement Rail Rear Spring Attachment LH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 11169				PART NAME:	Reinforcement Rail Rear Spring Attachment LH
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION
10	Progressive Die		1	350 Ton	165,000.00	6 station progressive die 1 out
20	Checking Fixture				5,000.00	
30						
40						
50						
60						
70						
80				Total	\$170,000.00	Manpower requirements = 1 operator to load lead press, 1 operators to unload and rack finished Intermediate operations to run with automation.1000 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC
ENGINEERING LEVELS						1.2 350 MPa
DATE	LEVEL	DETAIL			MAT. SPECS:	
03-Feb-01	B01				APPROX. BLANK SIZE:	1.2 x 175 x 400 = 1 pc. Approx. Gross Weight= 0.6552 Kg Ea.
					APPV'D. BY:	ENGINEERS
						DATE

8.3 Process Planning Sheets - AVC 11182 Reinf Rail Rear Suspension Crossmember RH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 11182				PART NAME:		Reinf Rail Rear Suspension Crossmember RH		
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION			
10	Dev Blank	1000 x 1200	1	500 Ton	75,000.00	2 out Unattached 1LH & 1RH			
20	Form Die	1500 x 1600	1	500 Ton	125,000.00	2 out Unattached 1LH & 1RH			
30	Trim Die	1500 x 1600	1	500 Ton	118,000.00	2 out Unattached 1LH & 1RH			
40	Flange Die	1500 x 1600	1	500 Ton	112,000.00	2 out Unattached 1LH & 1RH			
50	Flange Die	1500 x 1600	1	500 Ton	116,000.00	2 out Unattached 1LH & 1RH			
60	Checking Fixture				12,000.00				
70									
80				Total	\$558,000.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.500 pcs per hour. NOTE: ALL DIMENSIONS ARE METRIC			
ENGINEERING LEVELS						MAT. SPECS:	1.5 350 MPa		
DATE	LEVEL	DETAIL		APPROX. BLANK SIZE:		1.5 x 593 x 313 = 1 pc Approx Gross Weight 2.17 Kg Ea			
16-Feb-01	B01			APPV'D. BY:		Notes		DATE	

8.3 Process Planning Sheets - AVC 11183 Reinf Rail Rear Suspension Crossmember LH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 11183				PART NAME:	Reinf Rail Rear Suspension Crossmember LH
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION
10	Dev Blank	1000 x 1200	1	500 Ton		2 out Unattached 1LH & 1RH Tooling used to produce AVC 11182 produces RH & LH
20	Form Die	1500 x 1600	1	500 Ton		2 out Unattached 1LH & 1RH Tooling used to produce AVC 11182 produces RH & LH
30	Trim Die	1500 x 1600	1	500 Ton		2 out Unattached 1LH & 1RH Tooling used to produce AVC 11182 produces RH & LH
40	Flange Die	1500 x 1600	1	500 Ton		2 out Unattached 1LH & 1RH Tooling used to produce AVC 11182 produces RH & LH
50	Flange Die	1500 x 1600	1	500 Ton		2 out Unattached 1LH & 1RH Tooling used to produce AVC 11182 produces RH & LH
60	Checking Fixture				12,000.00	
70						
80				Total	\$12,000.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.500 pcs per hour. NOTE: ALL DIMENSIONS ARE METRIC
ENGINEERING LEVELS						1.5 350 MPa
DATE	LEVEL	DETAIL			MAT. SPECS:	
16-Feb-01	B01				APPROX. BLANK SIZE:	1.5 x 593 x 313 = 1 pc Approx Gross Weight 2.17 Kg Ea
					APPV'D. BY:	Notes DATE

8.3 Process Planning Sheets - AVC 11190 Brkt Support Front Seat Rear

Mercia, Ltd.



Process Planning Sheets

PART NO.		ULSAB-AVC 11190			PART NAME:		Brkt Support Front Seat Rear	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION		
10	SQ SHR							
20	Draw die	800 x 800	1	500 ton	48,000.00	Single out		
30	Trim Die	800 x 800	1	500 ton	32,000.00	Single out		
40	Flange Die	800 x 800	1	500 ton	38,000.00	Single out		
50	Cam Prc Die	800 x 800	1	500 ton	26,000.00	Single out		
60	Checking Fixture							
70								
80				Total	\$144,000.00	Manpower requirements = 1 operator to load lead press, 1 operators to unload and rack finished Intermediate operations to run with automation.500 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC		
ENGINEERING LEVELS								
DATE	LEVEL	DETAIL				MAT. SPECS:	1.2 500 MPa	
06-Dec-00	B01					APPROX. BLANK SIZE:	1.2 x 307 x 292 = 1 pc. Approx. Gross Weight= 0.839 Kg Ea.	
						APPV'D. BY:	ENGINEERS	DATE

8.3 Process Planning Sheets - AVC 11192 Reinforcement Crash Box Dash RH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 11192				PART NAME:	Reinforcement Crash Box Dash RH
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION
10	Sq Shr		1	1000 Ton		
20	Draw Die	1850 x 2000	1	1000 Ton	181,900.00	2 out separate blanks
30	Trim & Pierce Die	1850 x 2000	1	1000 Ton	204,500.00	2 out separate blanks
40	Flange & Restrike Die	1850 x 2000	1	1000 Ton	168,500.00	2 out separate blanks
50	Checking Fixture				14,000.00	
60						
70						
80				Total	\$568,900.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.450 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC
ENGINEERING LEVELS						1.0 400 MPa
DATE	LEVEL	DETAIL			MAT. SPECS:	
25-Jan-01	A03				APPROX. BLANK SIZE:	961 x 450 x 1.0 = 1pc Approx Gross Weight= 3.373 Kg Ea
					APPV'D. BY:	Notes DATE

8.3 Process Planning Sheets - AVC 11193 Reinforcement Crash Box Dash LH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 11193				PART NAME:	Reinforcement Crash Box Dash LH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION	
10	Sq Shr		1	1000 Ton			
20	Draw Die	1850 x 2000	1	1000 Ton		2 out separate blanks Tooling used to produce AVC11192 produces LH & RH	
30	Trim & Pierce Die	1850 x 2000	1	1000 Ton		2 out separate blanks Tooling used to produce AVC11192 produces LH & RH	
40	Flange & Restrike Die	1850 x 2000	1	1000 Ton		2 out separate blanks Tooling used to produce AVC11192 produces LH & RH	
50	Checking Fixture				14,000.00		
60							
70							
80				Total	\$14,000.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.450 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC	
ENGINEERING LEVELS						1.0 400 MPa	
DATE	LEVEL	DETAIL			MAT. SPECS:		
25-Jan-01	A03				APPROX. BLANK SIZE:	961 x 450 x 1.0 = 1pc Approx Gross Weight= 3.373 Kg Ea	
					APPV'D. BY:	Notes	DATE

8.3 Process Planning Sheets - AVC 11194 Reinforcement Tunnel

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 11194				PART NAME:	Reinforcement Tunnel	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION	
10	Sq Shr		1				
20	Draw Die	1834 x 2039	1	1000 ton	182,500.00		
30	Trim & Pierce Die	1834 x 2039	1	1000 ton	128,500.00		
40	Form Die	1834 x 2039	1	1000 ton	109,700.00		
50	Flange & Restrike Die	1834 x 2039	1	1000 ton	170,000.00		
60	Checking Fixture				34,000.00		
70							
80				Total	\$624,700.00	Manpower requirements = 1 operator to load lead press, 1 operators to unload and rack finished Intermediate operations to run with automation.450 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC	
ENGINEERING LEVELS						.7 950 MPa	
DATE	LEVEL	DETAIL			MAT. SPECS:		
05-Mar-01	C03				APPROX. BLANK SIZE:	.7 x 1075 x 900 =1pc Approx Gross Weight= 5.282 Kg Ea	
					APPV'D. BY:	Notes	DATE

8.3 Process Planning Sheets - AVC 11196 Closeout Outer Crash Box Dash RH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 11196				PART NAME:	Closeout Outer CrashBox Dash RH		
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION		
10	Sq Shr		1	1000Ton				
20	Draw Die	1900x2800	1	1000Ton	160,600.00	2 out separate blanks		
30	Trim & Pierce Die	1900x2800	1	1000Ton	147,400.00	2 out separate blanks		
40	Flange	1700x2600	1	1000Ton	152,500.00	2 out separate blanks		
50	Flange & Restrike	1700x2600	1	1000Ton	127,400.00	2 out separate blanks		
60	Checking Fixture				15,000.00			
70								
80				Total	\$602,900.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.450 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC		
ENGINEERING LEVELS								
DATE	LEVEL	DETAIL				MAT. SPECS:	.6 280 Mpa	
25-Jan-01	A10					APPROX. BLANK SIZE:	.6 x 1540 x 1113 = 2Pc Approx Weight.8.062 Kg 1 Pc = 4.031 Kg Ea	
						APPV'D. BY:	ENGINEERS	DATE

8.3 Process Planning Sheets - AVC 11197 Closeout Outer Crash Box Dash LH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 11197				PART NAME:	Closeout Outer Crash Box Dash LH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION	
10	Sq Shr			1000 Ton			
20	Draw Die	1900 x 2800	1	1000 Ton		2 out separate Blanks Tooling used to produce AVC11196 produces LH & RH	
30	Trim & Pierce Die	1900 x 2800	1	1000 Ton		2 out separate Blanks Tooling used to produce AVC11196 produces LH & RH	
40	Flange Die	1700 x 2600	1	1000 Ton		2 out separate Blanks Tooling used to produce AVC11196 produces LH & RH	
50	Flange & Restrike	1700 x 2600	1	1000 Ton		2 out separate Blanks Tooling used to produce AVC11196 produces LH & RH	
60	Checking Fixture				15,000.00		
70							
80				Total	\$15,000.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.450 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC	
ENGINEERING LEVELS						.8 400 MPa	
DATE	LEVEL	DETAIL			MAT. SPECS:		
25-Jan-01	A10				APPROX. BLANK SIZE:	951 x 900 x 0.8 = 1pc Approx Gross Weight= 5.34 Kg Ea	
					APPV'D. BY:	Notes	DATE

8.3 Process Planning Sheets - AVC 11202 Reinf Waist B Pillar RH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 11202				PART NAME:		Reinf Waist B Pillar RH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION		
10	Sq Shr							
20	Form Die	1000 x 2000	1	500 ton	167,000.00	Run Double attached 1LH & 1RH		
30	Trim Prc & Separate	1000 x 2000	1	500 ton	138,000.00	Run Double attached 1LH & 1RH		
40	Restrike Die	1000 x 2000	1	500 ton	154,000.00	Run Double unattached 1LH & 1RH		
50	Checking Fixture				22,000.00			
60								
70								
80				Total	\$481,000.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.500 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC		
ENGINEERING LEVELS						MAT. SPECS:	1.5 1250 MPa	
DATE	LEVEL	DETAIL				APPROX. BLANK SIZE:	1.5 X 922 x 345 = 2 pcs Approx Gross Weight = 2.977 kg 2 pcs / 1.4886 Kg Ea	
21-Apr-01	B02					APPV'D. BY:	ENGINEERS	DATE

8.3 Process Planning Sheets - AVC 11203 Reinf Waist B Pillar LH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 11203				PART NAME:	Reinf Waist B Pillar LH
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION
10	Sq Shr					
20	Form Die	1000 x 2000	1	500 ton		Run Double attached 1LH & 1RH Tooling used to produce AVC 11202 produces LH & RH
30	Trim Prc & Separate	1000 x 2000	1	500 ton		Run Double attached 1LH & 1RH Tooling used to produce AVC 11202 produces LH & RH
40	Restrike Die	1000 x 2000	1	500 ton		Run Double unattached 1LH & 1RH Tooling used to produce AVC 11202 produces LH & RH
50	Checking Fixture				22,000.00	
60						
70						
80				Total	\$22,000.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.500 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC
ENGINEERING LEVELS						1.5 1250 MPa
DATE	LEVEL	DETAIL			MAT. SPECS:	
21-Apr-01	B02				APPROX. BLANK SIZE:	1.5 X 922 x 345 = 2 pcs Approx Gross Weight = 2.977 kg 2 pcs / 1.4886 Kg Ea
					APPV'D. BY:	ENGINEERS
						DATE

8.3 Process Planning Sheets - AVC 11216 Brkt Member Bodyside Inner Attach RR RH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 11216				PART NAME:	Brkt Member Bodyside Inner Attach RR RH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION	
10	Progressive Die		1	350 Ton	182,000.00	12 station progressive die 1 out	
20	Checking Fixture				7,500.00		
30							
40							
50							
60							
70							
80				Total	\$189,500.00	Manpower requirements = 1 operator to load lead press, 1 operators to unload and rack finished Intermediate operations to run with automation.1000 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC	
ENGINEERING LEVELS							
DATE	LEVEL	DETAIL			MAT. SPECS:	1.2 500 MPa	
15-Mar-01	A02				APPROX. BLANK SIZE:	1.2 x 350 x 170 = 1 pc. Approx. Gross Weight= .5569 Kg Ea.	
					APPV'D. BY:	ENGINEERS	DATE

8.3 Process Planning Sheets - AVC 11217 Brkt Member Bodyside Inner Attach RR LH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 11217				PART NAME:	Brkt Member Bodyside Inner Attach RR LH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION	
10	Progressive Die		1	350 Ton	182,000.00	12 station progressive die 2 out	
20	Checking Fixture				7,500.00		
30							
40							
50							
60							
70							
80				Total	\$189,500.00	Manpower requirements = 1 operator to load lead press, 1 operators to unload and rack finished Intermediate operations to run with automation.1000 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC	
ENGINEERING LEVELS							
DATE	LEVEL	DETAIL			MAT. SPECS:	1.2 500 MPa	
15-Mar-01	A02				APPROX. BLANK SIZE:	1.2 x 350 x 170 = 1 pc. Approx. Gross Weight= .5569 Kg Ea.	
					APPV'D. BY:	ENGINEERS	DATE

8.3 Process Planning Sheets - AVC 11224 Brkt Member Ins Pnl Attach RH

Mercia, Ltd.  Process Planning Sheets

PART NO.		ULSAB-AVC 11224			PART NAME:		Brkt Member Ins Pnl Attach RH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION		
10	Progressive Die	1100 x 2000	1	350 Ton	180,000.00	8 station progressive die 2 out		
20	Checking Fixture				8,000.00			
30								
40								
50								
60								
70								
80				Total	\$188,000.00	Manpower requirements = 1 operator to load lead press, 1 operators to unload and rack finished Intermediate operations to run with automation.1000 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC		
ENGINEERING LEVELS						MAT. SPECS:	1.2 350 MPa	
DATE	LEVEL	DETAIL				APPROX. BLANK SIZE:	1.2 x 106 x 173 = 1 pc. Approx. Gross Weight= .171 Kg Ea.	
27-Feb-01	A00					APPV'D. BY:	ENGINEERS	DATE

8.3 Process Planning Sheets - AVC 11225 Brkt Member Ins Pnl Attach LH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 11225				PART NAME:	Brkt Member Ins Pnl Attach LH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION	
10	Progressive Die	1100 x 2000	1	350 Ton		8 station progressive die 2 out Tooling used to produce AVC11224 produces LH & RH	
20	Checking Fixture						
30							
40							
50							
60							
70							
80				Total	\$0.00	Manpower requirements = 1 operator to load lead press, 1 operators to unload and rack finished Intermediate operations to run with automation.1000 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC	
ENGINEERING LEVELS							
DATE	LEVEL	DETAIL			MAT. SPECS:	1.2 350 MPa	
27-Feb-01	A00				APPROX. BLANK SIZE:	1.2 x 106 x 173 = 1 pc. Approx. Gross Weight= .171 Kg Ea.	
					APPV'D. BY:	ENGINEERS	DATE

8.3 Process Planning Sheets - AVC 11226 A Brace Cowl Front

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 11226				PART NAME:	A Brace Cowl Front	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION	
10	Sq Shr						
20	Draw Die	1400 x 1500	1	800 Ton	155,200.00		
30	Trim & Pierce Die	1400 x 1500	1	800 Ton	138,400.00		
40	Flange Die	1400 x 1500	1	800 Ton	142,000.00		
50	Cam Trim & Prc Die	1400 x 1500	1	800 Ton	104,000.00		
60	Checking Fixture				9,500.00		
70							
80				Total	\$549,100.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.500 pcs per hour. NOTE: ALL DIMENSIONS ARE METRIC	
ENGINEERING LEVELS						1.0 500 MPa	
DATE	LEVEL	DETAIL			MAT. SPECS:		
05-Mar-01	A00				APPROX. BLANK SIZE:	500 x 400 x 1.0 = 1pc Approx Gross Weight= 1.560 Kg Ea	
					APPV'D. BY:	Notes	DATE

8.3 Process Planning Sheets - AVC 11227 A Brace Cowl Rear

Mercia, Ltd.  Process Planning Sheets

PART NO.		ULSAB-AVC 11227			PART NAME:		A Brace Cowl Rear	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION		
10	Sq Shr							
20	Draw Die	1400 x 1500	1	800 Ton	155,200.00			
30	Trim & Pierce Die	1400 x 1500	1	800 Ton	138,400.00			
40	Flange Die	1400 x 1500	1	800 Ton	142,000.00			
50	Cam Trim & Prc Die	1400 x 1500	1	800 Ton	104,000.00			
60	Checking Fixture				9,500.00			
70								
80				Total	\$549,100.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.500 pcs per hour. NOTE: ALL DIMENSIONS ARE METRIC		
ENGINEERING LEVELS								
DATE	LEVEL	DETAIL				MAT. SPECS:	1.0 500 MPa	
22-Mar-01	A01					APPROX. BLANK SIZE:	500 x 400 x 1.0 = 1pc Approx Gross Weight= 1.560 Kg Ea	
						APPV'D. BY:	Notes	DATE

8.3 Process Planning Sheets -- AVC 21016 Floor Front RH

Mercia, Ltd.  Process Planning Sheets

PART NO.		ULSAB AVC 21016			PART NAME:		Floor Front RH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION		
10	Blank Die	2400 x 2600	1	1600 Ton	108,000.00	2 out attached 1LH & 1RH		
20	Draw Die	2600 x 2800	1	1600 Ton	220,000.00	2 out attached 1LH & 1RH		
30	Trim, Prc & Sep Die	2400 x 2600	1	1600 Ton	165,400.00	2 out attached 1LH & 1RH		
40	Flange & Restrike Die	1800 2600	1	1600 Ton	198,000.00	2 out attached 1LH & 1RH		
50	Checking Fixture				34,000.00	2 out attached 1LH & 1RH		
60								
70								
80				Total	\$725,400.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.350 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC		
ENGINEERING LEVELS								
DATE	LEVEL	DETAIL				MAT. SPECS:	.65 300 MPa	
28-Feb-01	E01					APPROX. BLANK SIZE:	.65 x 2154 x 1500 = 1 pc Approx Gross Weigt = 16.38 2 pcs/ 8.190 Kg Ea	
						APPV'D. BY:	Notes	DATE
							Drawing updated	

8.3 Process Planning Sheets - AVC 21017 Floor Front LH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB AVC 21017				PART NAME:	Floor Front LH
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION
10	Blank Die	2400 x 2600	1	1600 Ton		2 out attached 1LH & 1RH Tooling used to produce AVC 21016 produces this part
20	Draw Die	2600 x 2800	1	1600 Ton		2 out attached 1LH & 1RH Tooling used to produce AVC 21016 produces this part
30	Trim, Prc & Sep Die	2400 x 2600	1	1600 Ton		2 out attached 1LH & 1RH Tooling used to produce AVC 21016 produces this part
40	Flange & Restrike Die	1800 2600	1	1600 Ton		2 out attached 1LH & 1RH Tooling used to produce AVC 21016 produces this part
50	Checking Fixture				34,000.00	2 out attached 1LH & 1RH Tooling used to produce AVC 21016 produces this part
60						
70						
80				Total	\$34,000.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.350 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC
ENGINEERING LEVELS						
DATE	LEVEL	DETAIL			MAT. SPECS:	.65 300 MPa
28-Feb-01	E01				APPROX. BLANK SIZE:	.65 x 2154 x 1500 = 1 pc Approx Gross Weigt = 16.38 2 pcs/ 8.190 Kg Ea
					APPV'D. BY:	Notes
						Drawing updated
						DATE

8.3 Process Planning Sheets - AVC 21038 Wheel house Outer RH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 21038				PART NAME:	Wheel House Outer RH
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION
10	Blank Die	1800 X 1800	1	1000 Ton	125,000.00	
20	Draw Die	2200 x 2200	1	1000 Ton	309,800.00	Run Double Attached 1LH & 1 RH
30	Trim & Pierce Die	2200 x 2200	1	1000 Ton	317,000.00	Run Double Attached 1LH & 1 RH
40	Cam Trim & Separat	2200 x 2200	1	1000 Ton	285,000.00	Run Double Attached 1LH & 1 RH
50	Flange & Restrike	2000 x 2000	1	1000 Ton	292,000.00	Run Double unattached 1LH & 1 RH
60	am Flange & Cam P	2000 x 2000	1	1000 Ton	262,400.00	Run Double unattached 1 Lh & 1 RH
70	Checking Fixture				34,000.00	
80				Total	\$1,625,200.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.450 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC
ENGINEERING LEVELS						
DATE	LEVEL	DETAIL			MAT. SPECS:	.6 280 MPa
28-Feb-01	D04				APPROX. BLANK SIZE:	.6 x 1225 x 1200 = 2Pc Approx Weight 6.87 Kg 1 Pc = 3.439 Kg Ea
					APPV'D. BY:	ENGINEERS
						Part size increase
						DATE

8.3 Process Planning Sheets - AVC 21039 Wheel House Outer LH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 21039				PART NAME:	Wheel House Outer LH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION	
10	Blank Die	1800 X 1800	1	1000 Ton			
20	Draw Die	2200 x 2200	1	1000 Ton		Run Double Attached 1LH & 1 RH Tooling used to produce ULSAB 21038 produces LH & RH	
30	Trim & Pierce Die	2200 x 2200	1	1000 Ton		Run Double Attached 1LH & 1 RH Tooling used to produce ULSAB 21038 produces LH & RH	
40	Cam Trim & Separat	2200 x 2200	1	1000 Ton		Run Double Attached 1LH & 1 RH Tooling used to produce ULSAB 21038 produces LH & RH	
50	Flange & Restrike	2000 x 2000	1	1000 Ton		Run Double unattached 1LH & 1 RH Tooling used to produce ULSAB 21038 produces LH & RH	
60	am Flange & Cam P	2000 x 2000	1	1000 Ton		Run Double unattached 1 Lh & 1 RH Tooling used to produce ULSAB 21038 produces LH & RH	
70	Checking Fixture				34,000.00		
80				Total	\$34,000.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.450 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC	
ENGINEERING LEVELS						.6 280 MPa	
DATE	LEVEL	DETAIL			MAT. SPECS:		
28-Feb-01	D04				APPROX. BLANK SIZE:	.6 x 1225 x 1200 = 2Pc Approx Weight 6.87 Kg 1 Pc = 3.439 Kg Ea	
					APPV'D. BY:	ENGINEERS	DATE
						Part size increase	

8.3 Process Planning Sheets - AVC 21020 Bodyside Outer RH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 21020				PART NAME:	Bodyside Outer RH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION	
10	Blank Die	2200 x 3500	1	1600 Ton	201,000.00		
20	Draw Die	2600 x 4100	1	1600 Ton	422,658.00	Run Single 1 Out RH	
30	Trim Prc Die	2600 x 4100	1	1600 Ton	324,000.00	Run Single 1 Out RH	
40	Cam Trim Die	2600 x 4100	1	1600 Ton	292,000.00	Run Single 1 Out RH	
50	Flange & Restrike Die	2600 x 4100	1	1600 Ton	328,500.00	Run Single 1 Out RH	
60	Cam Flange & Cam P	2600 x 4100		1600 Ton	262,500.00	Run Single 1 Out RH	
70	Checking Fixture				75,000.00		
80				Total	\$1,905,658.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.350 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC	
ENGINEERING LEVELS						TWB1 1.5 700 MPa TWB2 .7 260 MPa TWB3 1.8 700 MPa	
DATE	LEVEL	DETAIL			MAT. SPECS:		
11-Apr-01	D05				APPROX. BLANK SIZE:	TWB1 1.5 x 568 x 1200 = 7.974 Kg TWB2 0.7 x 1500 x 2651 = 21.71 Kg	
						TWB3 1.8 x 530 x 829 = 6.1687 Kg	
						Notes	DATE
					APPV'D. BY:	Blank Sizes changed	

8.3 Process Planning Sheets - AVC 21021 Bodyside Outer LH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 21021				PART NAME:	Bodyside Outer LH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION	
10	Blank Die	2200 x 3500	1	1600 Ton	201,000.00		
20	Draw Die	2600 x 4100	1	1600 Ton	422,658.00	Run Single 1 Out LH	
30	Trim Prc Die	2600 x 4100	1	1600 Ton	324,000.00	Run Single 1 Out LH	
40	Cam Trim Die	2600 x 4100	1	1600 Ton	292,000.00	Run Single 1 Out LH	
50	Flange & Restrike Die	2600 x 4100	1	1600 Ton	328,500.00	Run Single 1 Out LH	
60	Cam Flange & Cam P	2600 x 4100		1600 Ton	262,500.00	Run Single 1 Out LH	
70	Checking Fixture				75,000.00		
80				Total	\$1,905,658.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.350 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC	
ENGINEERING LEVELS						TWB1 1.5 700 MPa TWB2 .7 260 MPa TWB3 1.8 700 MPa	
DATE	LEVEL	DETAIL			MAT. SPECS:		
11-Apr-01	D05				APPROX. BLANK SIZE:	TWB1 1.5 x 568 x 1200 = 7.974 Kg TWB2 0.7 x 1500 x 2651 = 21.71 Kg	
						TWB3 1.8 x 530 x 829 = 6.1687 Kg	
						Notes	DATE
					APPV'D. BY:		

8.3 Process Planning Sheets - AVC 21036 Wheelhouse Inner RH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 21036				PART NAME:	Wheelhouse Inner RH
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION
10	Blank Die	2000 x 2800	1	1600 ton	105,000.00	
20	Draw Die	2200 x 3000	1	1600 ton	192,000.00	2 Out attached 1LH & 1RH
30	Trim & Separate Die	2200 x 3000	1	1600 ton	165,700.00	2 Out attached 1LH & 1RH
40	Flange & Restrike Die	2200 x 3000	1	1600 ton	180,500.00	2 Out attached 1LH & 1RH
50	Finish Prc Die	2200 x 3000	1	1600 ton	146,250.00	2 Out attached 1LH & 1RH
60	Checking Fixture				24,000.00	
70						
80				Total	\$813,450.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.350 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC
ENGINEERING LEVELS						
DATE	LEVEL	DETAIL			MAT. SPECS:	TWB 1.60 500 MPa TWB 2 1.4 700 MPa,TWB3 1.1 700 MPa
06-Mar-01	C11				APPROX. BLANK SIZE:	TWB 1 LH & TWB 1 RH .60 x 1160 x 645 = 3.525 Kg Ea TWB 2 1.4 x 745 x 466=3.79 kg each
						TWB 3 1.1 x 745 x 694 = 4.43 Kg
						Notes
					APPV'D. BY:	Revision Change Form Change
						DATE

8.3 Process Planning Sheets - AVC 21037 Wheelhouse Inner LH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 21037				PART NAME:	Wheelhouse Inner LH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION	
10	Blank Die	2000 x 2800	1	1600 ton			
20	Draw Die	2200 x 3000	1	1600 ton		2 Out Attached 1LH & 1RH Tooling used to produce AVC 21036 produces LH & RH	
30	Trim & Separate Die	2200 x 3000	1	1600 ton		2 Out Attached 1LH & 1RH Tooling used to produce AVC 21036 produces LH & RH	
40	Flange & Restrike Die	2200 x 3000	1	1600 ton		2 Out Attached 1LH & 1RH Tooling used to produce AVC 21036 produces LH & RH	
50	Finish Prc Die	2200 x 3000	1	1600 ton		2 Out Attached 1LH & 1RH Tooling used to produce AVC 21036 produces LH & RH	
60	Checking Fixture				24,000.00		
70							
80				Total	\$24,000.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.350 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC	
ENGINEERING LEVELS						TWB 1.60 500 MPa TWB 2 1.4 700 MPa,TWB3 1.1 700 MPa	
DATE	LEVEL	DETAIL			MAT. SPECS:		
06-Mar-01	C11				APPROX. BLANK SIZE:	TWB 1 LH & TWB 1 RH .60 x 1160 x 645 = 3.525 Kg Ea TWB 2 1.4 x 745 x 466=3.79 kg each	
						TWB 3 1.1 x 745 x 694 = 4.43 Kg	
						Notes	DATE
					APPV'D. BY:	Revision Change Form Change	

8.3 Process Planning Sheets - AVC 21046 Roof Panel



Mercia, Ltd.



Process Planning Sheets

PART NO.	ULSAB-AVC 21046				PART NAME:	Roof Panel	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION	
10	Sq Shr						
20	Draw Die	2300 x 2800	1	1600 ton	388,000.00	Single out Traditional Stamping	
30	Trim Die	2300 x 2800	1	1600 ton	298,000.00	Single out Traditional Stamping	
40	Flange & Restrike Di	2200 x 3000	1	1600 ton	348,000.00	Single out Traditional Stamping	
50	Checking Fixture				70,000.00		
60							
70							
80				Total	\$1,104,000.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.350 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC	
ENGINEERING LEVELS						.65 300 MPa	
DATE	LEVEL	DETAIL			MAT. SPECS:		
03-Feb-01	D01				APPROX. BLANK SIZE:	.65 x 1970 x 1328 = 1 pc Approx Gross weight = 13.33 Kg Ea	
					APPV'D. BY:	Notes	DATE
						Revision Change Form Change	

8.3 Process Planning Sheets - AVC 21049 Tunnel

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 21049				PART NAME:		Tunnel	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION		
10	Blank Die	2400 x 2600	1		95,000.00			
20	Draw Die	2600 x 2800	1	1600 ton	240,000.00			
30	Trim & Prc Die	2400 x 2600	1	1600 ton	185,500.00			
40	Flange & Restrike	2400 x 2600	1	1600 ton	228,000.00			
50	Cam Flange Die	1800 2600	1	1600 ton	121,000.00			
60	Checking Fixture							
70								
80				Total	\$869,500.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.350 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC		
ENGINEERING LEVELS						MAT. SPECS:	.65 300 MPa	
DATE	LEVEL	DETAIL		APPROX. BLANK SIZE:		.65 x 1839 x 1676 = 1 pc Approx Gross Weigt = 15.73 Kg Ea		
28-Feb-01	C07			APPV'D. BY:		Notes	DATE	
						Revision change		

8.3 Process Planning Sheets - AVC 21069 Floor Panel

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 21069				PART NAME:		Floor Panel	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION		
10	SQ Shr			1000 ton		1000 ton Blanking Press		
20	Draw Die	2400 x 2700	1	1600 Ton	295,000.00			
30	Trim & Prc Die	2400 x 2700	1	1600 Ton	251,000.00			
40	Flange & Restrike	2400 x 2700	1	1600 Ton	279,000.00			
50	Checking Fixture				65,000.00			
60								
70								
80				Total	\$890,000.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.350 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC		
ENGINEERING LEVELS						MAT. SPECS:	TWB1 0.6 210 MPa TWB 2 & 3 1.1 350 MPa TWB 4 .70 700 MPa	
DATE	LEVEL	DETAIL		APPROX. BLANK SIZE:		TWB 1 0.6 1414 x 920 = 6.088 Kg TWB 2 & 3 1.1 x 1414 x 400 = 4.852 Kg Ea		
27-Feb-01	B13							
					APPV'D. BY:	Notes	DATE	
						cutouts added rev change		

8.3 Process Planning Sheets - AVC 21070 Gutter C Pillar RH

Mercia, Ltd.  Process Planning Sheets

PART NO.		ULSAB-AVC 21070			PART NAME:		Gutter C pillar RH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION		
10	Trap Blank	1400 x 1500		500 ton	95,000.00	Run 2 out attached 1LH & 1 RH		
20	Draw Die	1650 x 1800		500 ton	180,000.00	Run 2 out attached 1LH & 1 RH		
30	Trim, Prc & Sep Die	1650 x 1800		500 ton	167,000.00	Run 2 out attached 1LH & 1 RH		
40	Flange & Restrike Die	1650 x 1800		500 ton	172,000.00	Run 2 out attached 1LH & 1 RH		
50	Checking Fixture				22,000.00			
60								
70								
80				Total	\$636,000.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.500 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC		
ENGINEERING LEVELS								
DATE	LEVEL	DETAIL		MAT. SPECS:		.65 210 MPa		
03-Feb-01	C01			APPROX. BLANK SIZE:		.65 x 650 x 800 (300) = 2 pcs Approx Gross Weight = 8.66 kg 4.33 Kg Ea		
				APPV'D. BY:		ENGINEERS		DATE

8.3 Process Planning Sheets - AVC 21071 Gutter C Pillar LH

Mercia, Ltd.  Process Planning Sheets

PART NO.		ULSAB-AVC 21071			PART NAME:		Gutter C pillar LH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION		
10	Trap Blank	1400 x 1500		500 ton		Tooling Used to produce AVC21072 produce LH & RH Run 2 out Attached		
20	Draw Die	1650 x 1800		500 ton		Tooling Used to produce AVC21072 produce LH & RH Run 2 out Attached		
30	Trim, Prc & Sep Die	1650 x 1800		500 ton		Tooling Used to produce AVC21072 produce LH & RH Run 2 out Attached		
40	Flange & Restrike Die	1650 x 1800		500 ton		Tooling Used to produce AVC21072 produce LH & RH Run 2 out Attached		
50	Checking Fixture				22,000.00			
60								
70								
80				Total	\$22,000.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.500 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC		
ENGINEERING LEVELS								
DATE	LEVEL	DETAIL		MAT. SPECS:		.65 210 MPa		
03-Feb-01	C01			APPROX. BLANK SIZE:		.65 x 650 x 800 (300) = 2 pcs Approx Gross Weight = 8.66 kg 4.33 Kg Ea		
				APPV'D. BY:		ENGINEERS		DATE

8.3 Process Planning Sheets - AVC 21072 C Pillar Inner RH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 21072				PART NAME:	C Pillar Inner RH
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION
10	Sq Shr					
20	Draw Die	2000 x 2400	1	1600 Ton	236,000.00	2 out Unattached 1 LH & 1RH
30	Trim & Pierce	2000 x 2400	1	1600 Ton	187,000.00	2 out Unattached 1 LH & 1RH
40	Trim & Pierce	2000 x 2400	1	1600 Ton	182,000.00	2 out Unattached 1 LH & 1RH
50	Flange & Restrike	2000 x 2400	1	1600 Ton	218,000.00	2 out Unattached 1 LH & 1RH
60	Finish Flange Die	2000 x 2400	1	1600 Ton	188,000.00	2 out Unattached 1 LH & 1RH
70	Checking Fixture				24,200.00	
80				Total	\$1,035,200.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.350 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC
ENGINEERING LEVELS						0.6 500 MPa
DATE	LEVEL	DETAIL			MAT. SPECS:	
19-Feb-01	C04				APPROX. BLANK SIZE:	710 x 980 x .65 = 1pc Approx Gross Weight= 3.527 Kg Ea
					APPV'D. BY:	Notes DATE

8.3 Process Planning Sheets - AVC C Pillar Inner LH

Mercia, Ltd.  Process Planning Sheets

PART NO.		ULSAB-AVC 21073			PART NAME:		C Pillar Inner LH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION		
10	Sq Shr							
20	Draw Die	2000 x 2400	1	1600 Ton		2 out Unattached 1 LH & 1RH Tooling used to produce AVC 21072 Produces LH & RH		
30	Trim & Pierce	2000 x 2400	1	1600 Ton		2 out Unattached 1 LH & 1RH Tooling used to produce AVC 21072 Produces LH & RH		
40	Trim & Pierce	2000 x 2400	1	1600 Ton		2 out Unattached 1 LH & 1RH Tooling used to produce AVC 21072 Produces LH & RH		
50	Flange & Restrike	2000 x 2400	1	1600 Ton		2 out Unattached 1 LH & 1RH Tooling used to produce AVC 21072 Produces LH & RH		
60	Finish Flange Die	2000 x 2400	1	1600 Ton		2 out Unattached 1 LH & 1RH Tooling used to produce AVC 21072 Produces LH & RH		
70	Checking Fixture				24,200.00			
80				Total	\$24,200.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.350 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC		
ENGINEERING LEVELS								
DATE	LEVEL	DETAIL				MAT. SPECS:	0.6 500 MPa	
19-Feb-01	C04					APPROX. BLANK SIZE:	710 x 980 x .65 = 1pc Approx Gross Weight= 3.527 Kg Ea	
						APPV'D. BY:	Notes	DATE

8.3 Process Planning Sheets - AVC 21074 Back Panel

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 21074				PART NAME:	Back Panel	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION	
10	Rough Blank	1400 x 2100	1	1000 ton	118,000.00		
20	Draw Die	1800 x 2800	1	1000 ton	245,673.00		
30	Trim & Prc Die	1800 x 2800	1	1000 ton	217,200.00		
40	Flange & Restrike Die	1800 x 2800	1	1000 ton	224,000.00		
50	Prc & Cam Prc Die	1600 x 2600	1	1000 ton	172,800.00		
60	Checking Fixture				57,200.00		
70							
80				Total	\$1,034,873.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.500 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC	
ENGINEERING LEVELS						.60 300 MPa	
DATE	LEVEL	DETAIL			MAT. SPECS:		
12-Jan-01	D001				APPROX. BLANK SIZE:	.60 x 1782 x 834 = 1 pcs Approx Gross Weight = 7.002 Kg Ea	
					APPV'D. BY:	ENGINEERS	DATE

8.3 Process Planning Sheets - AVC 21076 Rail Rear RH

Mercia, Ltd.  Process Planning Sheets

PART NO:	ULSAB-AVC 21076				PART NAME:		Rail Rear RH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION		
10	Blank Die	1800 x 2200	1	Transfer	110,000.00			
20	Form Die	2000 x 2500	1	Transfer	194,900.00	Run unattached 2 out 1LH & 1RH		
30	Trim Die	2000 x 2500	1	Transfer	168,000.00	Run unattached 2 out 1LH & 1RH		
40	Flange & Restrike	1800 x 2500	1	Transfer	187,000.00	Run unattached 2 out 1LH & 1RH		
50	Prc Die	1600 x 2200	1	Transfer	128,000.00	Run unattached 2 out 1LH & 1RH		
60	Checking fixture				22,000.00			
70								
80				Total	\$809,900.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished panels. Intermediate operations to run with automation.1000 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC		
ENGINEERING LEVELS							TWB 1 & 1.8 700 Mpa TWB 2 1.1 500 Mpa	
DATE	LEVEL	DETAIL						
08-Jan-01	B07					APPROX. BLANK SIZE:	TWB 1 1.8 x 981 x 571 = 7.864 kg each TWB 2 1.10 x 598 x 558 = 2.863 kg each	
						APPV'D. BY:	ENGINEERS	DATE

8.3 Process Planning Sheets - AVC 21077 Rail Rear LH

Mercia, Ltd.  Process Planning Sheets

PART NO:	ULSAB-AVC 21077				PART NAME:	Rail Rear LH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION	
10	Blank Die	1800 x 2200	1	Transfer			
20	Form Die	2000 x 2500	1	Transfer		Run Unattached 2 out 1LH & 1RH Tooling used to produce AVC21076 produces LH & RH	
30	Trim Die	2000 x 2500	1	Transfer		Run Unattached 2 out 1LH & 1RH Tooling used to produce AVC21076 produces LH & RH	
40	Flange & Restrike	1800 x 2500	1	Transfer		Run Unattached 2 out 1LH & 1RH Tooling used to produce AVC21076 produces LH & RH	
50	Prc Die	1600 x 2200	1	Transfer		Run Unattached 2 out 1LH & 1RH Tooling used to produce AVC21076 produces LH & RH	
60	Checking fixture				22,000.00		
70							
80				Total	\$22,000.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.1000 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC	
ENGINEERING LEVELS						TWB 1 & 1.8 700 Mpa TWB 2 1.1 500 Mpa	
DATE	LEVEL	DETAIL					
08-Jan-01	B07				APPROX. BLANK SIZE:	TWB 1 1.8 x 981 x 571 = 7.864 kg each TWB 2 1.10 x 598 x 558 = 2.863 kg each	
					APPV'D. BY:	ENGINEERS	DATE

8.3 Process Planning Sheets - AVC 21080 Bodyside Inner Rear RH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 21080				PART NAME:	Bodyside Inner Rear RH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION	
10	Blank Die	1800 x 2100	1	1000 ton	103,000.00		
20	Draw Die	2200 x 2300	1	1600 Ton	162,000.00	Produces 1RH Part	
30	Trim & Prc Die	2200 x 2300	1	1600 Ton	130,000.00	Produces 1RH Part	
40	Flange & Restrike	2100 x 2200	1	1600 Ton	150,000.00	Produces 1RH Part	
50	Prc & Cam Form End	1800 x 2100	1	1600 Ton	142,000.00	Produces 1RH Part	
60	Checking Fixture				40,000.00		
70							
80				Total	\$727,000.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.350 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC	
ENGINEERING LEVELS						.7 300 MPa	
DATE	LEVEL	DETAIL			MAT. SPECS:		
10-Feb-01	C02				APPROX. BLANK SIZE:	.7 x 1103 x 1334 = 1 pc. Approx. Gross Weight= 8.088 Kg Ea.	
					APPV'D. BY:	Notes	DATE
						Revision Change Form Change	

8.3 Process Planning Sheets - AVC 21081 Bodyside Inner Rear LH

Mercia, Ltd.  Process Planning Sheets

PART NO.		ULSAB-AVC 21081			PART NAME:		Bodyside Inner Rear LH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION		
10	Blank Die	1800 x 2100	1	1000 ton				
20	Draw Die	2200 x 2300	1	1600 Ton	162,000.00	Produces 1LH Part		
30	Trim & Prc Die	2200 x 2300	1	1600 Ton	130,000.00	Produces 1LH Part		
40	Flange & Restrike	2100 x 2200	1	1600 Ton	150,000.00	Produces 1LH Part		
50	Prc & Cam Form End	1800 x 2100	1	1600 Ton	142,000.00	Produces 1LH Part		
60	Checking Fixture				40,000.00			
70								
80				Total	\$624,000.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.350 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC		
ENGINEERING LEVELS						MAT. SPECS:	.7 300 MPa	
DATE	LEVEL	DETAIL				APPROX. BLANK SIZE:	.7 x 1103 x 1334 = 1 pc. Approx. Gross Weight= 8.088 Kg Ea.	
10-Feb-01	C02					APPV'D. BY:	Notes	DATE
							Revision Change Form Change	

8.3 Process Planning Sheets - AVC 21086 Rocker Inner RH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 21086				PART NAME:		Rocker Inner RH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION		
10	SQ Shr		1			1000 Ton Blanking Press		
20	Draw Die	2000 x 2800	1	1000 ton	180,000.00	2 out unattached 1 LH & 1 RH		
30	Trim & Prc Die	2000 x 2800	1	1000 ton	136,500.00	2 out unattached 1 LH & 1 RH		
40	Flange & Restrike Die	2000 x 2800	1	1000 ton	172,000.00	2 out unattached 1 LH & 1 RH		
50	Checking Fixture				18,500.00			
60								
70								
80				Total	\$507,000.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.350 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC		
ENGINEERING LEVELS						MAT. SPECS:	TWB 1 1.5 700 MPa TWB 2 0.70 700 MPa	
DATE	LEVEL	DETAIL		APPROX. BLANK SIZE:		TWB1 x 1.5 x 537 x 596 = 3.770 Kg TWB 2 .7 x 1347 x 596 = 4.413 kg each		
11-Apr-01	B14							
					APPV'D. BY:		DATE	

8.3 Process Planning Sheets - AVC 21087 Rocker Inner LH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 21087				PART NAME:		Rocker Inner LH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION		
10	SQ Shr		1			1000 Ton Blanking Press		
20	Draw Die	2000 x 2800	1	1000 ton		2 out unattached 1 LH & 1 RH Tooling to produce AVC 21086 produces LH & RH		
30	Trim & Prc Die	2000 x 2800	1	1000 ton		2 out unattached 1 LH & 1 RH Tooling to produce AVC 21086 produces LH & RH		
40	Flange & Restrike Di	2000 x 2800	1	1000 ton		2 out unattached 1 LH & 1 RH Tooling to produce AVC 21086 produces LH & RH		
50	Checking Fixture				18,500.00			
60								
70								
80				Total	\$18,500.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.350 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC		
ENGINEERING LEVELS						MAT. SPECS:	TWB 1 1.5 700 MPa TWB 2 0.70 700 MPa	
DATE	LEVEL	DETAIL		APPROX. BLANK SIZE:		TWB1 x 1.5 x 537 x 596 = 3.770 Kg TWB 2 .7 x 1347 x 596 = 4.413 kg each		
11-Apr-01	B14							
					APPV'D. BY:			

8.3 Process Planning Sheets - AVC 21115 Header Rear

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 21115				PART NAME:		Header Rear	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION		
10	Sq Shr					600 ton blanking press		
20	Draw Die	1150 x 2400	1	800 ton	230,500.00			
30	Trim & Prc Die	1150 x 2400	1	800 ton	187,400.00			
40	Flange & Restrike	1150 x 2400	1	800 ton	208,600.00			
50	Checking Fixture				24,000.00			
60								
70								
80				Total	\$650,500.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.500 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC		
ENGINEERING LEVELS						MAT. SPECS:	.65 350 MPa	
DATE	LEVEL	DETAIL		APPROX. BLANK SIZE:		.65 X 1332 x 456 = 1 pc. Approx. Gross Weight= 3.10 kg Ea.		
22-Mar-01	E04			APPV'D. BY:		Notes		DATE
						Form Change Cutouts added		

8.3 Process Planning Sheets - AVC 21154 B Pillar Inner RH

Mercia, Ltd.  Process Planning Sheets

PART NO.		ULSAB-AVC 21154			PART NAME:		B Pillar Inner RH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION		
10	Blank Die	1900 x 2100	1	1600Ton	126,000.00	Common Blank Die		
20	Draw Die	2200 x 2400	1	1600 Ton	265,000.00	Produces 2 outt unattached 1LH 1RH		
30	Trim Die	2200 x 2400	1	1600 Ton	238,000.00	Produces 2 outt unattached 1LH 1RH		
40	Restrike Die	2200 x 2400	1	1600 Ton	252,000.00	Produces 2 outt unattached 1LH 1RH		
50	Cam Prc & Prc Die	2000 x 2200	1	1600 Ton	187,000.00	Produces 2 outt unattached 1LH 1RH		
60	Checking Fixture				38,000.00			
70								
80				Total	\$1,106,000.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.350 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC		
ENGINEERING LEVELS								
DATE	LEVEL	DETAIL				MAT. SPECS:	.7 950 MPa	
07-Mar-01	B03					APPROX. BLANK SIZE:	.7 X 1225 x 605 = 1 pc. Approx. Gross Weight= 4.046 Kg Ea.	
						APPV'D. BY:	ENGINEERS	DATE

8.3 Process Planning Sheets - AVC 21155 B Pillar Inner LH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 21155				PART NAME:	B Pillar Inner LH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION	
10	Blank Die	1900 x 2100	1	1600Ton		common blank Die	
20	Draw Die	2200 x 2400	1	1600 Ton		Produces 2 out unattached 1LH 1RH Tooling Used to produce AVC21154 produces LH & RH	
30	Trim Die	2200 x 2400	1	1600 Ton		Produces 2 out unattached 1LH 1RH Tooling Used to produce AVC21154 produces LH & RH	
40	Restrike Die	2200 x 2400	1	1600 Ton		Produces 2 out unattached 1LH 1RH Tooling Used to produce AVC21154 produces LH & RH	
50	Cam Prc & Prc Die	2000 x 2200	1	1600 Ton		Produces 2 out unattached 1LH 1RH Tooling Used to produce AVC21154 produces LH & RH	
60	Checking Fixture				38,000.00		
70							
80				Total	\$38,000.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.350 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC	
ENGINEERING LEVELS						.7 950 MPa	
DATE	LEVEL	DETAIL			MAT. SPECS:		
07-Mar-01	B03				APPROX. BLANK SIZE:	.7 X 1225 x 605 = 1 pc. Approx. Gross Weight= 4.046 Kg Ea.	
					APPV'D. BY:	ENGINEERS	DATE

8.3 Process Planning Sheets - AVC 21188 Rail Rear Outer Floor Extension RH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 21188				PART NAME:		Rail Rear Outer Floor Extension RH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION		
10	Blank & Pierce Die	800 x 1000	1	350 Ton	93,600.00	Common Die		
20	Form Die	900 x 1100	1	350 Ton	119,200.00	2 out unattached 1LH 1 RH		
30	Flange Die	900 x 1100	1	350 Ton	110,400.00	2 out unattached 1LH 1 RH		
40	Checking Fixture				7,500.00			
50								
60								
70								
80				Total	\$330,700.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.500 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC		
ENGINEERING LEVELS						MAT. SPECS:	1.1 500 MPa	
DATE	LEVEL	DETAIL		APPROX. BLANK SIZE:		1.1 x 216 x 440 = 1 pc. Approx. Gross Weight= 0.8154 Kg Ea.		
12-Jan-01	A00			APPV'D. BY:		ENGINEERS	DATE	

8.3 Process Planning Sheets - AVC 21189 Rail Rear Outer Floor Extension LH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 21189				PART NAME:	Rail Rear Outer Floor Extension LH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION	
10	Blank & Pierce Die	800 x 1000	1	350 Ton		Common Die	
20	Form Die	900 x 1100	1	350 Ton		2 out unattached 1LH 1 RH Tooling Used to produce AVC21188 produces LH & RH	
30	Flange Die	900 x 1100	1	350 Ton		2 out unattached 1LH 1 RH Tooling Used to produce AVC21188 produces LH & RH	
40	Checking Fixture				7,500.00		
50							
60							
70							
80				Total	\$7,500.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.500 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC	
ENGINEERING LEVELS						1.1 500 MPa	
DATE	LEVEL	DETAIL			MAT. SPECS:		
12-Jan-01	A00				APPROX. BLANK SIZE:	1.1 x 216 x 440 = 1 pc. Approx. Gross Weight= 0.8154 Kg Ea.	
					APPV'D. BY:	ENGINEERS	DATE

8.3 Process Planning Sheets - AVC 21214 Support Back Panel

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 21214				PART NAME:		Support Back Panel	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION		
10	Sq Shr					600 ton blanking press		
20	Draw Die	1150 x 2400	1	800 ton	210,400.00			
30	Trim & Prc Die	1150 x 2400	1	800 ton	186,600.00			
40	Flange & Restrike	1150 x 2400	1	800 ton	192,400.00			
50	Checking Fixture				26,000.00			
60								
70								
80				Total	\$615,400.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.500 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC		
ENGINEERING LEVELS						MAT. SPECS:	.60 300 MPa	
DATE	LEVEL	DETAIL				APPROX. BLANK SIZE:	.60 X 1424 x 450 = 1 pc. Approx. Gross Weight= 3.019 kg Ea.	
11-Jan-01	B00					APPV'D. BY:	ENGINEERS	DATE

8.3 Process Planning Sheets - AVC 21218 Reinforcement B Pillar Lower RH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB AVC 21218				PART NAME:		Reinforcement B Pillar Lower RH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION		
10	Dev Blank Die	1200 x 1400	1	800 ton	65,000.00	Run double unattached LH & RH		
20	Form Die	1200 x 1400	1	800 ton	100,000.00	Run double unattached LH & RH		
30	Checking Fixture				12,500.00			
40								
50								
60								
70								
80				Total	\$177,500.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.500 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC		
ENGINEERING LEVELS						MAT. SPECS:	.70 700 MPa	
DATE	LEVEL	DETAIL		APPROX. BLANK SIZE:		.07 x 600 x 375 = 1 pc Approx Gross Weight = 1.2285 Kg Ea		
08-Mar-01	A02			APPV'D. BY:		Notes	DATE	
						Revision Change Blanksize Change		

8.3 Process Planning Sheets - AVC 21219 Reinforcement B Pillar Lower LH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB AVC 21219				PART NAME:	Reinforcement B Pillar Lower LH
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION
10	Dev Blank Die	1200 x 1400	1	800 ton		Run double unattached LH & RH Tooling used to produce AVC 21218 produces LH & RH
20	Form Die	1200 x 1400	1	800 ton		Run double unattached LH & RH Tooling used to produce AVC 21218 produces LH & RH
30	Checking Fixture				12,500.00	
40						
50						
60						
70						
80				Total	\$12,500.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.500 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC
ENGINEERING LEVELS						
DATE	LEVEL	DETAIL			MAT. SPECS:	.70 700 MPa
08-Mar-01	A02				APPROX. BLANK SIZE:	.07 x 600 x 375 = 1 pc Approx Gross Weight = 1.2285 Kg Ea
					APPV'D. BY:	Notes
						Revision Change Blanksize Change
						DATE

8.3 Process Planning Sheets - AVC 21220 Reinforcement B Pillar Rocker Rear RH

Mercia, Ltd.



Process Planning Sheets

PART NO:	ULSAB-AVC 21220				PART NAME:	Reinf orcement B Pillar Rocker Rear RH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION	
10	Blank Die	2200 x 2600	1	1600 ton	125,000.00		
20	Draw Die	2500 x 2800	1	1600 ton	268,000.00	Run 2 out unattached 1LH & 1RH	
30	Trim Die	2500 x 2800	1	1600 ton	228,000.00	Run 2 out unattached 1LH & 1RH	
40	Flange & Restrike Die	2500 x 2800	1	1600 ton	243,000.00	Run 2 out unattached 1LH & 1RH	
50	Prc & Cam Prc Die	2500 x 2800	1	1600 ton	168,200.00	Run 2 out unattached 1LH & 1RH	
60	Checking Fixture				34,000.00		
70							
80				Total	\$1,066,200.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished panels. Intermediate operations to run with automation.350 pcs per hour	
ENGINEERING LEVELS							
DATE	LEVEL	DETAIL			MAT. SPECS:	TWB1 1.2 700 Mpa TWB2 1.4 700 Mpa	
06-Mar-01	A05				APPROX. BLANK SIZE:	TWB1 1.2 x 1097 x 467 =4.79 Kg TWB2 1.4 x 924 x 463 =4.671Kg	
					APPV'D. BY:	Notes	DATE
						TWB rev Change	

8.3 Process Planning Sheets - AVC 21221 Reinforcement B Pillar Rocker Rear LH

Mercia, Ltd.



Process Planning Sheets

PART NO:	ULSAB-AVC 21221				PART NAME:	Reinf orcement B Pillar Rocker Rear LH		
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION		
10	Blank Die	2200 x 2600	1	1600 ton				
20	Draw Die	2500 x 2800	1	1600 ton		Run 2 out unattached 1LH & 1RH Tooling used to produce AVC21220 produces LH & RH		
30	Trim Die	2500 x 2800	1	1600 ton		Run 2 out unattached 1LH & 1RH Tooling used to produce AVC21220 produces LH & RH		
40	Flange & Restrike Die	2500 x 2800	1	1600 ton		Run 2 out unattached 1LH & 1RH Tooling used to produce AVC21220 produces LH & RH		
50	Prc & Cam Prc Die	2500 x 2800	1	1600 ton		Run 2 out unattached 1LH & 1RH Tooling used to produce AVC21220 produces LH & RH		
60	Checking Fixture				34,000.00			
70								
80				Total	\$34,000.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished panels. Intermediate operations to run with automation.350 pcs per hour		
ENGINEERING LEVELS						MAT. SPECS:	TWB1 1.2 700 Mpa TWB2 1.4 700 Mpa	
DATE	LEVEL	DETAIL				APPROX. BLANK SIZE:	TWB1 1.2 x 1097 x 467 =4.79 Kg TWB2 1.4 x 924 x 463 =4.671Kg	
06-Mar-01	A05					APPV'D. BY:	Note	DATE
							TWB rev Change	

8.3 Process Planning Sheets - AVC 21228 Crossmember Roof

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 21228				PART NAME:	Crossmemeber Roof
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION
10	Sq Shr					
20	Form Die	700 x 1800	1	Transfer	114,200.00	Single out
30	Trim & Prc Die	700 x 1800	1	Transfer	109,600.00	Single out
40	Restrike Die	700 x 1800	1	Transfer	103,200.00	Single out
50	Checking Fixture				14,000.00	
60						
70						
80				Total	\$341,000.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.1000 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC
ENGINEERING LEVELS						
DATE	LEVEL	DETAIL			MAT. SPECS:	.7 700 MPa
07-Mar-01	A00				APPROX. BLANK SIZE:	.7 X 900 x 300 = 1 pc. Approx. Gross Weight= 1.474 Kg Ea.
					APPV'D. BY:	ENGINEERS
						DATE

8.3 Process Planning Sheets - AVC 21233 Reinforcement Waiste B Pillar Outer LH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 21233				PART NAME:	Reinforcement Waiste B Pillar Outer LH
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION
10	Dev Blank & Prc Die	1100 x 1200	1	800 ton		Common Blank Die
20	Flange Die	1200 x 1500	1	800 ton		2 out unattached 1 LH & 1 RH Tooling used to produce AVC 21232 produces LH & RH
30	Form Die	1200 x1500	1	800 ton		2 out unattached 1 LH & 1 RH Tooling used to produce AVC 21232 produces LH & RH
40	Checking Fixture				8,500.00	
50						
60						
70						
80				Total	\$8,500.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.500 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC
ENGINEERING LEVELS						
DATE	LEVEL	DETAIL			MAT. SPECS:	.8 700 MPa
25-Apr-01	A00				APPROX. BLANK SIZE:	.8 X 318 x 200 = 1 pc. Approx. Gross Weight= 0.396 Kg Ea.
					APPV'D. BY:	ENGINEERS
						DATE

8.3 Process Planning Sheets - AVC 21232 Reinforcement Waiste B Pillar Outer RH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 21232				PART NAME:	Reinforcement Waiste B Pillar Outer RH		
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION		
10	Dev Blank & Prc Die	1100 x 1200	1	800 ton	70,000.00	Common Blank Die		
20	Flange Die	1200 x 1500	1	800 ton	108,000.00	2 out unattached 1 LH & 1 RH		
30	Form Die	1200 x1500	1	800 ton	116,000.00	2 out unattached 1 LH & 1 RH		
40	Checking Fixture				8,500.00			
50								
60								
70								
80				Total	\$302,500.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.500 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC		
ENGINEERING LEVELS								
DATE	LEVEL	DETAIL		MAT. SPECS:		.8 700 MPa		
25-Apr-01	A00			APPROX. BLANK SIZE:		.8 X 318 x 200 = 1 pc. Approx. Gross Weight= 0.396 Kg Ea.		
				APPV'D. BY:		ENGINEERS		DATE

8.3 Process Planning Sheets - AVC 31016 Floor Front RH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB AVC 31016				PART NAME:	Floor Front RH
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION
10	Blank Die	2400 x 2600	1	1600 ton		Tooling used to produce AVC 21016 produces this part
20	Draw Die	2600 x 2800	1	1600 ton		Tooling used to produce AVC 21016 produces this part
30	Trim, Prc & Sep Die	2400 x 2600	1	1600 ton		Tooling used to produce AVC 21016 produces this part
40	Flange & Restrike Die	1800 2600	1	1600 ton		Tooling used to produce AVC 21016 produces this part
50	Checking Fixture					Tooling used to produce AVC 21016 produces this part
60						
70						
80				Total	\$0.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.350 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC
ENGINEERING LEVELS						
DATE	LEVEL	DETAIL			MAT. SPECS:	.65 300 MPa
28-Feb-01	E01				APPROX. BLANK SIZE:	.65 x 2154 x 1500 = 1 pc Approx Gross Weight = 16.38 2 pcs/ 8.190 Kg Ea
					APPV'D. BY:	notes
						Drawing updated no physical change
						DATE

8.3 Process Planning Sheets - AVC 31017 Floor Front LH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB AVC 31017				PART NAME:	Floor Front LH
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION
10	Blank Die	2400 x 2600	1	1600 ton		Tooling used to produce AVC 21016 produces this part
20	Draw Die	2600 x 2800	1	1600 ton		Tooling used to produce AVC 21016 produces this part
30	Trim, Prc & Sep Die	2400 x 2600	1	1600 ton		Tooling used to produce AVC 21016 produces this part
40	Flange & Restrike Die	1800 2600	1	1600 ton		Tooling used to produce AVC 21016 produces this part
50	Checking Fixture					Tooling used to produce AVC 21016 produces this part
60						
70						
80				Total	\$0.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.350 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC
ENGINEERING LEVELS						
DATE	LEVEL	DETAIL			MAT. SPECS:	.65 300 MPa
28-Feb-01	E01				APPROX. BLANK SIZE:	.65 x 2154 x 1500 = 1 pc Approx Gross Weight = 16.38 2 pcs/ 8.190 Kg Ea
					APPV'D. BY:	ENGINEERS
						DATE

8.3 Process Planning Sheets - AVC 31036 Wheelhouse Inner RH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 31036				PART NAME:	Wheelhouse Inner RH
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION
10	Blank Die	2000 x 2800	1	1600 ton	105,000.00	
20	Draw Die	2200 x 3000	1	1600 ton	192,000.00	2 Out attached 1LH & 1RH
30	Trim & Separate Die	2200 x 3000	1	1600 ton	165,700.00	2 Out attached 1LH & 1RH
40	Flange & Restrike Die	2200 x 3000	1	1600 ton	180,500.00	2 Out attached 1LH & 1RH
50	Finish Prc Die	2200 x 3000	1	1600 ton	146,250.00	2 Out attached 1LH & 1RH
60	Checking Fixture				24,000.00	
70						
80				Total	\$813,450.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.350 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC
ENGINEERING LEVELS						
DATE	LEVEL	DETAIL			MAT. SPECS:	TWB 1.60 500 MPa TWB 2 1.4 700 MPa,TWB3 1.1 700 MPa
06-Mar-01	C10				APPROX. BLANK SIZE:	TWB 1 LH & TWB 1 RH .60 x 1160 x 645 = 3.525 Kg Ea TWB 2 1.4 x 745 x 466=3.79 kg each
						TWB 3 1.1 x 745 x 694 = 4.43 Kg
						Notes
					APPV'D. BY:	Revision Change Form Change
						DATE

8.3 Process Planning Sheets - AVC 31037 Wheelhouse Inner LH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 31037				PART NAME:	Wheelhouse Inner LH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION	
10	Blank Die	2000 x 2800	1	1600 ton			
20	Draw Die	2200 x 3000	1	1600 ton		2 Out Attached 1LH & 1RH Tooling used to produce AVC 31036 produces LH & RH	
30	Trim & Separate Die	2200 x 3000	1	1600 ton		2 Out Attached 1LH & 1RH Tooling used to produce AVC 31036 produces LH & RH	
40	Flange & Restrike Die	2200 x 3000	1	1600 ton		2 Out Attached 1LH & 1RH Tooling used to produce AVC 31036 produces LH & RH	
50	Finish Prc Die	2200 x 3000	1	1600 ton		2 Out Attached 1LH & 1RH Tooling used to produce AVC 31036 produces LH & RH	
60	Checking Fixture				24,000.00		
70							
80				Total	\$24,000.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.350 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC	
ENGINEERING LEVELS						TWB 1.60 500 MPa TWB 2 1.4 700 MPa,TWB3 1.1 700 MPa	
DATE	LEVEL	DETAIL			MAT. SPECS:		
06-Mar-01	C10				APPROX. BLANK SIZE:	TWB 1 LH & TWB 1 RH .60 x 1160 x 645 = 3.525 Kg Ea TWB 2 1.4 x 745 x 466=3.79 kg each	
						TWB 3 1.1 x 745 x 694 = 4.43 Kg	
						Notes	DATE
					APPV'D. BY:	Revision Change Form Change	

8.3 Process Planning Sheets - AVC 31038 Wheel House Outer RH

Mercia, Ltd.  Process Planning Sheets

PART NO.		ULSAB-AVC 31038			PART NAME:		Wheel House Outer RH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION		
10	Blank Die	1800 X 2000	1	1000 ton	125,000.00	1000 Ton Blanking Line		
20	Draw Die	2200 x 2200	1	1000 ton	339,800.00	Run Double Attached 1LH & 1 RH		
30	Trim & Pierce Die	2200 x 2200	1	1000 ton	327,000.00	Run Double Attached 1LH & 1 RH		
40	Cam Trim & Separate	2200 x 2200	1	1000 ton	305,000.00	Run Double Attached 1LH & 1 RH		
50	Flange & Restrike	2200 x 2200	1	1000 ton	300,000.00	Run Double unattached 1LH & 1 RH		
60	Cam Flange & Cam P	2200 x 2200	1	1000 ton	292,000.00	Run Double unattached 1 Lh & 1 RH		
70	Checking Fixture				36,000.00			
80				Total	\$1,724,800.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.450 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC		
ENGINEERING LEVELS								
DATE	LEVEL	DETAIL				MAT. SPECS:	.6 280 MPa	
28-Feb-01	D03					APPROX. BLANK SIZE:	.6 x 1300 x 1200 = 2Pc Approx Weight. 7.3008 Kg 1 Pc = 3.6505 Kg Ea	
						APPV'D. BY:	Notes	DATE
							Part Size increase	

8.3 Process Planning Sheets - AVC 31039 Wheel House Outer LH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 31039				PART NAME:	Wheel House Outer LH
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION
10	Blank Die	1800 X 2000	1	1000 ton		1000 Ton Blanking Line
20	Draw Die	2200 x 2200	1	1000 ton		Run Double Attached 1LH & 1 RH Tooling used to produce ULSAB 31038 produces LH & RH
30	Trim & Pierce Die	2200 x 2200	1	1000 ton		Run Double Attached 1LH & 1 RH Tooling used to produce ULSAB 31038 produces LH & RH
40	Cam Trim & Separat	2200 x 2200	1	1000 ton		Run Double Attached 1LH & 1 RH Tooling used to produce ULSAB 31038 produces LH & RH
50	Flange & Restrike	2200 x 2200	1	1000 ton		Run Double Attached 1LH & 1 RH Tooling used to produce ULSAB 31038 produces LH & RH
60	am Flange & Cam P	2200 x 2200	1	1000 ton		Run Double Attached 1LH & 1 RH Tooling used to produce ULSAB 31038 produces LH & RH
70	Checking Fixture				36,000.00	
80				Total	\$36,000.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.450 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC
ENGINEERING LEVELS						
DATE	LEVEL	DETAIL			MAT. SPECS:	.6 280 MPa
28-Feb-01	D03				APPROX. BLANK SIZE:	.6 x 1300 x 1200 = 2Pc Approx Weight. 7.3008 Kg 1 Pc = 3.6505 Kg Ea
					APPV'D. BY:	Notes
						Part Size increase
						DATE

8.3 Process Planning Sheets - AVC 31049 Tunnel

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 31049				PART NAME:	Tunnel	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION	
10	Blank Die	2400 x 2600	1			Tooling used to produce AVC 21049 produces this part	
20	Draw Die	2600 x 2800	1	1600 ton		Tooling used to produce AVC 21049 produces this part	
30	Trim & Prc Die	2400 x 2600	1	1600 ton		Tooling used to produce AVC 21049 produces this part	
40	Flange & Restrike	2400 x 2600	1	1600 ton		Tooling used to produce AVC 21049 produces this part	
50	Cam Flange Die	1800 2600	1	1600 ton		Tooling used to produce AVC 21049 produces this part	
60	Checking Fixture						
70							
80				Total	\$0.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.350 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC	
ENGINEERING LEVELS							
DATE	LEVEL	DETAIL			MAT. SPECS:	.65 300 MPa	
28-Feb-01	C07				APPROX. BLANK SIZE:	.65 x 1839 x 1676 = 1 pc Approx Gross Weigt = 15.73 Kg Ea	
					APPV'D. BY:	Notes	DATE
						Revision change	

8.3 Process Planning Sheets - AVC 31069 Floor Panel

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 31069				PART NAME:	Floor Panel
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION
10	SQ Shr					1000 ton Blanking Press
20	Draw Die	2500 x 2800	1	1600 ton	300,000.00	
30	Trim & Prc Die	2500 x 2800	1	1600 ton	230,000.00	
40	Flange & Restrike	2500 x 2800	1	1600 ton	285,000.00	
50	Checking Fixture				65,000.00	
60						
70						
80				Total	\$880,000.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.350 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC
ENGINEERING LEVELS						
DATE	LEVEL	DETAIL			MAT. SPECS:	TWB1 0.6 210 MPa TWB 2 & 3 1.1 350 MPa TWB 4 .70 700 MPa
08-Mar-01	B10				APPROX. BLANK SIZE:	TWB 1 0.6 x 920 x 1875 = 8.073 Kg TWB 2 & 3 1.1 x 400 x 1875 = 6.435 Kg
						TWB 4 0.7 x 360 x 1720 = 3.3808kg
						Notes
					APPV'D. BY:	Revision Change Form Change
						DATE

8.3 Process Planning Sheets - AVC 31074 Back Panel

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 31074				PART NAME:	Back Panel	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION	
10	Rough Blank	1400 x 2100	1	1000 ton	118,000.00		
20	Draw Die	1800 x 2800	1	1000 ton	245,673.00		
30	Trim & Prc Die	1800 x 2800	1	1000 ton	217,200.00		
40	Flange & Restrike Die	1800 x 2800	1	1000 ton	224,000.00		
50	Prc & Cam Prc Die	1600 x 2600	1	1000 ton	172,800.00		
60	Checking Fixture				57,200.00		
70							
80				Total	\$1,034,873.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.450 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC	
ENGINEERING LEVELS						.60 300 MPa	
DATE	LEVEL	DETAIL			MAT. SPECS:		
04-Jan-01	D00				APPROX. BLANK SIZE:	.60 x 1762 x 813 = 1 pcs Approx Gross Weight = 6.679 Kg Ea	
					APPV'D. BY:	ENGINEERS	DATE

8.3 Process Planning Sheets - AVC 31076 Rail Rear RH

Mercia, Ltd.



Process Planning Sheets

PART NO:	ULSAB-AVC 31076				PART NAME:		Rail Rear RH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION		
10	Blank Die	1800 x 2200	1	Transfer	110,000.00			
20	Form Die	2000 x 2500	1	Transfer	208,500.00	Run unattached 2 out 1LH & 1RH		
30	Trim Die	2000 x 2500	1	Transfer	187,400.00	Run unattached 2 out 1LH & 1RH		
40	Flange & Restrike	1800 x 2500	1	Transfer	196,000.00	Run Unattached 2 out 1LH & 1RH		
50	Prc Die	1600 x 2200	1	Transfer	140,000.00	Run Unattached 2 out 1LH & 1RH		
60	Checking fixture				26,000.00			
70								
80				Total	\$867,900.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished panels. Intermediate operations to run with automation.1000 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC		
ENGINEERING LEVELS								
DATE	LEVEL	DETAIL					TWB 1 & 1.8 700 Mpa TWB 2 1.1 500 Mpa	
02-Feb-01	B08				APPROX. BLANK SIZE:		TWB 1 1.8 x 981 x 571 = 7.8645 kg each TWB 2 1.10 x 1016 x 598 = 5.212 kg each	
					APPV'D. BY:		ENGINEERS	DATE

8.3 Process Planning Sheets - AVC 31077 Rail Rear LH

Mercia, Ltd.



Process Planning Sheets

PART NO:	ULSAB-AVC 31077				PART NAME:		Rail Rear LH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION		
10	Blank Die	1800 x 2200	1	Transfer				
20	Form Die	2000 x 2500	1	Transfer		Run unattached 2 out 1LH & 1RH		
30	Trim Die	2000 x 2500	1	Transfer		Run unattached 2 out 1LH & 1RH		
40	Flange & Restrike	1800 x 2500	1	Transfer		Run unattached 2 out 1LH & 1RH		
50	Prc Die	1600 x 2200	1	Transfer		Run unattached 2 out 1LH & 1RH		
60	Checking fixture				26,000.00			
70								
80				Total	\$26,000.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished panels. Intermediate operations to run with automation.1000 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC		
ENGINEERING LEVELS							TWB 1 & 1.8 700 Mpa TWB 2 1.1 500 Mpa	
DATE	LEVEL	DETAIL				APPROX. BLANK SIZE:	TWB 1 1.8 x 981 x 571 = 7.8645 kg each TWB 2 1.10 x 1016 x 598 = 5.212 kg each	
02-Feb-01	B08							
						APPV'D. BY:		
							ENGINEERS	
							DATE	

8.3 Process Planning Sheets - AVC 31124 Support Header Rear RH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 31124				PART NAME:	Support Header Rear RH
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION
10	SQ Shr					
20	Draw Die	1600 x 1800	1	1000 ton	192,300.00	Run 2 out attached 1LH & 1RH
30	Trim, Prc & Sep Die	1600 x 1800	1	1000 ton	173,000.00	Run 2 out attached 1LH & 1RH
40	Flange & Restrike Die	1600 x 1800	1	1000 ton	181,000.00	Run 2 out attached 1LH & 1RH
50	Checking Fixture				24,000.00	
60						
70						
80				Total	\$570,300.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.450 pcs per hour
ENGINEERING LEVELS						.70 300 MPa
DATE	LEVEL	DETAIL			MAT. SPECS:	
08-Jan-01	E00				APPROX. BLANK SIZE:	.70 x 630 x 830 = 2 pcs Approx Gross Weight = 2.874 Kg = 1.437 Kg Ea
					APPV'D. BY:	Notes
						Tool cost and Blank Size revised
						DATE

8.3 Process Planning Sheets - AVC 31125 Support Header Rear LH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 31125				PART NAME:	Support Header Rear LH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION	
10	SQ Shr						
20	Draw Die	1600 x 1800	1	1000 ton		Run 2 out attached 1LH & 1RH Tooling to produce AVC31124 produces LH & RH	
30	Trim, Prc & Sep Die	1600 x 1800	1	1000 ton		Run 2 out attached 1LH & 1RH Tooling to produce AVC31124 produces LH & RH	
40	Flange & Restrike Die	1600 x 1800	1	1000 ton		Run 2 out attached 1LH & 1RH Tooling to produce AVC31124 produces LH & RH	
50	Checking Fixture				24,000.00		
60							
70							
80				Total	\$24,000.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.450 pcs per hour	
ENGINEERING LEVELS						.70 300 MPa	
DATE	LEVEL	DETAIL			MAT. SPECS:		
08-Jan-01	E00				APPROX. BLANK SIZE:	.70 x 630 x 830 = 2 pcs Approx Gross Weight = 2.874 Kg = 1.437 Kg Ea	
					APPV'D. BY:	Notes	DATE
						Tool cost and Blank Size revised	

8.3 Process Planning Sheets - AVC 31126 Header Rear

Mercia, Ltd.  Process Planning Sheets

PART NO.		ULSAB-AVC 31126			PART NAME:		Header Rear	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION		
10	Sq Shr		1			400 Ton Blanking Press		
20	Draw Die	1000 x 2000	1	Transfer	165,600.00	Transfer Press		
30	Trim & Prc Die	1000 x 2000	1	Transfer	138,000.00	Transfer Press		
40	Flange & Restrike	1000 x 2000	1	Transfer	142,500.00	Transfer Press		
50	Checking Fixture				21,500.00			
60								
70								
80				Total	\$467,600.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.1000 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC		
ENGINEERING LEVELS								
DATE	LEVEL	DETAIL				MAT. SPECS:	.70 300 MPa	
03-Jan-01	E00					APPROX. BLANK SIZE:	.70 x 1264 x 368 = 1 pc Approx Gross Weight = 2.557 Kg Ea	
						APPV'D. BY:	ENGINEERS	DATE

8.3 Process Planning Sheets - AVC 31127 Roof Panel



Mercia, Ltd.



Process Planning Sheets

PART NO.	ULSAB-AVC 31127				PART NAME:	Roof Panel
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION
10	Sq Shr					
20	Draw Die	2300 x 2800	1	1600 ton	388,000.00	Single out Traditional Stamping
30	Trim Die	2300 x 2800	1	1600 ton	298,000.00	Single out Traditional Stamping
40	Flange & Restrike Di	2200 x 3000	1	1600 ton	348,000.00	Single out Traditional Stamping
50	Checking Fixture				70,000.00	
60						
70						
80				Total	\$1,104,000.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.350 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC
ENGINEERING LEVELS						
DATE	LEVEL	DETAIL			MAT. SPECS:	.65 300 MPa
06-Jan-01	D00				APPROX. BLANK SIZE:	.65 x 1915 x 1326 = 1 pc Approx Gross weight = 12.94 Kg Ea
					APPV'D. BY:	Notes
						Revision Change Form Change
						DATE

8.3 Process Planning Sheets - AVC 31156 Package Tray Upper

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 31156				PART NAME:	Package Tray Upper	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION	
10	SQ Shr						
20	Draw Die	1800 x 2500		1600 ton	248,000.00		
30	Trim, Prc & Sep Die	1800 x 2500		1600 ton	198,000.00		
40	Flange & Restrike Die	1800 x 2500		1600 ton	228,000.00		
50	Checking Fixture				34,000.00		
60							
70							
80				Total	\$708,000.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.350 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC	
ENGINEERING LEVELS						.60 280 MPa	
DATE	LEVEL	DETAIL			MAT. SPECS:		
08-Jan-01	C02				APPROX. BLANK SIZE:	.60 x 1561x 762 = 1 pcs Approx Gross Weight = 5.56 Kg Ea	
					APPV'D. BY:	Notes	DATE
						Tool cost and Blank Size revised	

8.3 Process Planning Sheets - AVC 31160 Support Package Tray Lower RH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 31160				PART NAME:	Support Package Tray Lower RH
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION
10	Blank Dev	1576 x 1400	1	500 ton	65,000.00	2 out Attached
20	Form Die	1576 x 1400	1	500 ton	131,000.00	2 out Attached
30	Trim & Prc Die	1576 x 1400	1	500 ton	97,000.00	2 out Attached
40	Flange Die	1576 x 1400	1	500 ton	105,000.00	2 out untached
50	Flange Die	1576 x 1400	1	500 ton	118,000.00	
60	Checking Fixture				14,000.00	
70						
80				Total	\$530,000.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.500 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC
ENGINEERING LEVELS						1.2 300 MPa
DATE	LEVEL	DETAIL			MAT. SPECS:	
03-Jan-01	C01				APPROX. BLANK SIZE:	1.2 x 703 x 388 = 1 Pc Approx. Gross Weight = 2.5017 Kg Ea
					APPV'D. BY:	Notes
						DATE

8.3 Process Planning Sheets - AVC 31161 Support Package Tray Lower LH

Mercia, Ltd.  Process Planning Sheets

PART NO.		ULSAB-AVC 31161			PART NAME:		Support Package Tray Lower LH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION		
10	Blank Dev	1576 x 1400	1	500 ton		2 out Attached Tooling Used to produce AVC 31160 produces LH & RH		
20	Form Die	1576 x 1400	1	500 ton		2 out Attached Tooling Used to produce AVC 31160 produces LH & RH		
30	Trim & Prc Die	1576 x 1400	1	500 ton		2 out Attached Tooling Used to produce AVC 31160 produces LH & RH		
40	Flange Die	1576 x 1400	1	500 ton		2 out unttached Tooling Used to produce AVC 31160 produces LH & RH		
50	Flange Die	1576 x 1400	1	500 ton				
60	Checking Fixture				14,000.00			
70								
80				Total	\$14,000.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.500 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC		
ENGINEERING LEVELS								
DATE	LEVEL	DETAIL				MAT. SPECS:	1.2 300 MPa	
03-Jan-01	C01					APPROX. BLANK SIZE:	1.2 x 703 x 388 = 1 Pc Approx. Gross Weight = 2.5017 Kg Ea	
						APPV'D. BY:	Notes	DATE

8.3 Process Planning Sheets - AVC 31162 Rocker Inner RH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 31162				PART NAME:		Rocker Inner RH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION		
10	SQ Shr		1			1000 Ton Blanking Press		
20	Draw Die	2000 x 2800	1	1000 ton	195,000.00	2 out unattached 1 LH & 1 RH		
30	Trim & Prc Die	2000 x 2800	1	1000 ton	140,000.00	2 out unattached 1 LH & 1 RH		
40	Flange & Restrike Di	2000 x 2800	1	1000 ton	180,000.00	2 out unattached 1 LH & 1 RH		
50	Checking Fixture				20,000.00			
60								
70								
80				Total	\$535,000.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.450 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC		
ENGINEERING LEVELS						MAT. SPECS:	TWB 1 1.5 700 MPa TWB 2 0.70 700 MPa	
DATE	LEVEL	DETAIL		APPROX. BLANK SIZE:		TWB1 x 1.5 x 537 x 596 = 3.770 Kg TWB 2 .7 x 1482 x 596 = 4.822 kg each		
11-Apr-01	A12							
					APPV'D. BY:	ENGINEERS	DATE	

8.3 Process Planning Sheets - AVC 31163 Rocker Inner LH

Mercia, Ltd.



Process Planning Sheets

PART NO.		ULSAB-AVC 31163			PART NAME:		Rocker Inner LH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION		
10	SQ Shr		1			1000 Ton Blanking Press		
20	Draw Die	2000 x 2800	1	1000 ton		2 out unattached 1 LH & 1 RH Tooling to produce AVC31162 produces LH & RH		
30	Trim & Prc Die	2000 x 2800	1	1000 ton		2 out unattached 1 LH & 1 RH Tooling to produce AVC 31162 produces LH & RH		
40	Flange & Restrike Die	2000 x 2800	1	1000 ton		2 out unattached 1 LH & 1 RH Tooling to produce AVC 31162 produces LH & RH		
50	Checking Fixture				20,000.00			
60								
70								
80				Total	\$20,000.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.450 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC		
ENGINEERING LEVELS						TWB 1 1.5 700 MPa TWB 2 0.70 700 MPa		
DATE	LEVEL	DETAIL		MAT. SPECS:				
11-Apr-01	A12			APPROX. BLANK SIZE:		TWB1 x 1.5 x 537 x 596 = 3.770 Kg TWB 2 .7 x 1482 x 596 = 4.822 kg each		
				APPV'D. BY:	ENGINEERS		DATE	

8.3 Process Planning Sheets - AVC 31170 Body Side Outer RH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 31170				PART NAME:		Bodyside Outer RH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION		
10	Blank Die	2200 x 4100	1	1600 Ton	240,000.00			
20	Draw Die	2600 x 4500	1	1600 Ton	465,500.00	Run Single 1 Out RH		
30	Trim Prc Die	2600 x 4500	1	1600 Ton	390,000.00	Run Single 1 Out RH		
40	Cam Trim Die	2600 x 4500	1	1600 Ton	378,000.00	Run Single 1 Out RH		
50	Flange & Restrike Die	2600 x 4500	1	1600 Ton	420,000.00	Run Single 1 Out RH		
60	Cam Flange & Cam P	2600 x 4500	1	1600 Ton	309,000.00	Run Single 1 Out RH		
70	Checking Fixture				87,000.00			
80				Total	\$2,289,500.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.350 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC		
ENGINEERING LEVELS						MAT. SPECS:	TWB1 1.5 700 MPa TWB2 .7 260 MPa TWB3 1.8 700 MPa TWB4 1.2 700 MPa TWB5 .7 260 MPa	
DATE	LEVEL	DETAIL		APPROX. BLANK SIZE:		TWB1 1.5 x 568 x 1200 = 7.97Kg TWB2 0.7 x 466 x 1219 = 3.10Kg TWB3 1.8 x 1176 x 1500		
10-Apr-01	B05					Kg TWB4 1.2 x 935 x 699 =6.117Kg TWB5 .7 x 1998 x 1238 =		
				APPV'D. BY:		Notes	DATE	

8.3 Process Planning Sheets - AVC 31171 Body Side Outer LH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 31171				PART NAME:		Bodyside Outer LH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION		
10	Blank Die	2200 x 4100	1	1600 Ton	240,000.00			
20	Draw Die	2600 x 4500	1	1600 Ton	465,500.00	Run Single 1 Out RH		
30	Trim Prc Die	2600 x 4500	1	1600 Ton	390,000.00	Run Single 1 Out RH		
40	Cam Trim Die	2600 x 4500	1	1600 Ton	378,000.00	Run Single 1 Out RH		
50	Flange & Restrike Die	2600 x 4500	1	1600 Ton	420,000.00	Run Single 1 Out RH		
60	Cam Flange & Cam P	2600 x 4500	1	1600 Ton	309,000.00	Run Single 1 Out RH		
70	Checking Fixture				87,000.00			
80				Total	\$2,289,500.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.350 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC		
ENGINEERING LEVELS						MAT. SPECS:	TWB1 1.5 700 MPa TWB2 .7 260 MPa TWB3 1.8 700 MPa TWB4 1.2 700 MPa TWB5 .7 260 MPa	
DATE	LEVEL	DETAIL				APPROX. BLANK SIZE:	TWB1 1.5 x 568 x 1200 = 7.97Kg TWB2 0.7 x 466 x 1219 = 3.10Kg TWB3 1.8 x 1176 x 1500	
10-Apr-01	B05						Kg TWB4 1.2 x 935 x 699 =6.117Kg TWB5 .7 x 1998 x 1238 =	
						APPV'D. BY:	Notes	DATE

8.3 Process Planning Sheets - AVC 31172 Bodyside Inner Rear RH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 31172				PART NAME:		Bodyside Inner Rear RH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION		
10	Sq Shr							
20	Draw Die	2300 x 2500	1	1600 ton	261,600.00			
30	Trim & Prc Die	2300 x 2500	1	1600 ton	227,200.00			
40	Flange & Restrike Die	2300 x 2500	1	1600 ton	232,000.00			
50	Prc Die	2100 x 2200	1	1600 ton	196,400.00			
60	Checking Fixture				48,000.00			
70								
80				Total	\$965,200.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.350 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC		
ENGINEERING LEVELS								
DATE	LEVEL	DETAIL		MAT. SPECS:		.70 300 MPa		
08-Mar-01	B03			APPROX. BLANK SIZE:		.70 x 1504 x 1347 = 1 pcs Approx Gross Weight =11.135 Kg Ea		
				APPV'D. BY:		Notes	DATE	
						Rev level Change Cutouts added		

8.3 Process Planning Sheets - AVC 31178 Gutter Deck Lid RH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 31178				PART NAME:	Gutter Deck Lid RH
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION
10	Trap Blank	1350 x 1376	1	500 ton	90,000.00	2 out Attached
20	Draw Die	1550 x 1676	1	500 ton	170,000.00	2 out Attached
30	Trm Prc & Sep	1550 x 1676	1	500 ton	145,000.00	2 out Attached
40	Flange & Restrike	1550 x 1676	1	500 ton	164,000.00	2 out untached
50	Checking Fixture				20,000.00	
60						
70						
80				Total	\$589,000.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.500 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC
ENGINEERING LEVELS						
DATE	LEVEL	DETAIL			MAT. SPECS:	.7 260 MPa
04-Jan-01	B01				APPROX. BLANK SIZE:	.70 x 676 x 554(350) =2 Pc Approx Gross Weigt =1.672 Kg/2 out .863 Kg Ea
					APPV'D. BY:	Notes DATE

8.3 Process Planning Sheets - AVC 31173 Bodyside Inner Rear LH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 31173				PART NAME:	Bodyside Inner Rear LH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION	
10	Sq Shr						
20	Draw Die	2300 x 2500	1	1600 ton	261,600.00		
30	Trim & Prc Die	2300 x 2500	1	1600 ton	227,200.00		
40	Flange & Restrike Die	2300 x 2500	1	1600 ton	232,000.00		
50	Prc Die	2100 x 2200	1	1600 ton	196,400.00		
60	Checking Fixture				48,000.00		
70							
80				Total	\$965,200.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.350 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC	
ENGINEERING LEVELS						.70 300 MPa	
DATE	LEVEL	DETAIL			MAT. SPECS:		
08-Mar-01	B03				APPROX. BLANK SIZE:	.70 x 1504 x 1347 = 1 pcs Approx Gross Weight =11.135 Kg Ea	
					APPV'D. BY:	ENGINEERS	DATE

8.3 Process Planning Sheets - AVC 31179 Gutter Deck Lid LH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 31179				PART NAME:		Gutter Deck Lid LH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION		
10	Trap Blank	1350 x 1376	1	500 ton		2 out Attached Tooling used to produce Ulsab AVC 31178 produces LH & RH		
20	Draw Die	1550 x 1676	1	500 ton		2 out Attached Tooling used to produce Ulsab AVC 31178 produces LH & RH		
30	Trm Prc & Sep	1550 x 1676	1	500 ton		2 out Attached Tooling used to produce Ulsab AVC 31178 produces LH & RH		
40	Flange & Restrike	1550 x 1676	1	500 ton		2 out unttached Tooling used to produce Ulsab AVC 31178 produces LH & RH		
50	Checking Fixture				20,000.00			
60								
70								
80				Total	\$20,000.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.500 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC		
ENGINEERING LEVELS						MAT. SPECS:	.7 260 MPa	
DATE	LEVEL	DETAIL		APPROX. BLANK SIZE:		.70 x 676 x 554(350) =2 Pc Approx Gross Weigt =1.672 Kg/2 out .863 Kg Ea		
04-Jan-01	B01			APPV'D. BY:		Notes	DATE	

8.3 Process Planning Sheets - AVC 31188 Rail Rear Outer Floor Extension RH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 31188				PART NAME:		Rail Rear Outer Floor Extension RH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION		
10	Dev Blank	1275 x 1800	1	800 ton	95,000.00			
20	Form Die	1275 x 1800	1	800 ton	136,500.00	2 Out unattached 1LH & 1RH		
30	Flange Die	1275 x 1800	1	800 ton	128,400.00	2 Out unattached 1LH & 1RH		
40	Prc Die	1000 x 1600	1	800 ton	117,600.00	2 Out unattached 1LH & 1RH		
50	Checking Fixture				14,500.00			
60								
70								
80				Total	\$492,000.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.500 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC		
ENGINEERING LEVELS						MAT. SPECS:	TWB 1 1.1 500 MPa TWB 2 0.60 210 MPa	
DATE	LEVEL	DETAIL		APPROX. BLANK SIZE:		TWB1 x 1.1 x 672 x 225 = 1.306 Kg TWB 2 .60 x 672 x 207 = .651 kg each		
06-Jan-01	B03							

8.3 Process Planning Sheets - AVC 31189 Rail Rear Outer Floor Extension LH

Mercia, Ltd.



Process Planning Sheets

[illegible]

8.3 Process Planning Sheets - AVC 31208 B-Pillar Inner RH

Mercia, Ltd.  Process Planning Sheets

PART NO.		ULSAB-AVC 31208			PART NAME:		B Pillar Inner RH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION		
10	Blank Die	1900 x 2100	1	1600Ton	126,000.00	Common Blank Die		
20	Draw Die	2200 x 2400	1	1600 Ton	265,000.00	Produces 2 outt unattached 1LH 1RH		
30	Trim Die	2200 x 2400	1	1600 Ton	238,000.00	Produces 2 outt unattached 1LH 1RH		
40	Restrike Die	2200 x 2400	1	1600 Ton	252,000.00	Produces 2 outt unattached 1LH 1RH		
50	Cam Prc & Prc Die	2000 x 2200	1	1600 Ton	187,000.00	Produces 2 outt unattached 1LH 1RH		
60	Checking Fixture				34,000.00			
70								
80				Total	\$1,102,000.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.350 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC		
ENGINEERING LEVELS								
DATE	LEVEL	DETAIL				MAT. SPECS:	.7 950 MPa	
11-Apr-01	B01					APPROX. BLANK SIZE:	.7 X 1083 x 581 = 1 pc. Approx. Gross Weight= 3.435 Kg Ea.	
						APPV'D. BY:	ENGINEERS	DATE

8.3 Process Planning Sheets - AVC 31209 B-Pillar Inner LH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 31209				PART NAME:	B Pillar Inner LH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION	
10	Blank Die	1900 x 2100	1	1600Ton		Common Blank Die	
20	Draw Die	2200 x 2400	1	1600 Ton		Produces 2 outt unattached 1LH 1RH Tooling Used to produce AVC31208 produces LH & RH	
30	Trim Die	2200 x 2400	1	1600 Ton		Produces 2 outt unattached 1LH 1RH Tooling Used to produce AVC31208 produces LH & RH	
40	Restrike Die	2200 x 2400	1	1600 Ton		Produces 2 outt unattached 1LH 1RH Tooling Used to produce AVC31208 produces LH & RH	
50	Cam Prc & Prc Die	2000 x 2200	1	1600 Ton		Produces 2 outt unattached 1LH 1RH Tooling Used to produce AVC31208 produces LH & RH	
60	Checking Fixture				34,000.00		
70							
80				Total	\$34,000.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.350 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC	
ENGINEERING LEVELS						.7 950 MPa	
DATE	LEVEL	DETAIL			MAT. SPECS:		
11-Apr-01	B01				APPROX. BLANK SIZE:	.7 X 1083 x 581 = 1 pc. Approx. Gross Weight= 3.435 Kg Ea.	
					APPV'D. BY:	ENGINEERS	DATE

8.3 Process Planning Sheets - AVC 31214 Support Back Panel

Mercia, Ltd.  Process Planning Sheets

PART NO.		ULSAB-AVC 31214			PART NAME:		Support Back Panel	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION		
10	Sq Shr		1			400 Ton Blanking Press		
20	Draw Die	1200 x 2500	1	800 ton	220,400.00			
30	Trim & Prc Die	1200 x 2500	1	800 ton	192,500.00			
40	Flange & Restrike	1200 x 2500	1	800 ton	200,000.00			
50	Checking Fixture				28,000.00			
60								
70								
80				Total	\$640,900.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.500 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC		
ENGINEERING LEVELS								
DATE	LEVEL	DETAIL				MAT. SPECS:	.6 300 MPa	
04-Jan-01	A01					APPROX. BLANK SIZE:	.6 x 1514 x 500 = 1 pc Approx Gross Weight = 3.566 Kg Ea	
						APPV'D. BY:	ENGINEERS	DATE

8.3 Process Planning Sheets - AVC 31222 Reinforcement B-Pillar Lower RH

Mercia, Ltd.  Process Planning Sheets

PART NO.		ULSAB-AVC 31222			PART NAME:		Reinf B Pillar Lower RH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION		
10	Dev Blank Die	1100 x 1700	1	500 ton	85,000.00	Common Blank Die		
20	Form Die	1600 x 1700	1	500 ton	140,000.00	Run Double Unattached LH & RH		
30	Prc & Flange	1600 x 1700	1	500 ton	110,000.00	Run Double Unattached LH & RH		
40	Checking Fixture				14,000.00			
50								
60								
70								
80				Total	\$349,000.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.500 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC		
ENGINEERING LEVELS								
DATE	LEVEL	DETAIL		MAT. SPECS:		1.0 700 MPa		
06-Jan-01	B01			APPROX. BLANK SIZE:		1.0 x 934 x 400 = 1 pc Approx Gross Weight = 2.934 Kg Ea		
				APPV'D. BY:		ENGINEERS		DATE

8.3 Process Planning Sheets - AVC 31223 Reinforcement B-Pillar Lower LH

Mercia, Ltd.  Process Planning Sheets

PART NO.		ULSAB-AVC 31223			PART NAME:		Reinf B Pillar Lower LH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION		
10	Dev Blank Die	1100 x 1700	1	500 ton		Run Double Unattached LH & RH Tooling used to produce AVC 31222 produces LH & RH		
20	Form Die	1600 x 1700	1	500 ton		Run Double Unattached LH & RH Tooling used to produce AVC 31222 produces LH & RH		
30	Prc & Flange	1600 x 1700	1	500 ton		Run Double Unattached LH & RH Tooling used to produce AVC 31222 produces LH & RH		
40	Checking Fixture				14,000.00			
50								
60								
70								
80				Total	\$14,000.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.500 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC		
ENGINEERING LEVELS						MAT. SPECS:	1.0 700 MPa	
DATE	LEVEL	DETAIL				APPROX. BLANK SIZE:	1.0 x 934 x 400 = 1 pc Approx Gross Weight = 2.934 Kg Ea	
06-Jan-01	B01					APPV'D. BY:	ENGINEERS	DATE

8.3 Process Planning Sheets - AVC 31230 Reinforcement Waist B-Pillar Outer RH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 31230				PART NAME:		Reinforcement Waiste B Pillar Outer RH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION		
10	Dev Blank & Prc Die	1100 x 1200	1	800 ton	70,000.00	Common Blank Die		
20	Flange Die	1200 x 1500	1	800 ton	112,000.00	2 out unattached 1 LH & 1 RH		
30	Form & Restrike Die	1200 x1500	1	800 ton	148,000.00	2 out unattached 1 LH & 1 RH		
40	Checking Fixture				8,500.00			
50								
60								
70								
80				Total	\$338,500.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.500 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC		
ENGINEERING LEVELS								
DATE	LEVEL	DETAIL		MAT. SPECS:		.8 700 MPa		
25-Apr-01	A00			APPROX. BLANK SIZE:		.8 X 312 x 200 = 1 pc. Approx. Gross Weight= 0.389 Kg Ea.		
				APPV'D. BY:		ENGINEERS		DATE

8.3 Process Planning Sheets - AVC 31231 Reinforcement Waist B-Pillar Outer LH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 31231				PART NAME:	Reinforcement Waist B Pillar Outer LH
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION
10	Dev Blank & Prc Die	1100 x 1200	1	800 ton		Common Blank Die
20	Flange Die	1200 x 1500	1	800 ton		2 out unattached 1 LH & 1 RH Tooling used to produce AVC 31230 produces LH & RH
30	Form & Restrike Die	1200 x1500	1	800 ton		2 out unattached 1 LH & 1 RH Tooling used to produce AVC 31230 produces LH & RH
40	Checking Fixture				8,500.00	
50						
60						
70						
80				Total	\$8,500.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.500 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC
ENGINEERING LEVELS						
DATE	LEVEL	DETAIL			MAT. SPECS:	.8 700 MPa
25-Apr-01	A00				APPROX. BLANK SIZE:	.8 X 312 x 200 = 1 pc. Approx. Gross Weight= 0.389 Kg Ea.
					APPV'D. BY:	ENGINEERS
						DATE

8.3 Process Planning Sheets - AVC 12020 Inner Front Door RH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 12020				PART NAME:	Inner Front Front Door RH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION	
10	Dev Blank	1600 x 1800	1	1000 ton	106,200.00		
20	Draw Die	1800 x 2100	1	1000 ton	194,000.00	Tooling produces 2 out 1LH & 1RH unattached	
30	Trim Die	1800 x 2100	1	1000 ton	172,400.00	Tooling produces 2 out 1LH & 1RH unattached	
40	lange & Restrike Die	1800 x 2100	1	1000 ton	184,500.00	Tooling produces 2 out 1LH & 1RH unattached	
50	Prc & Cam Prc Die	1800 x 2100	1	1000 ton	160,000.00	Tooling produces 2 out 1LH & 1RH unattached	
60	Checking Fixture				15,500.00		
70							
80				Total	\$832,600.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.450 pcs per hour. NOTE: ALL DIMENSIONS ARE METRIC	
ENGINEERING LEVELS						TWB1 140 MPa TWB2 140 MPa	
DATE	LEVEL	DETAIL			MAT. SPECS:		
10-Apr-01	B03				APPROX. BLANK SIZE:	TWB1 600 x 626 x 1.2 = 3.515 Kg Ea TWB2 600 x 385 x 1.0 = 1.801 Kg Ea 5.3168 Kg/blank	
					APPV'D. BY:	Notes	DATE

8.3 Process Planning Sheets - AVC 12021 Inner Front Door LH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 12021				PART NAME:	Inner Front Front Door LH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION	
10	Dev Blank	1600 x 1800	1	1000 ton			
20	Draw Die	1800 x 2100	1	1000 ton		Tooling produces 2 out 1LH & 1RH unattached Tooling used to produce AVC 12020 produces LH &	
30	Trim Die	1800 x 2100	1	1000 ton		Tooling produces 2 out 1LH & 1RH unattached Tooling used to produce AVC 12020 produces LH &	
40	lange & Restrike Die	1800 x 2100	1	1000 ton		Tooling produces 2 out 1LH & 1RH unattached Tooling used to produce AVC 12020 produces LH &	
50	Prc & Cam Prc Die	1800 x 2100	1	1000 ton		Tooling produces 2 out 1LH & 1RH unattached Tooling used to produce AVC 12020 produces LH &	
60	Checking Fixture				15,500.00		
70							
80				Total	\$15,500.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.450 pcs per hour. NOTE: ALL DIMENSIONS ARE METRIC	
ENGINEERING LEVELS						TWB1 140 MPa TWB2 140 MPa	
DATE	LEVEL	DETAIL			MAT. SPECS:		
10-Apr-01	B03				APPROX. BLANK SIZE:	TWB1 600 x 626 x 1.2 = 3.515 Kg Ea TWB2 600 x 385 x 1.0 = 1.801 Kg Ea 5.3168 Kg/blank	
					APPV'D. BY:	Notes	DATE

8.3 Process Planning Sheets - AVC 12026 Mirror Flag Front Door RH

Mercia, Ltd.  Process Planning Sheets

PART NO.		ULSAB-AVC 12026			PART NAME:		Mirror Flag Front Door RH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION		
10	Blank Die	1200 x 1300	1	500 Ton	102,000.00	2 out Attached 1LH 1RH		
20	Draw Die	1200 x 1500	1	500 Ton	168,400.00	2 out Attached 1LH 1RH		
30	Trim, Prc & part sep D	1200 x 1500	1	500 Ton	138,400.00	2 out Attached 1LH 1RH		
40	ing Restrike & Sep D	1200 x 1500	1	500 Ton	158,000.00	2 out Attached 1LH 1RH		
50	Checking Fixture				8,500.00			
60								
70								
80				Total	\$575,300.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.500 pcs per hour. NOTE: ALL DIMENSIONS ARE METRIC		
ENGINEERING LEVELS								
DATE	LEVEL	DETAIL				MAT. SPECS:	1.0 140 MPa	
04-Apr-01	B03					APPROX. BLANK SIZE:	1.0 x 550 x 470 = 2 pc Approx Gross Weight= 2.061 Kg 1.008 Ea	
						APPV'D. BY:	Notes	DATE

8.3 Process Planning Sheets - AVC 12027 Mirror Flag Front Door LH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 12027				PART NAME:	Mirror Flag Front Door LH
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION
10	Blank Die	1200 x 1300	1	500 Ton		2 out Attached 1LH 1RH Tooling used to produce AVC 12026 produces LH & RH
20	Draw Die	1200 x 1500	1	500 Ton		2 out Attached 1LH 1RH Tooling used to produce AVC 12026 produces LH & RH
30	Trim, Prc & part sep D	1200 x 1500	1	500 Ton		2 out Attached 1LH 1RH Tooling used to produce AVC 12026 produces LH & RH
40	ing Restrike & Sep D	1200 x 1500	1	500 Ton		2 out Attached 1LH 1RH Tooling used to produce AVC 12026 produces LH & RH
50	Checking Fixture				8,500.00	
60						
70						
80				Total	\$8,500.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.500 pcs per hour. NOTE: ALL DIMENSIONS ARE METRIC
ENGINEERING LEVELS						1.0 140 MPa
DATE	LEVEL	DETAIL			MAT. SPECS:	
04-Apr-01	B03				APPROX. BLANK SIZE:	1.0 x 550 x 470 = 2 pc Approx Gross Weight= 2.061 Kg 1.008 Ea
					APPV'D. BY:	Notes
						DATE

8.3 Process Planning Sheets - AVC 12300 Engine Service Lid

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 12300				PART NAME:		Engine Service Lid	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION		
10	Sq Shr							
20	Draw Die	1100 x 1500	1	500 Ton	140,000.00			
30	Trim Die	1100 x 1500	1	500 Ton	122,000.00			
40	Flange Die	1100 x 1500	1	500 Ton	128,000.00			
50	Checking Fixture				10,000.00			
60								
70								
80				Total	\$400,000.00	Manpower requirements = 1 operator to load lead press, 1 operators to unload and rack finished Intermediate operations to run with automation.500 pcs per hour. NOTE: ALL DIMENSIONS ARE METRIC		
ENGINEERING LEVELS						MAT. SPECS:	0.6 350 MPa	
DATE	LEVEL	DETAIL				APPROX. BLANK SIZE:	575 x 325 x 0.6 = 1pc Approx Gross Weight= 0.874 Kg Ea	
20-Feb-01	A00					APPV'D. BY:	Notes	DATE

8.3 Process Planning Sheets - AVC 12600 Inner Hood Panel

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 12600				PART NAME:	Inner Hood Panel	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION	
10	Blank Die	2300 x 2500	1	1000 ton	170,000.00		
20	Draw Die	2500 x 2800	1	1600 Ton	301,000.00		
30	Trim & Pierce Die	2500 x 2800	1	1600 Ton	271,200.00		
40	C/Trim & C/ Prc Die	2500 x 2800	1	1600 Ton	246,000.00		
50	Flange & Restrike Die	2500 x 2800	1	1600 Ton	264,000.00		
60	Prc & Cam Prc Die	2500 x 2800	1	1600 Ton	201,000.00		
70	Checking Fixture				70,000.00		
80				Total	\$1,523,200.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.350 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC	
ENGINEERING LEVELS						.6 mm 210 MPa	
DATE	LEVEL	DETAIL			MAT. SPECS:		
09-Feb-01	B00				APPROX. BLANK SIZE:	.6 x 1800 x 1425 = 1Pc Approx Weight 12.00 Kg	
					APPV'D. BY:	ENGINEERS	DATE

8.3 Process Planning Sheets - AVC 12601 Outer Hood Panel



Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 12601				PART NAME:	Outer Hood Panel	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION	
10	Blank Die	2300 x 2500	1	1000 Ton	160,000.00		
20	Draw Die	2500 x 2800	1	1600 Ton	296,000.00		
30	Trim & Cam Trim Die	2500 x 2800	1	1600 Ton	242,000.00		
40	Flange & Cam Flange	2500 x 2800	1	1600 Ton	262,000.00		
50	Checking Fixture				68,000.00		
60							
70							
80				Total	\$1,028,000.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.350 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC	
ENGINEERING LEVELS						0.6mm 210 MPa	
DATE	LEVEL	DETAIL			MAT. SPECS:		
09-Feb-01	B00				APPROX. BLANK SIZE:	.6 x 1800 x 1425 = 1Pc Approx Weight 12.00 Kg	
					APPV'D. BY:	ENGINEERS	DATE

8.3 Process Planning Sheets - AVC 12602 Fender RH



Mercia, Ltd. 

Process Planning Sheets

PART NO:	ULSAB-AVC 12602				PART NAME:	Fender RH
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION
10	Blank Die	1500 x 2100	1	600 Ton	85,000.00	600 Ton Blanking Press
20	Sheet Hydroform					See Cost Model for Details
30	Trim Prc & Sep	1900 x 2500	1	1000 Ton	238,400.00	Run Attached 2 out LH/RH
40	Flange	1900 2500	1	1000 Ton	175,000.00	Run unattached 2 out LH/RH
50	Cam Flange	1700 x 2200	1	1000 Ton	228,000.00	Run unattached 2 out LH/RH
60	Checking Fixture				28,500.00	
70						
80				Total	\$754,900.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finishe Intermediate operations to run with automation.450 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC
ENGINEERING LEVELS					MAT. SPECS:	.6mm 350 Mpa
DATE	LEVEL	DETAIL			APPROX. BLANK SIZE:	.6 x 950 x1500 = 2 Pcs = 6.32Kg = 3.16Kg Ea
19-Feb-01	B01				APPV'D. BY:	Notes
						DATE

8.3 Process Planning Sheets - AVC 12603 Fender LH



Mercia, Ltd.



Process Planning Sheets

PART NO.		ULSAB-AVC 12603			PART NAME:		Fender LH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION		
10	Blank Die	1500 x 2100	1	600 Ton		600 Ton Blanking Press		
20	Draw Die	1900 x 2500	1	1000 Ton		Run Attached 2 out LH/RH Tooling used to produce AVC12602 produces LH & RH		
30	Trim Prc & Sep	1900 x 2500	1	1000 Ton		Run Attached 2 out LH/RH Tooling used to produce AVC12602 produces LH & RH		
40	Flange & Restrike	1900 2500	1	1000 Ton		Run unattached 2 out LH/RH Tooling used to produce AVC12602 produces LH & RH		
50	Cam Flange	1700 x 2200	1	1000 Ton		Run unattached 2 out LH/RH Tooling used to produce AVC12602 produces LH & RH		
60	Checking Fixture				28,500.00			
70								
80				Total	\$28,500.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.450 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC		
ENGINEERING LEVELS								
DATE	LEVEL	DETAIL				MAT. SPECS:	.7mm 280 MPa	
19-Feb-01	B01					APPROX. BLANK SIZE:	.7 x 950 x1500 = 2 Pcs = 7.37Kg = 3.685Kg Ea	
						APPV'D. BY:	Notes	DATE

8.3 Process Planning Sheets - AVC 22000 Outer Front Door RH



Mercia, Ltd.  Process Planning Sheets

PART NO.		ULSAB-AVC 22000			PART NAME:		Outer Front Door RH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION		
10	Blank Die	1700 x 2000	1	1600 Ton	121,000.00	Single out RH		
20	Draw Die	2000 x 2300	1	1600 Ton	272,000.00	Single out RH		
30	Trim & Prc Die	2000 x 2300	1	1600 Ton	227,500.00	Single out RH		
40	Flange & Restrike Die	2000 x 2300	1	1600 Ton	238,500.00	Single out RH		
50	Flange & Cam Flange	2000 x 2300	1	1600 Ton	197,500.00	Single out RH		
60	Checking Fixture				48,000.00			
70								
80				Total	\$1,104,500.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.350 pcs per hour. NOTE: ALL DIMENSIONS ARE METRIC		
ENGINEERING LEVELS								
DATE	LEVEL	DETAIL				MAT. SPECS:	.6 210 MPa	
08-Apr-01	C04					APPROX. BLANK SIZE:	1596 x 942 x .6 = 1 pc Approx Gross Weight 7.036 Kg Ea	
						APPV'D. BY:	Notes	DATE

8.3 Process Planning Sheets - AVC 22001 Outer Front Door LH



Mercia, Ltd.



Process Planning Sheets

PART NO.	ULSAB-AVC 22001				PART NAME:	Outer Front Door LH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION	
10	Blank Die	1700 x 2000	1	1600 Ton	121,000.00	Single out LH	
20	Draw Die	2000 x 2300	1	1600 Ton	272,000.00	Single out LH	
30	Trim & Prc Die	2000 x 2300	1	1600 Ton	227,500.00	Single out LH	
40	Flange & Restrike Die	2000 x 2300	1	1600 Ton	238,500.00	Single out LH	
50	Flange & Cam Flange	2000 x 2300	1	1600 Ton	197,500.00	Single out LH	
60	Checking Fixture				48,000.00		
70							
80				Total	\$1,104,500.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.350 pcs per hour. NOTE: ALL DIMENSIONS ARE METRIC	
ENGINEERING LEVELS						.6 210 MPa	
DATE	LEVEL	DETAIL			MAT. SPECS:		
08-Apr-01	C04				APPROX. BLANK SIZE:	1596 x 942 x .6 = 1 pc Approx Gross Weight 7.036 Kg Ea	
					APPV'D. BY:	Notes	DATE

8.3 Process Planning Sheets - AVC 22022 Inner Rear Front Door RH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 22022				PART NAME:		Inner Rear Front Door RH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION		
10	Blank Die	1400 x 1600	1	800 ton	102,000.00	2 Out Attached 1 LH & 1RH		
20	Draw Die	1450 x 1800	1	800 ton	180,000.00	2 Out Attached 1 LH & 1RH		
30	im,Prc & Part Sep D	1450 x 1800	1	800 ton	156,000.00	2 Out Attached 1 LH & 1RH		
40	Flng,Rstrk & Sep Die	1450 x 1800	1	800 ton	172,000.00	2 Out Attached 1 LH & 1RH		
50	Prc & Cam Prc Die	1300 x 1600	1	800 ton	160,000.00	2 out Unattached 1 LH & 1RH		
60	Checking Fixture				18,000.00			
70								
80				Total	\$788,000.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.500 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC		
ENGINEERING LEVELS						MAT. SPECS:	0.6 140 MPa	
DATE	LEVEL	DETAIL				APPROX. BLANK SIZE:	0.6 x 825 x 620 = 2 pc. Approx. Gross Weight= 2.39 Kg = 1.196 Kg Ea	
11-Apr-01	B02					APPV'D. BY:	ENGINEERS	DATE

8.3 Process Planning Sheets - AVC 22023 Inner Rear Front Door LH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 22023				PART NAME:		Inner Rear Front Door LH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION		
10	Blank Die	1400 x 1600	1	800 ton		2 Out Attached 1 LH & 1RH Tooling used to produce AVC 22022 produces LH & RH		
20	Draw Die	1450 x 1800	1	800 ton		2 Out Attached 1 LH & 1RH Tooling used to produce AVC 22022 produces LH & RH		
30	im,Prc & Part Sep D	1450 x 1800	1	800 ton		2 Out Attached 1 LH & 1RH Tooling used to produce AVC 22022 produces LH & RH		
40	FIng,Rstrk & Sep Die	1450 x 1800	1	800 ton		2 Out Attached 1 LH & 1RH Tooling used to produce AVC 22022 produces LH & RH		
50	Prc & Cam Prc Die	1300 x 1600	1	800 ton		2 out Unattached 1 LH & 1RH Tooling used to produce AVC 22022 produces LH & RH		
60	Checking Fixture				18,000.00			
70								
80				Total	\$18,000.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.500 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC		
ENGINEERING LEVELS						0.6 140 MPa		
DATE	LEVEL	DETAIL				MAT. SPECS:		
11-Apr-01	B02					APPROX. BLANK SIZE:	0.6 x 825 x 620 = 2 pc. Approx. Gross Weight= 2.39 Kg = 1.196 Kg Ea	
						APPV'D. BY:	ENGINEERS	DATE

8.3 Process Planning Sheets - AVC 22050 Reinforcement Latch Front Door RH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 22050				PART NAME:	Reinforcement Latch Front Door RH
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION
10	Progressive Die	800 x 1300	1	350 Ton	72,000.00	6 station progressive die 2 out
20	Checking Fixture				3,500.00	
30						
40						
50						
60						
70						
80				Total	\$75,500.00	Manpower requirements = 1 operator to load lead press, 1 operators to unload and rack finished Intermediate operations to run with automation.1000 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC
ENGINEERING LEVELS						1.2 140 MPa
DATE	LEVEL	DETAIL			MAT. SPECS:	
20-Apr-01	A00				APPROX. BLANK SIZE:	1.2 x 125 x 200 = 1 pc. Approx. Gross Weight= .1176 Kg Ea.
					APPV'D. BY:	ENGINEERS
						DATE

8.3 Process Planning Sheets - AVC 22051 Reinforcement Latch Front Door LH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 22051				PART NAME:	Reinforcement Latch Front Door LH
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION
10	Progressive Die	800 x 1300	1	350 Ton		6 station progressive die 2 out Tooling used to produce AVC 22050 produces LH & RH
20	Checking Fixture				3,500.00	
30						
40						
50						
60						
70						
80				Total	\$3,500.00	Manpower requirements = 1 operator to load lead press, 1 operators to unload and rack finished Intermediate operations to run with automation.1000 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC
ENGINEERING LEVELS						1.2 140 MPa
DATE	LEVEL	DETAIL			MAT. SPECS:	
20-Apr-01	A00				APPROX. BLANK SIZE:	1.2 x 125 x 200 = 1 pc. Approx. Gross Weight= .1176 Kg Ea.
					APPV'D. BY:	ENGINEERS
						DATE

8.3 Process Planning Sheets - AVC 22301 Fuel Filler Lid

Mercia, Ltd.



Process Planning Sheets

PART NO.	ULSAB-AVC 22301				PART NAME:		Fuel Filler Lid	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION		
10	Progressive Die	600 x 1500	1	350 Ton	160,000.00	7 station progressive die 2 out Tooling		
20	Checking Fixture				7,500.00			
30								
40								
50								
60								
70								
80				Total	\$167,500.00	Manpower requirements = 1 operator to load lead press, 1 operators to unload and rack finished Intermediate operations to run with automation.1000 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC		
ENGINEERING LEVELS								
DATE	LEVEL	DETAIL		MAT. SPECS:			.60 350 MPa	
20-Feb-01	A00			APPROX. BLANK SIZE:			.60 x 200 x 200 = 1 pc. Approx. Gross Weight= .1872 Kg Ea.	
				APPV'D. BY:			ENGINEERS	DATE

8.3 Process Planning Sheets - AVC 22400 Liftgate Inner Panel

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 22400				PART NAME:	Liftgate Inner Panel	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION	
10	Blank Die	1500 x 2100	1	1000 Ton	190,000.00		
20	Draw Die	1900 x 2300	1	1000 Ton	356,000.00		
30	Trim & Prc Die	1900 x 2300	1	1000 Ton	280,000.00		
40	Trim & Prc Die	1900 x 2300	1	1000 Ton	270,000.00		
50	Flange & Restrike Die	1900 x 2300	1	1000 Ton	328,000.00		
60	Pierce & Cam Pierce	1900 x 2300	1	1000 Ton	240,000.00		
70	Checking Fixture				64,000.00		
80				Total	\$1,728,000.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.450 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC	
ENGINEERING LEVELS						0.6mm 210 MPa	
DATE	LEVEL	DETAIL			MAT. SPECS:		
14-Feb-01	B03				APPROX. BLANK SIZE:	.6 x 1538 x 1321 = 1Pc Approx Weight 9.508 Kg	
					APPV'D. BY:	Notes	DATE
						Form Change Rev Change	

8.3 Process Planning Sheets - AVC 22401 Liftgate Outer Panel



Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 22401				PART NAME:	Liftgate Outer Panel
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION
10	Blank Die	1500 x 2100	1	1000 Ton	180,000.00	
20	Draw Die	1900 x 2300	1	1000 Ton	321,200.00	
30	Trim & Prc Die	1900 x 2300	1	1000 Ton	285,000.00	
40	Flange & Restrike	1900 x 2300	1	1000 Ton	304,000.00	
50	Checking Fixture				58,000.00	
60						
70						
80				Total	\$1,148,200.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.450 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC
ENGINEERING LEVELS						
DATE	LEVEL	DETAIL			MAT. SPECS:	0.6mm 210 MPa
07-Feb-01	B03				APPROX. BLANK SIZE:	.6 x 1538 x 1321 = 1Pc Approx Weight 9.508 Kg
					APPV'D. BY:	ENGINEERS
						DATE

8.3 Process Planning Sheets - AVC 22700 Applique Roof Side Rail RH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 22700				PART NAME:	Applique Roof Side Rail RH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION	
10	Blank Die	1700 x 3500	1	A	145,000.00		
20	Draw Die	2100 x 3800	1	A	300,000.00	Run 2 out unattached 1LH & 1RH	
30	Trim Die	2100 x 3800	1	A	283,000.00	Run 2 out unattached 1LH & 1RH	
40	Flange Die	2100 x 3800	1	A	268,000.00	Run 2 out unattached 1LH & 1RH	
50	Checking Fixture				38,000.00		
60							
70							
80				Total	\$1,034,000.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.350 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC	
ENGINEERING LEVELS							
DATE	LEVEL	DETAIL			MAT. SPECS:		
19-Feb-01	A02				APPROX. BLANK SIZE:	.5 280 MPa	
					APPV'D. BY:	.5 x 2800 x 300 = 1Pc Approx Weight 3.276 Kg	
						ENGINEERS	DATE

8.3 Process Planning Sheets - AVC 22701 Applique Roof Side Rail RH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 22701				PART NAME:	Applique Roof Side Rail RH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION	
10	Blank Die	1700 x 3500	1	A	145,000.00		
20	Draw Die	2100 x 3800	1	A	300,000.00	Run 2 out unattached 1LH & 1RH	
30	Trim Die	2100 x 3800	1	A	283,000.00	Run 2 out unattached 1LH & 1RH	
40	Flange Die	2100 x 3800	1	A	268,000.00	Run 2 out unattached 1LH & 1RH	
50	Checking Fixture				38,000.00		
60							
70							
80				Total	\$1,034,000.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.350 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC	
ENGINEERING LEVELS						.5 280 MPa	
DATE	LEVEL	DETAIL			MAT. SPECS:		
19-Feb-01	A02				APPROX. BLANK SIZE:	.5 x 2800 x 300 = 1Pc Approx Weight 3.276 Kg	
					APPV'D. BY:	ENGINEERS	DATE

8.3 Process Planning Sheets - AVC 32028 Outer Front Door RH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 32028				PART NAME:		Outer Front Door RH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION		
10	Blank Die	1700 x 2000	1	1600 Ton	121,000.00	Single out RH		
20	Draw Die	2000 x 2300	1	1600 Ton	249,200.00	Single out RH		
30	Trim & Prc Die	2000 x 2300	1	1600 Ton	227,500.00	Single out RH		
40	Flange & Restrike Die	2000 x 2300	1	1600 Ton	238,500.00	Single out RH		
50	Flange & Cam Flange	2000 x 2300	1	1600 Ton	197,500.00	Single out RH		
60	Checking Fixture				48,000.00			
70								
80				Total	\$1,081,700.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.350 pcs per hour. NOTE: ALL DIMENSIONS ARE METRIC		
ENGINEERING LEVELS						MAT. SPECS:	.6 210 MPa	
DATE	LEVEL	DETAIL				APPROX. BLANK SIZE:	1335 x 935 x .6 = 1 pc Approx Gross Weight 5.841 Kg Ea	
08-Apr-01	B05					APPV'D. BY:	Notes	DATE

8.3 Process Planning Sheets - AVC 32029 Outer Front Door LH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 32029				PART NAME:		Outer Front Door LH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION		
10	Blank Die	1700 x 2000	1	1600 Ton	121,000.00	Single out RH		
20	Draw Die	2000 x 2300	1	1600 Ton	249,200.00	Single out RH		
30	Trim & Prc Die	2000 x 2300	1	1600 Ton	227,500.00	Single out RH		
40	Flange & Restrike Die	2000 x 2300	1	1600 Ton	238,500.00	Single out RH		
50	Flange & Cam Flange	2000 x 2300	1	1600 Ton	197,500.00	Single out RH		
60	Checking Fixture				48,000.00			
70								
80				Total	\$1,081,700.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.350 pcs per hour. NOTE: ALL DIMENSIONS ARE METRIC		
ENGINEERING LEVELS						MAT. SPECS:	.6 210 MPa	
DATE	LEVEL	DETAIL		APPROX. BLANK SIZE:		1335 x 935 x .6 = 1 pc Approx Gross Weight 5.841 Kg Ea		
08-Apr-01	B05			APPV'D. BY:		Notes	DATE	

8.3 Process Planning Sheets - AVC 32030 Inner Rear Front Door RH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 32030				PART NAME:		Inner Rear Front Door RH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION		
10	Blank Die	1400 x 1600	1	800 ton	102,000.00	2 Out Attached 1 LH & 1RH		
20	Draw Die	1450 x 1800	1	800 ton	180,000.00	2 Out Attached 1 LH & 1RH		
30	im,Prc & Part Sep D	1450 x 1800	1	800 ton	156,000.00	2 Out Attached 1 LH & 1RH		
40	Flng,Rstrk & Sep Die	1450 x 1800	1	800 ton	172,000.00	2 Out Attached 1 LH & 1RH		
50	Cam Pierce	1450 x 1800	1	800 ton	148,000.00			
60	Checking Fixture				16,000.00			
70								
80				Total	\$774,000.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.500 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC		
ENGINEERING LEVELS								
DATE	LEVEL	DETAIL		MAT. SPECS:		0.6 140 MPa		
10-Apr-01	B02			APPROX. BLANK SIZE:		0.6 x 825 x 620 = 2 pc. Approx. Gross Weight= 2.39 Kg = 1.196 Kg Ea		
				APPV'D. BY:		ENGINEERS	DATE	

8.3 Process Planning Sheets - AVC 32031 Inner Rear Front Door LH

Mercia, Ltd.  Process Planning Sheets

PART NO.		ULSAB-AVC 32031			PART NAME:		Inner Rear Front Door LH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION		
10	Blank Die	1400 x 1600	1	800 ton		2 Out Attached 1 LH & 1RH Tooling used to produce AVC 32030 produces LH & RH		
20	Draw Die	1450 x 1800	1	800 ton		2 Out Attached 1 LH & 1RH Tooling used to produce AVC 32030 produces LH & RH		
30	im,Prc & Part Sep D	1450 x 1800	1	800 ton		2 Out Attached 1 LH & 1RH Tooling used to produce AVC 32030 produces LH & RH		
40	FIng,Rstrk & Sep Die	1450 x 1800	1	800 ton		2 Out Attached 1 LH & 1RH Tooling used to produce AVC 32030 produces LH & RH		
50	Cam Pierce	1450 x 1800	1	800 ton		2 Out Unattached 1 LH & 1 RHTooling used to produce AVC 32030 produces LH & RH		
60	Checking Fixture				16,000.00			
70								
80				Total	\$16,000.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.500 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC		
ENGINEERING LEVELS						0.6 140 MPa		
DATE	LEVEL	DETAIL				MAT. SPECS:	0.6 x 825 x 620 = 2 pc. Approx. Gross Weight= 2.39 Kg = 1.196 Kg Ea	
10-Apr-01	B02					APPROX. BLANK SIZE:		
						APPV'D. BY:	ENGINEERS	DATE

8.3 Process Planning Sheets - AVC 32032 Outer Rear Door RH



Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 32032				PART NAME:	Outer Rear Door RH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION	
10	Blank Die	1700 x 2000	1	1600 Ton	121,000.00	Single out RH	
20	Draw Die	2000 x 2300	1	1600 Ton	249,200.00	Single out RH	
30	Trim & Prc Die	2000 x 2300	1	1600 Ton	227,500.00	Single out RH	
40	Flange & Restrike Die	2000 x 2300	1	1600 Ton	238,500.00	Single out RH	
50	Flange & Cam Flange	2000 x 2300	1	1600 Ton	197,500.00	Single out RH	
60	Checking Fixture				48,000.00		
70							
80				Total	\$1,081,700.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.350 pcs per hour. NOTE: ALL DIMENSIONS ARE METRIC	
ENGINEERING LEVELS						.6 210 MPa	
DATE	LEVEL	DETAIL			MAT. SPECS:		
05-Apr-01	B02				APPROX. BLANK SIZE:	1314 x 928 x .6 = 1 pc Approx Gross Weight 5.706 Kg Ea	
					APPV'D. BY:	Notes	DATE

8.3 Process Planning Sheets - AVC 32033 Outer Rear Door LH



Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 32033				PART NAME:	Outer Rear Door LH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION	
10	Blank Die	1700 x 2000	1	1600 Ton	121,000.00	Single out LH	
20	Draw Die	2000 x 2300	1	1600 Ton	249,200.00	Single out LH	
30	Trim & Prc Die	2000 x 2300	1	1600 Ton	227,500.00	Single out LH	
40	Flange & Restrike Die	2000 x 2300	1	1600 Ton	238,500.00	Single out LH	
50	Flange & Cam Flange	2000 x 2300	1	1600 Ton	197,500.00	Single out LH	
60	Checking Fixture				48,000.00		
70							
80				Total	\$1,081,700.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.350 pcs per hour. NOTE: ALL DIMENSIONS ARE METRIC	
ENGINEERING LEVELS						.6 210 MPa	
DATE	LEVEL	DETAIL			MAT. SPECS:		
05-Apr-01	B02				APPROX. BLANK SIZE:	1314 x 928 x .6 = 1 pc Approx Gross Weight 5.706 Kg Ea	
					APPV'D. BY:	Notes	DATE

8.3 Process Planning Sheets - AVC 32034 Inner Front Door RH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 32034				PART NAME:	Inner Front Rear Door RH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION	
10	Dev Blank	1600 x 1800	1	1000 ton	102,400.00		
20	Draw Die	1800 x 2100	1	1000 ton	188,400.00	Tooling produces 2 out 1LH & 1RH unattached	
30	Trim Die	1800 x 2100	1	1000 ton	169,800.00	Tooling produces 2 out 1LH & 1RH unattached	
40	lange & Restrike Die	1800 x 2100	1	1000 ton	180,000.00	Tooling produces 2 out 1LH & 1RH unattached	
50	Prc & Cam Prc Die	1800 x 2100	1	1000 ton	140,000.00	Tooling produces 2 out 1LH & 1RH unattached	
60	Checking Fixture				16,000.00		
70							
80				Total	\$796,600.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.450 pcs per hour. NOTE: ALL DIMENSIONS ARE METRIC	
ENGINEERING LEVELS						TWB1 140 MPa TWB2 140 MPa	
DATE	LEVEL	DETAIL			MAT. SPECS:		
12-Apr-01	B02				APPROX. BLANK SIZE:	TWB1 451 x450 x 1.2 = 1.899 Kg Ea TWB2 451x 386 x 1.0 = 1.3578 Kg Ea 3.2568 Kg/blank	
					APPV'D. BY:	Notes	DATE

8.3 Process Planning Sheets - AVC 32035 Inner Front Rear Door LH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 32035				PART NAME:	Inner Front Rear Door LH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION	
10	Dev Blank	1600 x 1800	1	1000 ton			
20	Draw Die	1800 x 2100	1	1000 ton		Tooling produces 2 out 1LH & 1RH unattached tooling used to produce AVC 32034 produces LH &	
30	Trim Die	1800 x 2100	1	1000 ton		Tooling produces 2 out 1LH & 1RH unattached tooling used to produce AVC 32034 produces LH &	
40	lange & Restrike Di	1800 x 2100	1	1000 ton		Tooling produces 2 out 1LH & 1RH unattached tooling used to produce AVC 32034 produces LH &	
50	Prc & Cam Prc Die	1800 x 2100	1	1000 ton		Tooling produces 2 out 1LH & 1RH unattached tooling used to produce AVC 32034 produces LH &	
60	Checking Fixture				16,000.00		
70							
80				Total	\$16,000.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.450 pcs per hour. NOTE: ALL DIMENSIONS ARE METRIC	
ENGINEERING LEVELS						TWB1 140 MPa TWB2 140 MPa	
DATE	LEVEL	DETAIL			MAT. SPECS:		
12-Apr-01	B02				APPROX. BLANK SIZE:	TWB1 451 x450 x 1.2 = 1.899 Kg Ea TWB2 451x 386 x 1.0 = 1.3578 Kg Ea 3.2568 Kg/blank	
					APPV'D. BY:	Notes	DATE

8.3 Process Planning Sheets - AVC 32038 Inner Rear Door RH



Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 32038				PART NAME:		Inner Rear Rear Door RH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION		
10	Blank Die	1400 x 1600	1	800 ton	102,000.00	2 Out Attached 1 LH & 1RH		
20	Draw Die	1450 x 1800	1	800 ton	192,000.00	2 Out Attached 1 LH & 1RH		
30	im,Prc & Part Sep D	1450 x 1800	1	800 ton	162,000.00	2 Out Attached 1 LH & 1RH		
40	FIng,Rstrk & Sep Die	1450 x 1800	1	800 ton	178,000.00	2 Out Attached 1 LH & 1RH		
50	Cam Pierce	1450 x 1800	1	800 ton	154,200.00			
60	Checking Fixture				18,000.00			
70								
80				Total	\$806,200.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.500 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC		
ENGINEERING LEVELS								
DATE	LEVEL	DETAIL		MAT. SPECS:		0.6 140 MPa		
10-Apr-01	B02			APPROX. BLANK SIZE:		0.6 x 1144 x 626 = 2 pc. Approx. Gross Weight= 3.35 Kg = 1.675 Kg Ea		
				APPV'D. BY:		ENGINEERS	DATE	

8.3 Process Planning Sheets - AVC 32039 Inner Rear Door LH



Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 32039				PART NAME:	Inner Rear Rear Door LH
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION
10	Blank Die	1400 x 1600	1	800 ton		2 Out Attached 1 LH & 1RH Tooling used to produce AVC 32038 produces LH & RH
20	Draw Die	1450 x 1800	1	800 ton		2 Out Attached 1 LH & 1RH Tooling used to produce AVC 32038 produces LH & RH
30	im,Prc & Part Sep D	1450 x 1800	1	800 ton		2 Out Attached 1 LH & 1RH Tooling used to produce AVC 32038 produces LH & RH
40	Fing,Rstrk & Sep Die	1450 x 1800	1	800 ton		2 Out Attached 1 LH & 1RH Tooling used to produce AVC 32038 produces LH & RH
50	Cam Pierce	1450 x 1800	1	800 ton		
60	Checking Fixture				18,000.00	
70						
80				Total	\$18,000.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.500 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC
ENGINEERING LEVELS						
DATE	LEVEL	DETAIL			MAT. SPECS:	0.6 140 MPa
10-Apr-01	B02				APPROX. BLANK SIZE:	0.6 x 1144 x 626 = 2 pc. Approx. Gross Weight= 3.35 Kg = 1.675 Kg Ea
					APPV'D. BY:	ENGINEERS
						DATE

8.3 Process Planning Sheets - AVC 32048 Reinforcement Member Waist Rear Door

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 32048				PART NAME:	Reinf Member Waist RR Door RH
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION
10	Progressive Die		1	350 Ton	140,000.00	6 Station progressive die 2 Out
20	Checking Fixture				5,000.00	
30						
40						
50						
60						
70						
80				Total	\$145,000.00	Manpower requirements = 1 operator to load lead press, 1 operators to unload and rack finished Intermediate operations to run with automation.1000 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC
ENGINEERING LEVELS						1.1 140 MPa
DATE	LEVEL	DETAIL			MAT. SPECS:	
12-Apr-01	B02				APPROX. BLANK SIZE:	1.1 x 185 x 244 = 2 pc. Approx. Gross Weight= 0.1936 Kg Ea.
					APPV'D. BY:	ENGINEERS
						DATE

8.3 Process Planning Sheets - AVC 32049 Reinforcement Member Waist Rear Door LH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 32049				PART NAME:	Reinf Member Waist RR Door LH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION	
10	Progressive Die		1	350 Ton		6 Station progressive die 2 Out	
20	Checking Fixture				5,000.00		
30							
40							
50							
60							
70							
80				Total	\$5,000.00	Manpower requirements = 1 operator to load lead press, 1 operators to unload and rack finished Intermediate operations to run with automation.1000 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC	
ENGINEERING LEVELS							
DATE	LEVEL	DETAIL			MAT. SPECS:	1.1 140 MPa	
12-Apr-01	B02				APPROX. BLANK SIZE:	1.1 x 185 x 244 = 2 pc. Approx. Gross Weight= 0.1936 Kg Ea.	
					APPV'D. BY:	ENGINEERS	DATE

8.3 Process Planning Sheets - AVC 32052 Reinforcement Latch Front Door RH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 32052				PART NAME:		Reinforcement Latch Front Door RH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION		
10	Progressive Die	800 x 1300	1	350 Ton	72,000.00	6 station progressive die 2 out		
20	Checking Fixture				3,500.00			
30								
40								
50								
60								
70								
80				Total	\$75,500.00	Manpower requirements = 1 operator to load lead press, 1 operators to unload and rack finished Intermediate operations to run with automation.1000 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC		
ENGINEERING LEVELS						MAT. SPECS:	1.2 140 MPa	
DATE	LEVEL	DETAIL		APPROX. BLANK SIZE:		1.2 x 125 x 200 = 1 pc. Approx. Gross Weight= .1176 Kg Ea.		
02-Apr-01	A00			APPV'D. BY:		ENGINEERS	DATE	

8.3 Process Planning Sheets - AVC 32054 Reinforcement Latch Rear Door RH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 32054				PART NAME:		Reinforcement Latch Rear Door RH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION		
10	Progressive Die	800 x 1300	1	350 Ton	72,000.00	6 station progressive die 2 out		
20	Checking Fixture				3,500.00			
30								
40								
50								
60								
70								
80				Total	\$75,500.00	Manpower requirements = 1 operator to load lead press, 1 operators to unload and rack finished Intermediate operations to run with automation.1000 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC		
ENGINEERING LEVELS						MAT. SPECS:	1.2 140 MPa	
DATE	LEVEL	DETAIL		APPROX. BLANK SIZE:		1.2 x 125 x 200 = 1 pc. Approx. Gross Weight= .1176 Kg Ea.		
02-Apr-01	A00			APPV'D. BY:		ENGINEERS	DATE	

8.3 Process Planning Sheets - AVC 32302

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 32302				PART NAME:	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION
10	Progressive Die	600 x 1500	1	350 Ton	160,000.00	7 station progressive die 2 out Tooling
20	Checking Fixture				7,500.00	
30						
40						
50						
60						
70						
80				Total	\$167,500.00	Manpower requirements = 1 operator to load lead press, 1 operators to unload and rack finished Intermediate operations to run with automation.1000 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC
ENGINEERING LEVELS						
DATE	LEVEL	DETAIL			MAT. SPECS:	.60 350 MPa
20-Feb-01	A00				APPROX. BLANK SIZE:	.60 x 200 x 200 = 1 pc. Approx. Gross Weight= .1872 Kg Ea.
					APPV'D. BY:	ENGINEERS
						DATE

8.3 Process Planning Sheets - AVC 32500 Inner Decklid

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 32500				PART NAME:		Inner Decklid	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION		
10	Blank Die	2000 x 2000	1		180,000.00	1000 ton blanking press		
20	Draw Die	2600 x 2600	1	1600 ton	430,000.00			
30	Trim & Prc Die	2600 x 2600	1	1600 ton	309,000.00			
40	Trim & Prc Die	2600 x 2600	1	1600 ton	321,000.00			
50	Flange & Restrike	2600 x 2600	1	1600 ton	381,000.00			
60	Cam Prc Die	2600 x 2600	1	1600 ton	222,600.00			
70	Checking Fixture				65,000.00			
80				Total	\$1,908,600.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.350 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC		
ENGINEERING LEVELS						MAT. SPECS:	.60 210 MPa	
DATE	LEVEL	DETAIL		APPROX. BLANK SIZE:		.06 x 1673 x 1672 = 1 Pc Approx. Gross Weight=13.18 kg Ea.		
03-Feb-01	D00			APPV'D. BY:		ENGINEERS	DATE	

8.3 Process Planning Sheets - AVC 32702 Applique Roof Side Rail RH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 32702				PART NAME:	Applique Roof Side Rail RH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION	
10	Blank Die	1700 x 3500	1	1600 Ton	145,000.00		
20	Draw Die	2100 x 3800	1	1600 Ton	300,000.00	Run 2 out unattached 1LH & 1RH	
30	Trim Die	2100 x 3800	1	1600 Ton	283,000.00	Run 2 out unattached 1LH & 1RH	
40	Flange Die	2100 x 3800	1	36941	268,000.00	Run 2 out unattached 1LH & 1RH	
50	Checking Fixture				38,000.00		
60							
70							
80				Total	\$1,034,000.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.350 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC	
ENGINEERING LEVELS						.5 280 MPa	
DATE	LEVEL	DETAIL			MAT. SPECS:		
06-Feb-01	A02				APPROX. BLANK SIZE:	.5 x 2800 x 300 = 1Pc Approx Weight 3.276 Kg	
					APPV'D. BY:	ENGINEERS	DATE

8.3 Process Planning Sheets - AVC 32703 Applique Roof Side Rail LH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 32703				PART NAME:	Applique Roof Side Rail LH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION	
10	Blank Die	1700 x 3500	1	1600 Ton			
20	Draw Die	2100 x 3800	1	1600 Ton		Run 2 out unattached 1LH & 1RH tooling used to produce ULSAB 32702 produces LH & RH	
30	Trim Die	2100 x 3800	1	1600 Ton		Run 2 out unattached 1LH & 1RH tooling used to produce ULSAB 32702 produces LH & RH	
40	Flange Die	2100 x 3800	1	1600 Ton		Run 2 out unattached 1LH & 1RH tooling used to produce ULSAB 32702 produces LH & RH	
50	Checking Fixture				38,000.00		
60							
70							
80				Total	\$38,000.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.350 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC	
ENGINEERING LEVELS						.5 280 MPa	
DATE	LEVEL	DETAIL			MAT. SPECS:		
06-Feb-01	A02				APPROX. BLANK SIZE:	.5 x 2800 x 1100 = 1Pc Approx Weight 12.012 Kg	
					APPV'D. BY:	ENGINEERS	DATE

8.3 Process Planning Sheets - AVC 11302 Bracket Steering Column Attachment

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 11302				PART NAME:	Brkt Steering Column Attachment	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION	
10	Blank Die	1200 x 1500	1	500 Ton	78,000.00		
20	Draw Die	1200 x 1800	1	500 Ton	136,000.00		
30	Trim & Prc Die	1200 x 1800	1	500 Ton	104,000.00		
40	Flange & Restrike Die	1200 x 1800	1	500 Ton	118,400.00		
50	Cam Pirce Die	1000 x 1500	1	500 Ton	82,500.00		
60	Checking Fixture				13,000.00		
70							
80				Total	\$531,900.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.500 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC	
ENGINEERING LEVELS						2.5 210 MPa	
DATE	LEVEL	DETAIL			MAT. SPECS:		
22-Mar-01	A02				APPROX. BLANK SIZE:	836 x 500 x 2.5 = 1 pc Approx. Gross Weight = 8.151 Kg Ea.	
					APPV'D. BY:	ENGINEERS	DATE

8.3 Process Planning Sheets - AVC 11304 Bracket Member Instrument Panel Support RH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 11304				PART NAME:	Brkt Member Ins Pnl Support RH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION	
10	Progressive Die	1100 x 2000	1	350 Ton	250,000.00	10 station progressive die 2 out	
20	Checking Fixture				12,000.00		
30							
40							
50							
60							
70							
80				Total	\$262,000.00	Manpower requirements = 1 operator to load lead press, 1 operators to unload and rack finished Intermediate operations to run with automation.1000 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC	
ENGINEERING LEVELS							
DATE	LEVEL	DETAIL			MAT. SPECS:	2.0 350 MPa	
27-Feb-01	A00				APPROX. BLANK SIZE:	2 x 150 x 300 = 1 pc. Approx. Gross Weight= .702 Kg Ea.	
					APPV'D. BY:	ENGINEERS	DATE

8.3 Process Planning Sheets - AVC 11305 Bracket Member Instrument Panel Support LH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 11305				PART NAME:	Brkt Member Ins Pnl Support LH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION	
10	Progressive Die	1100 x 2000	1	350 Ton		10 station progressive die 2 out Tooling used to produce AVC 11304 produces LH & RH	
20	Checking Fixture						
30							
40							
50							
60							
70							
80				Total	\$0.00	Manpower requirements = 1 operator to load lead press, 1 operators to unload and rack finished Intermediate operations to run with automation.1000 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC	
ENGINEERING LEVELS							
DATE	LEVEL	DETAIL			MAT. SPECS:	2.0 350 MPa	
27-Feb-01	A00				APPROX. BLANK SIZE:	2 x 150 x 300 = 1 pc. Approx. Gross Weight= .702 Kg Ea.	
					APPV'D. BY:	ENGINEERS	DATE

8.3 Process Planning Sheets - AVC 11307 Plate Cross Member Instrument Panel Attachment

Mercia, Ltd.  Process Planning Sheets

PART NO.		ULSAB-AVC 11307			PART NAME:		Plate Cross Member Instrument Panel Attachment	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION		
10	Progressive Die	600 x 1500	1	350 Ton	94,000.00	8 station progressive die		
20	Checking Fixture				4,500.00			
30								
40								
50								
60								
70								
80				Total	\$98,500.00	Manpower requirements = 1 operator to load lead press, 1 operators to unload and rack finished Intermediate operations to run with automation.1000 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC		
ENGINEERING LEVELS						MAT. SPECS:	2.0 140 MPa	
DATE	LEVEL	DETAIL				APPROX. BLANK SIZE:	2 x 150 x 120 = 1 pc. Approx. Gross Weight= .2808 Kg Ea.	
20-Mar-01	A01					APPV'D. BY:	ENGINEERS	DATE

8.3 Process Planning Sheets - AVC 11013 Bumper Beam Front Outer

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 11013				PART NAME:		Bumper Beam Front Outer	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION		
10	Blank & Pierce Die	1100 x 1800	1	Transfer	105,000.00	Transfer Press Single Out		
20	Flange Die	1200 x 2000	1	Transfer	175,000.00	Transfer Press Single Out		
30	Finish Form Die	1200 x 2000	1	Transfer	141,500.00	Transfer Press Single Out		
40	Checking Fixture				28,000.00	Transfer Press Single Out		
50								
60								
70								
80				Total	\$449,500.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.1000 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC		
ENGINEERING LEVELS						MAT. SPECS:	1.0 1250 MPa	
DATE	LEVEL	DETAIL		APPROX. BLANK SIZE:		1.0 x 1150 x 400 = 1 pc Approx Gross Weight = 3.612 Kg Ea		
25-Jan-01	F01			APPV'D. BY:		Notes	DATE	

8.3 Process Planning Sheets - AVC 21047 Bumper Beam Rear Inner

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 21047				PART NAME:	Bumper Beam Rear Inner	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION	
10	Roll Form				120,000.00	Roll Form	
20	Checking Fixture				14,000.00		
30							
40							
50							
60							
70							
80				Total	\$134,000.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.800 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC	
ENGINEERING LEVELS							
DATE	LEVEL	DETAIL			MAT. SPECS:	.8 1250 MPa	
24-Jan-01	F00				APPROX. BLANK SIZE:	.8 x 1216 x 186 = 1 pc Approx Gross Weight = 1.4113 Kg Ea	
					APPV'D. BY:	Notes	DATE

8.3 Process Planning Sheets - AVC 21048 Bumper Beam Rear Outer

Mercia, Ltd.  Process Planning Sheets

PART NO.		ULSAB-AVC 21048			PART NAME:		Bumper Beam Rear Outer	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION		
10	Blank & Pierce Die	1100 x 1950	1	Transfer	85,000.00	Transfer Press Single Out		
20	Flange Die	1100 x 1950	1	Transfer	180,000.00	Transfer Press Single Out		
30	Finish Form Die	1100 x 1950	1	Transfer	140,000.00	Transfer Press Single Out		
40	Checking Fixture				24,000.00	Transfer Press Single Out		
50								
60								
70								
80				Total	\$429,000.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.1000 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC		
ENGINEERING LEVELS						MAT. SPECS:	.8 1250 MPa	
DATE	LEVEL	DETAIL				APPROX. BLANK SIZE:	.8 x 1250 x 397 = 1 pc Approx Gross Weight = 3.117 Kg Ea	
24-Jan-01	G00					APPV'D. BY:	Notes	DATE

8.3 Process Planning Sheets - AVC 31047 Bumper Beam Rear Inner

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 31047				PART NAME:	Bumper Beam Rear Inner	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION	
10	Roll Form				120,000.00	Roll Form	
20	Checking Fixture				14,000.00		
30							
40							
50							
60							
70							
80				Total	\$134,000.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.800 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC	
ENGINEERING LEVELS						MAT. SPECS:	.8 1250 MPa
DATE	LEVEL	DETAIL				APPROX. BLANK SIZE:	.8 x 1216 x 186 = 1 pc Approx Gross Weight = 1.4113 Kg Ea
24-Jan-01	F00					APPV'D. BY:	Notes
							DATE

8.3 Process Planning Sheets - AVC 31048 Bumper Beam Rear Outer

Mercia, Ltd.  Process Planning Sheets

PART NO.		ULSAB-AVC 31048			PART NAME:		Bumper Beam Rear Outer	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION		
10	Blank & Pierce Die	1100 x 1950	1	Transfer	85,000.00	Transfer Press Single Out		
20	Flange Die	1100 x 1950	1	Transfer	180,000.00	Transfer Press Single Out		
30	Finish Form Die	1100 x 1950	1	Transfer	140,000.00	Transfer Press Single Out		
40	Checking Fixture				24,000.00	Transfer Press Single Out		
50								
60								
70								
80				Total	\$429,000.00	Manpower requirements = 1 operator to load lead press, 2 operators to unload and rack finished Intermediate operations to run with automation.1000 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC		
ENGINEERING LEVELS						MAT. SPECS:	.8 1250 MPa	
DATE	LEVEL	DETAIL		APPROX. BLANK SIZE:		.8 x 1250 x 397 = 1 pc Approx Gross Weight = 3.117 Kg Ea		
24-Jan-01	G00			APPV'D. BY:		Notes		DATE

8.3 Process Planning Sheets - AVC 11405 Bracket Support Attachment Front Seat

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 11405				PART NAME:		Brket Head Support Attachment Front Seat	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION		
10	Blank & Pierce Die	845 x 1000	1	500 Ton	60,000.00	Single Out		
20	Flange Die	845 x 1000	1	500 Ton	85,000.00	Single Out		
30	Finish Form Die	845 x 1000	1	500 Ton	110,000.00	Single Out		
40	Checking Fixture				7,000.00	Single Out		
50								
60								
70								
80				Total	\$262,000.00	Manpower requirements = 1 operator to load lead press, 1 operators to unload and rack finished Intermediate operations to run with automation.500 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC		
ENGINEERING LEVELS						MAT. SPECS:	1.0 350 MPa	
DATE	LEVEL	DETAIL		APPROX. BLANK SIZE:		1.0 x 270 x 145 = 1 pc Approx Gross Weigt = 0.2421 Kg Ea		
09-May-01	A01			APPV'D. BY:		Notes	DATE	

8.3 Process Planning Sheets - AVC 11406 Bracket Retractor Attachment Front Seat RH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 11406				PART NAME:		Brket Retractor Attachment Front Seat RH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION		
10	Progressive die	1200 x 3000	1		240,000.00	Single Out		
20	Checking Fixture				4,500.00			
30								
40								
50								
60								
70								
80				Total	\$244,500.00	Manpower requirements = 1 operator to load lead press, 1 operators to unload and rack finished Intermediate operations to run with automation.1000 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC		
ENGINEERING LEVELS						MAT. SPECS:	1.5 450 MPa	
DATE	LEVEL	DETAIL				APPROX. BLANK SIZE:	1.5 x 427 x 366 = 1 pc Approx Gross Weight = 1.828 Kg Ea	
10-May-01	A01					APPV'D. BY:	Notes	DATE

8.3 Process Planning Sheets - AVC 11407 Bracket Retractor Attachment Front Seat LH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 11407				PART NAME:	Brket Retractor Attachment Front Seat LH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION	
10	Progressive die	1200 x 3000	1		240,000.00	Single Out	
20	Checking Fixture				4,500.00		
30							
40							
50							
60							
70							
80				Total	\$244,500.00	Manpower requirements = 1 operator to load lead press, 1 operators to unload and rack finished Intermediate operations to run with automation.1000 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC	
ENGINEERING LEVELS						1.5 450 MPa	
DATE	LEVEL	DETAIL			MAT. SPECS:		
10-May-01	A01				APPROX. BLANK SIZE:	1.5 x 427 x 366 = 1 pc Approx Gross Weight = 1.828 Kg Ea	
					APPV'D. BY:	Notes	DATE

8.3 Process Planning Sheets - AVC 11408 Reinforcement Retractor Attachment Seat RH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 11408				PART NAME:	Reinforcement Retractor Attachment Seat RH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION	
10	Progressive die	900 x 2000	1		140,000.00	Single Out	
20	Checking Fixture				4,000.00		
30							
40							
50							
60							
70							
80				Total	\$144,000.00	Manpower requirements = 1 operator to load lead press, 1 operators to unload and rack finished Intermediate operations to run with automation.1000 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC	
ENGINEERING LEVELS							
DATE	LEVEL	DETAIL			MAT. SPECS:	1.5 450 MPa	
10-May-01	A01				APPROX. BLANK SIZE:	1.5 x 260 x 200 = 2 pc Approx Gross Weight = .3042 Kg Ea	
					APPV'D. BY:	Notes	DATE

8.3 Process Planning Sheets - AVC 11409 Reinforcement Retractor Attachment Seat LH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 11409				PART NAME:	Reinforcement Retractor Attachment Seat LH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION	
10	Progressive die	900 x 2000	1		140,000.00	Single Out	
20	Checking Fixture				4,000.00		
30							
40							
50							
60							
70							
80				Total	\$144,000.00	Manpower requirements = 1 operator to load lead press, 1 operators to unload and rack finished Intermediate operations to run with automation.1000 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC	
ENGINEERING LEVELS						1.5 450 MPa	
DATE	LEVEL	DETAIL				MAT. SPECS:	
10-May-01	A01					APPROX. BLANK SIZE:	1.5 x 260 x 200 = 2 pc Approx Gross Weight = .3042 Kg Ea
						APPV'D. BY:	Notes
							DATE

8.3 Process Planning Sheets - AVC 11414 Bracket Back Support Attachment Outer Front Seat

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 11414				PART NAME:	Brkt back Support Attachment Outer Front Seat	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION	
10	Progressive die	500 x 1500	1		80,000.00	Single Out	
20	Checking Fixture				3,000.00		
30							
40							
50							
60							
70							
80				Total	\$83,000.00	Manpower requirements = 1 operator to load lead press, 1 operators to unload and rack finished Intermediate operations to run with automation.1000 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC	
ENGINEERING LEVELS						2.0 350 MPa	
DATE	LEVEL	DETAIL			MAT. SPECS:		
10-May-01	A01				APPROX. BLANK SIZE:	2.0 x 200 x 160 = 1 pc Approx Gross Weight = .4992 Kg Ea	
					APPV'D. BY:	Notes	DATE

8.3 Process Planning Sheets - AVC 11415 Bracket Back Support Attachment Inner Front Seat

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 11415				PART NAME:	Brkt back Support Attachment Inner Front Seat	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION	
10	Progressive die	500 x 1500	1		80,000.00	Single Out	
20	Checking Fixture				3,000.00		
30							
40							
50							
60							
70							
80				Total	\$83,000.00	Manpower requirements = 1 operator to load lead press, 1 operators to unload and rack finished Intermediate operations to run with automation.1000 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC	
ENGINEERING LEVELS							
DATE	LEVEL	DETAIL			MAT. SPECS:	2.0 350 MPa	
10-May-01	A01				APPROX. BLANK SIZE:	2.0 x 160 x 160 = 1 pc Approx Gross Weight = .3992 Kg Ea	
					APPV'D. BY:	Notes	DATE

8.3 Process Planning Sheets - AVC 11416 Bracket Seat Attachment Outer Front Seat RH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 11416				PART NAME:	Brkt Seat Attachment Outer Front Seat RH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION	
10	Progressive die	600 x 1500	1		105,000.00	2 out Attached	
20	Checking Fixture				3,500.00		
30							
40							
50							
60							
70							
80				Total	\$108,500.00	Manpower requirements = 1 operator to load lead press, 1 operators to unload and rack finished Intermediate operations to run with automation.1000 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC	
ENGINEERING LEVELS							
DATE	LEVEL	DETAIL			MAT. SPECS:	2.0 350 MPa	
10-May-01	A01				APPROX. BLANK SIZE:	2.0 x 326 x 135 = 2 pc Approx Gross Weight = .3432 Kg Ea	
					APPV'D. BY:	Notes	DATE

8.3 Process Planning Sheets - AVC 11417 Bracket Seat Attachment Outer Front Seat LH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 11417				PART NAME:	Brkt Seat Attachment Outer Front Seat LH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION	
10	Progressive die	600 x 1500	1			2 out Attached Tooling used to produce AVC11416 makes LH & RH	
20	Checking Fixture				3,500.00		
30							
40							
50							
60							
70							
80				Total	\$3,500.00	Manpower requirements = 1 operator to load lead press, 1 operators to unload and rack finished Intermediate operations to run with automation.1000 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC	
ENGINEERING LEVELS							
DATE	LEVEL	DETAIL			MAT. SPECS:	2.0 350 MPa	
10-May-01	A01				APPROX. BLANK SIZE:	2.0 x 326 x 135 = 2 pc Approx Gross Weight = .3432 Kg Ea	
					APPV'D. BY:	Notes	DATE

8.3 Process Planning Sheets - AVC 11418 Bracket Seat Attachment Inner Front Seat RH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 11418				PART NAME:	Brkt Seat Attachment Inner Front Seat RH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION	
10	Progressive die	600 x 1500	1		100,000.00	2 out Attached	
20	Checking Fixture				3,500.00		
30							
40							
50							
60							
70							
80				Total	\$103,500.00	Manpower requirements = 1 operator to load lead press, 1 operators to unload and rack finished Intermediate operations to run with automation.1000 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC	
ENGINEERING LEVELS							
DATE	LEVEL	DETAIL			MAT. SPECS:	2.0 350 MPa	
10-May-01	A01				APPROX. BLANK SIZE:	2.0 x 190 x 125 = 2 pc Approx Gross Weight = .3705 Kg Ea	
					APPV'D. BY:	Notes	DATE

8.3 Process Planning Sheets - AVC 11419 Bracket Seat Attachment Inner Front Seat LH

Mercia, Ltd.  Process Planning Sheets

PART NO.	ULSAB-AVC 11419				PART NAME:	Brkt Seat Attachment Inner Front Seat LH	
OP.	OPERATION	APPROX. DIE SIZE (F-B & L-R)	NO. DIES	PRESS TYPE	TOOL COST	DIE OPERATION DESCRIPTION	
10	Progressive die	600 x 1500	1			2 out Attached Tooling used to produce AVC 11418 produces LH & RH	
20	Checking Fixture				3,500.00		
30							
40							
50							
60							
70							
80				Total	\$3,500.00	Manpower requirements = 1 operator to load lead press, 1 operators to unload and rack finished Intermediate operations to run with automation.1000 pcs per hour NOTE: ALL DIMENSIONS ARE METRIC	
ENGINEERING LEVELS							
DATE	LEVEL	DETAIL			MAT. SPECS:	2.0 350 MPa	
10-May-01	A01				APPROX. BLANK SIZE:	2.0 x 190 x 125 = 2 pc Approx Gross Weight = .3705 Kg Ea	
					APPV'D. BY:	Notes	DATE