METHODE ELECTRONICS

Process Setting Chart

Date:

1. Supplier Details

Supplier Name:		Tel No.:	
Contact Name:		E-mail:	

2. General Information

Part No.:		Part Name:		Tool S/N:	
Machine type:		Screw Ø [mm]:		No of cavities:	
Material:	ABS	Master batch [%]:		Pre-heating:	°C hrs
Pressure recorded:	Plastic	Inj. cylinder Ø [mm]:		Intensification ratio:	Inj.cylinder Ø needed!

3. Settings

	Nozzle Zone	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Yoke Zone
Cylinder Temperature:	°C	°C	°C	°C	°C	°C	°C	°C
Hot Runner Temperature:		°C	°C	°C	°C	°C	°C	°C

	Ejector Side	Nozzle Side
Mould Temperature:	°C	°C

Injection

1st	Injection Speed	cm^3/s
	Injection Force [PP]	bar
	Switch Over	cm^3
2nd	Injection Speed	cm^3/s
	Injection Force [PP]	bar
	Switch Over	cm^3
3rd	Injection Speed	cm^3/s
	Injection Force [PP]	bar
	Switch Over	cm^3

Holding

Speed		cm^3/s
Ramp Time		sec
1st	Holding Pressure [PP]	bar
	Holding time	sec
2nd	Holding Pressure [PP]	bar
	Holding time	sec
3rd	Holding Pressure [PP]	bar
	Holding time	sec
Cooling time		sec

Dosage

Circumference Spd.	m/min
Back Pressure [PP]	bar
Volume	cm^3
Decompression Spd.	cm^3/s
Decompression Vol.	cm^3

Monitoring

Injection time	sec
Inj.press @ S/Over [PP]	bar
Max inject press [PP]	bar
Cushioning	cm^3
Total cycle time	sec

Convert Plastic Pressure to Hydraulic Pressure

Mould Parameters

		Mould Closing	Mould Opening
1st	Speed	mm/s	mm/s
	Force	KN	KN
	S/Over	mm	mm
2nd	Speed	mm/s	mm/s
	Force	KN	KN
	S/Over	mm	mm
3rd	Speed	mm/s	mm/s
	Force	KN	KN
	S/Over	mm	mm
	Clamping Pressure		KN
	Mould height		mm

Ejector Parameters

		Mould Closing	Mould Opening
1st	Speed	mm/s	mm/s
	Force	KN	KN
	S/Over	mm	mm
2nd	Speed	mm/s	mm/s
	Force	KN	KN
	S/Over	mm	mm
3rd	Speed	mm/s	mm/s
	Force	KN	KN
	S/Over	mm	mm

4. Notes

Remarks:

1) Field in blue lettering shall be filled.
2) All pressures are to be logged in as plastic pressure (not machine, hydraulic, etc.)
3) While setting, reference shall be made to the 'Matrix of ideal parameters document'.
4) First copy to be filled and forward with packing graph during first trials.
5) Another updated copy to be filled and forward when OEE will take place.
6) [PP] denotes plastic pressure while [HP] denotes Hydraulic pressure.

METHODE ELECTRONICS

Matrix for ideal parameters

Type of material	**ABS**				
Injection time of MAX	2 sec	filling up to 95% - 98% of parts			
Holding pressure to be between	500 bar	plastic pressure up to	1000 bar	plastic pressure	
for a MIN of	2 sec	as first holding time.			
Cylinder temperature to be between	200 °C	up to	260 °C		
Hot runner to be between	210 °C	up to	260 °C		
Mould temperature to be between	20 °C	up to	70 °C		

If a parameter is exceeded, a note is to be written on notes of our process setting chart stating why.

Type of material	**PP**				
Injection time of MAX	2 sec	filling up to 95% - 98% of parts			
Holding pressure to be between	450 bar	plastic pressure up to	900 bar	plastic pressure	
for a MIN of	3 sec	as first holding time.			
Cylinder temperature to be between	190 °C	up to	230 °C		
Hot runner to be between	190 °C	up to	230 °C		
Mould temperature to be between	20 °C	up to	45 °C		

If a parameter is exceeded, a note is to be written on notes of our process setting chart stating why.

Type of material	**PBT**				
Injection time of MAX	1.8 sec	filling up to 95% - 98% of parts			
Holding pressure to be between	600 bar	plastic pressure up to	1100 bar	plastic pressure	
for a MIN of	3 sec	as first holding time.			
Cylinder temperature to be between	250 °C	up to	290 °C		
Hot runner to be between	265 °C	up to	300 °C		
Mould temperature to be between	50 °C	up to	75 °C		

If a parameter is exceeded, a note is to be written on notes of our process setting chart stating why.

Type of material	**POM**				
Injection time of MAX	1.5 sec	filling up to 95% - 98% of parts			
Holding pressure to be between	600 bar	plastic pressure up to	1100 bar	plastic pressure	
for a MIN of	3 sec	as first holding time.			
Cylinder temperature to be between	175 °C	up to	200 °C		
Hot runner to be between	180 °C	up to	220 °C		
Mould temperature to be between	50 °C	up to	75 °C		

If a parameter is exceeded, a note is to be written on notes of our process setting chart stating why.

METHODE ELECTRONICS

Matrix for ideal parameters

Type of material	**PA6.**				
Injection time of MAX	**1.5 sec**	filling up to 95% - 98% of parts			
Holding pressure to be between	**750 bar**	plastic pressure up to	**1200 bar**	plastic pressure	
for a MIN of	**3 sec**	as first holding time.			
Cylinder temperature to be between	**255 °C**	up to	**300 °C**		
Hot runner to be between	**270 °C**	up to	**325 °C**		
Mould temperature to be between	**50 °C**	up to	**75 °C**		

If a parameter is exceeded, a note is to be written on notes of our process setting chart stating why.

Type of material	**PC**				
Injection time of MAX	**1.5 sec**	filling up to 95% - 98% of parts			
Holding pressure to be between	**600 bar**	plastic pressure up to	**1200 bar**	plastic pressure	
for a MIN of	**3 sec**	as first holding time.			
Cylinder temperature to be between	**255 °C**	up to	**300 °C**		
Hot runner to be between	**275 °C**	up to	**320 °C**		
Mould temperature to be between	**20 °C**	up to	**80 °C**		

If a parameter is exceeded, a note is to be written on notes of our process setting chart stating why.

Type of material	**PC_ABS**				
Injection time of MAX	**2 sec**	filling up to 95% - 98% of parts			
Holding pressure to be between	**600 bar**	plastic pressure up to	**1200 bar**	plastic pressure	
for a MIN of	**3 sec**	as first holding time.			
Cylinder temperature to be between	**255 °C**	up to	**290 °C**		
Hot runner to be between	**265 °C**	up to	**310 °C**		
Mould temperature to be between	**20 °C**	up to	**80 °C**		

If a parameter is exceeded, a note is to be written on notes of our process setting chart stating why.

Type of material	**PC_A_SURFACE**				
Injection time of MAX	**2 sec**	filling up to 95% - 98% of parts			
Holding pressure to be between	**500 bar**	plastic pressure up to	**1000 bar**	plastic pressure	
for a MIN of	**2 sec**	as first holding time.			
Cylinder temperature to be between	**200 °C**	up to	**260 °C**		
Hot runner to be between	**210 °C**	up to	**260 °C**		
Mould temperature to be between	**20 °C**	up to	**70 °C**		

If a parameter is exceeded, a note is to be written on notes of our process setting chart stating why.

Retention period: Production + 1 yr
Retention method: Soft copy

METHODE ELECTRONICS

Packing Graph

Date:

1. Supplier Details

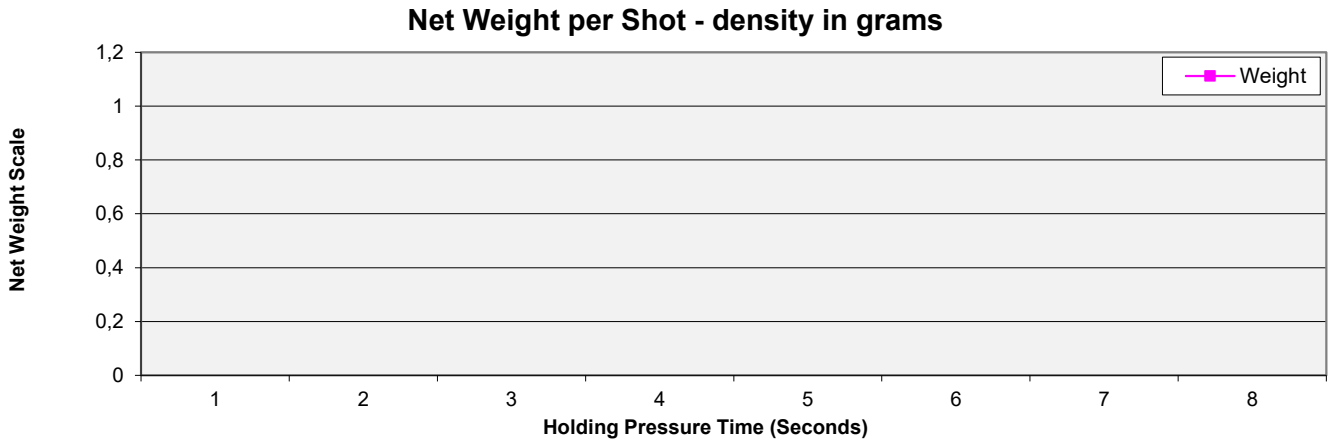
Supplier Name:		Tel No.:	
Contact Name:		E-mail:	

2. General Information

Part No.:		Part Name:		Tool S/N:				
Machine type:		Screw Ø [mm]:		No of cavities:				
Material:	ABS	Master batch [%]:		Pre-heating:		°C		hrs

Tick Holding Time	Holding Pressure Time	Net Weight Scale Actual	1st Holding Hydraulic Pressure	Remarks:
	(seconds)	(grams)	(Kg/cm2) ▼	
○	1			
○	2			
○	3			
○	4			
○	5			
○	6			
○	7			
○	8			

Convert Hydraulic to Plastic Pressure



Notes:

- Input information needed in grey shaded areas. All other information will be automatically copied from the 'Process Setting Chart'
- If Error messages are shown on the right hand side of the remarks section, please rectify the process and update the values before submitting the packing graph to Methode.
- Once the process is set-up, and the packing graph is drafted, tick the most sensible holding time.
- Take a complete shot and weigh each part individually. Record the individual weight in the table below.

Cavity no.	1	2	3	4	5	6	7	8
Weight in grams								

Retention period: Production + 1 yr
Retention method: Soft copy