

MOLDS – PROTOTYPE AND SERIES

Service offered by:



INDEX

- 1. Main differences: Prototype and Serial Molds
- 2. Different types of molds and materials
- 3. Quotation process
- 4. Manufacturing process
- 5. Alternatives for later injection
- 6. Samples

MAIN DIFFERENCES

PROTOTYPE MOLDS - SERIAL MOLDS

The differences between prototype molds and serial molds are the following:

- Less durable steel: P20
- Less guaranteed injections: <10,000
- Quality of parts: Similar to serial molds in guaranteed injected parts.
- Mold manufacturing led times: 10% shorter
- Price: From 20% to 30% lower

DIFFERENT TYPES OF MOLDS AND MATERIALS

We can offer the following types of molds:

- 1. One level plastic injection molds
- 2. Multi-level plastic injection molds
- 3. Double injection molds (different color or material)
- 4. High performance thermoplastics molds
- 5. Precision molds
- 6. Precision molds Automotive
- 7. Precision molds Medicine
- 8. Home electrical appliances and industrial products molds

To get more info about this kind of molds, feel free to visit our site: www.protospain.com

With respect to injection materials, we offer a wide range, including: PP, ABS, PC, PA, PA+GF, PBT, POM, etc..

QUOTATION PROCESS

Normally, we can elaborate a quote in 24-72 hours from the reception of the required information, consisting of:

- **1. 3D files.-** Files in format IGS, STEP or CATIA are chiefly required.
- 2. Surface finishes.- We need to know if there are surface finishes implying mold texturing.
- **3.** Additional special finishes.- Painted, screen printed, UVI treatment, etc.
- 4. Number of units to be injected. Number of units to be injected each time and number of units expected of the product.
- **5. Material.** Material chosen to be injected into the parts.
- **6. Other requirements.** Including inserts, threaded inserts, added or assembled parts, dimensional reports, etc.
- 7. Non-Disclosure Agreement. We have a model NDA in case the client wishes to sign it and does not have its own.
- **8. Quotation.-** The quotes will detail all the points aforementioned.

MANUFACTURING PROCESS

- 1. Quotation approval.- All manufacturing conditions are detailed here, and it must be signed and sealed by the client, and sent back to us in order to proceed with the next steps.
- 2. **DFM.- Design For Manufacturing.-** In this process, we analyze the part to be produced and we agree on the final design so the product can be injected seamlessly. This stage normally takes 2 or 3 days.
- **3. Mold Flow.-** A report is made with the injection flow to determine the joint and injection points. This stage is carried out simultaneously with the previous one, and both take 2-3 days.
- **4. 3D mold approval.-** The mold design starts only when the DFM and the Mold Flow are approved by the client, **and it will take around 4 days.**
- **5. Manufacturing.-** The manufacturing process starts and it depends on the part to be injected.
- **Test.-** When the mold is finished, in a 2 days led time, the first run of parts is made to be approved by the client.
- **7. Later modificactions.-** Required samples will be carried out for injection of parts final approval.
- **8. Samples approval.-** When the parts are approved, the mold will be ready for injection.

ALTERNATIVES FOR LATER INJECTION

- 1. Injection in Prodicex facilities.- We have injection machines to carry out series and pre-series.
- 2. Injection in client facilities.- This is key since the mold design must be defined in accordance with the the right settings in the client's injection machine, so we need the technical data sheet of the machine where the parts are to be injected.

SAMPLES

Here you will find a sample of the parts made with prototype molds or serial molds, with different materials and surface finishes, stating manufacturing led times of the mold and of the DFM and 3D mold definitions.

Signing NDAs with our clients prevents us from showing the parts assembled for them, and the parts we show is because we have their prior consent to disclosure.

PLATE - SUPPORT



98	Mold		 Prototyping mold
L	Hot Runner		 No
	Nº Cavities		 1+1
0000	Mold life (Cyc	:les)	 20.000
	Material		 PC + ABS
	Surface finish	ing	 Texturized
	Sector		 Informatic
3	Leadtime - To	tal	 42 Days
		DFM + 3D	 7 Days
		Mold	 35 Days





Notes





Metal inserts

SPEAKER - CENTRAL



4	Mold		 Prototyping mold
La	Hot Runner		 No
	Nº Cavities		 1 X 1
0000	Mold life (Cycl	es)	 20.000
	Material		 ABS
4.00	Surface finishi	ng	 Painted - Rubbery
	Sector		 Informatic
Ö	Leadtime - Tot	tal DFM + 3D Mold	 27 Days 7 Days 20 Days
[<i>C</i>]	Notes		 nted - Rubbery - Serigraphy









PROTECTOR 1



· MA			
	Mold		 Prototyping mold
4	Hot Runner		 No
2111	Nº Cavities		 1 X 1
0000	Mold life (Cyd	cles)	 10.000
1	Material		 ABS (BLACK) UV
	Surface finish	ing	 Polished
2	Sector		 Several
Ö	Leadtime - To	otal DFM + 3D Mold	 27 Days 7 Days 20 Days
101	Notes		







COVER



	Mold	 Prototyping mold
10	Hot Runner	 No
	Nº Cavities	 1+1
0000	Mold life (Cycles)	 20.000
	Material	 PC + ABS
	Surface finishing	 Polished
	Sector	 Several
Ö	Leadtime - Total DFM + 3D Mold	 32 Days 7 Days 25 Days
	Notes	 , .





PROTECTOR 2



418	Mold		 Prototyping mold
<u> </u>	Hot Runner		 No
MAIN	Nº Cavities		 1+1
0000	Mold life (Cyc	:les)	 15.000
	Material		 PA66 + 30%GF
	Surface finish	ing	 Polished
	Sector		 Several
Ö	Leadtime - To	tal DFM + 3D	 37 Days 7 Days
		Mold	 30 Days
[4]	Notes		









DATA BOX



Mold			Prototyping mold
Hot Runner			No
Nº Cavities			1+1
Mold life (Cycles)			10.000
Material			ABS (BLACK) UV
Surface finishing			Texturized
Sector			Informatic
Leadtime - Total			27 Days
DFI	M + 3D		7 Days
Mo	old		20 Days
Notes			Metal inserts
	Nº Cavities Mold life (Cycles) Material Surface finishing Sector Leadtime - Total DF	Hot Runner Nº Cavities Mold life (Cycles) Material Surface finishing Sector Leadtime - Total DFM + 3D Mold	Hot Runner









PIN + SENSOR SCANNER



	Mold	 Prototyping mold
1	Hot Runner	 No
	Nº Cavities	 1+1
0000	Mold life (Cycles)	 50.000
	Material	 PC + ABS
	Surface finishing	 Polished
	Sector	 Informatic
Ö	Leadtime - Total DFM + 3D Mold	 32 Days 7 Days 25 Days
	Notes	









COVER SENSOR SCANNER



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Mold	 Prototyping mold
Hot Runner	 No
Nº Cavities	 1 X 1
Mold life (Cycles)	 50.000
Material	 PC + ABS
Surface finishing	 Texturized
Sector	 Informatic
Leadtime - Total DFM + 3D Mold	 32 Days 7 Days 25 Days
Notes	





PIECE - ARMREST



到昌	Mold		 Prototyping mold
1	Hot runner		 No
	Nº Cavities		 1 X 1
0000	Mold life (Cyd	cles)	 10.000
	Material		 PA66 + 30%GF
	Surface finish	ing	 Polished
	Sector		 Automotive
Ö	Leadtime - To	otal DFM + 3D Mold	 32 Days 7 Days 25 Days
Г /2			
ك	Notes		





GLOVE BOX - DOOR



Sport	A CONTRACTOR
-	State of
(Base)	460

Mold ----- Formal mold





Nº Cavities ----- 1 + 1



Mold life (Cycles) ------ 500.000



Material ------ PE-MD15



Surface finishing ----- Graining / Technical polish



Sector ------ Automotive



Mold ----- 42 Days



Notes -----









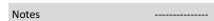
CAR REAR VIEW MIRRORS



4	Mold	 Formal mold
L	Hot runner	 JDO 1 open gates to side gate
2411111	Nº Cavities	 1+1
0000	Mold life (Cycles)	 500.000
W. 444	Material	 ASA + PC
	Surface finishing	 Cavity NH-573
2	Sector	 Automotive
	Leadtime - Total	 42 Days







DFM + 3D

Mold





7 Days 35 Days



FRONT BODY PILLARS



	Mold		 Formal mold
1	Hot runner		 OO 1 open gates to sub gate
	Nº Cavities		 1+1
0000	Mold life (Cycles)		 500.000
	Material		 P/E-TD10
	Surface finishing		 Cavity grain: 203.61 Core: Polish
	Sector		 Automotive
Ö		l DFM + 3D Mold	 49 Days 7 Days 42 Days
	Notes		









CENTRAL CONSOLE



1.1		
4	Mold	 Formal mold
L	Hot runner	 UDO 1 open gates to sub gate
MANIN	Nº Cavities	 1+1
0000	Mold life (Cycles)	 500.000
	Material	 PP T20
1,465.	Surface finishing	 iviolamaster not runner 6 valve gate direct into the
	Sector	 Automotive
Ö	Leadtime - Total DFM + 3D	 56 Days 7 Days





Notes

Mold



49 Days



ARMREST - BASE



	Mold		 Formal mold
16	Hot runner		 JDO 1 hot tip to cold runner
	Nº Cavities		 1+1
0000	Mold life (Cycles)		 500.000
	Material		 PP-AS-004
1000	Surface finishing		 Cavity grain: 800# Core grain: 400#
	Sector		 Automotive
Ö	Leadtime - Total		 49 Days
		DFM + 3D	 7 Days
		Mold	 42 Days





Notes





ARMREST - BOX



1.1		
	Mold	 Formal mold
1	Hot runner	 No
MA 71117	Nº Cavities	 1+1
0000	Mold life (Cycles)	 500.000
W. 44.	Material	 ABS-IC2-2
	Surface finishing	 Cavity grain: 800# Core grain: 400#
	Sector	 Automotive







Mold

DFM + 3D



Leadtime - Total



49 Days

7 Days 42 Days



CENTRAL PILLARS 1



	Mold	 Formal mold
1.	Hot runner	 Synventive hot runner 6 valve gates
	Nº Cavities	 1+1
0000	Mold life (Cycles)	 500.000
	Material	 PC+ABS
	Surface finishing	 Polish grain: 240#
	Sector	 Automotive
Ö	Leadtime - Total DFM + 3D Mold	 84 Days 7 Days 77 Days





Notes





CENTRAL PILLARS 2







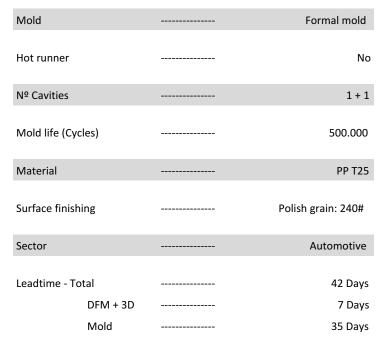


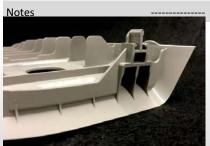
















SEAT BELT TRIM



LA E			
	Mold		 Formal mold
4.4	Hot runner		 Synventive hot runner 2 open gates to cold runner sub gate
	Nº Cavities		 1 * 2
0000	Mold life (Cycle	es)	 500.000
	Material		 PC+ABS
	Surface finishing		 Cavity grain: Textilnarbe N 65 Core grain 240#
	Sector		 Automotive
Ö		al DFM + 3D Mold	 49 Days 7 Days 42 Days
101	Notes		









SUPPORT - LIGHTING 1



	Mold	 Formal mold
1	Hot Runner	 Yudo 1 Drop
	Nº Cavities	 1+1
0000	Mold life (Cycles)	 1.000.000
	Material	 PE-TD10
	Surface finishing	 Polished
	Sector	 Automotive
Ö	Leadtime - Total DFM + 3D	 47 Days 7 Days







Notes

Mold





40 Days

SUPPORT - LIGHTING 2



L.	

Prototyping mold Mold

Hot Runner No

Nº Cavities 1 X 1

Mold life (Cycles) 20.000

P G30 + Santoprene 101-50 Material



Surface finishing Polished



Sector Automotive



Leadtime - Total 57 Days

DFM + 3D7 Days

Mold

50 Days



Overmoulding: 2 Molds Notes









SUPPORT - LIGHTING 3



	Mold		 Formal mold
14	Hot Runner		 Yudo 2 Drops
	Nº Cavities		 1+1
0000	Mold life (Cycles)		 1.000.000
	Material		 PE
	Surface finishing		 Polished
	Sector		 Automotive
Ö	Leadtime - To	tal DFM + 3D Mold	 55 Days 7 Days 48 Days
Г //			.o buys
تگا	Notes		



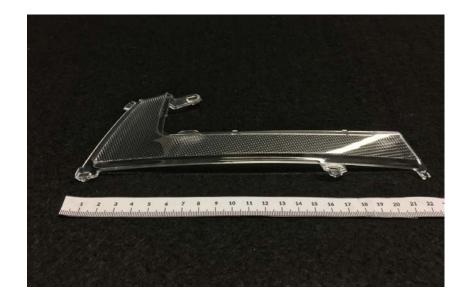








	Mold		 Formal mold
4	Hot Runner		 Synventive 1 Drop
MAZIII)	Nº Cavities		 1+1
0000	Mold life (Cycles)		 500.000
	Material		 PC
	Surface finishing		 Polished
	Sector		 Automotive
Ö	Leadtime - To	otal DFM + 3D Mold	 47 Days 7 Days 40 Days
Γ / 2			·
	Notes		









4	Mold		 Formal mold
L	Hot Runner		 Synventive 1 Drop
	Nº Cavities		 1+1
0000	Mold life (Cycles)		 500.000
	Material		 PC
	Surface finishing		 Polished
	Sector		 Automotive
Ö	Leadtime - Total DFM + 3D Mold		 47 Days 7 Days 40 Days
Γ <i>O</i> ;	Notes		







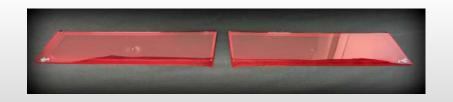




110				
	Mold			Formal mold
1	Hot Runner			Synventive 1 Drop
	Nº Cavities			1 X 1
0000	Mold life (Cycl	Mold life (Cycles)		500.000
	Material			PC
	Surface finishing			Polished
	Sector			Automotive
Ö	Leadtime - Total DFM + 3D			47 Days 7 Days
M	Notes	Mold		40 Days



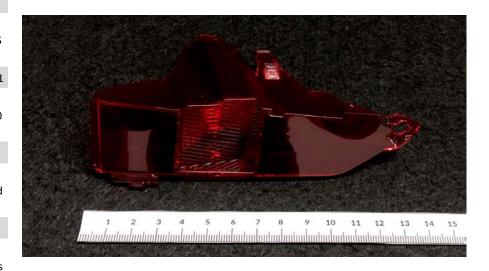








1 .			
	Mold		 Formal mold
4	Hot Runner		 Nozzle HRS
	Nº Cavities		 1+1
0000	Mold life (Cyc	les)	 500.000
W. 2-44	Material		 PC HT APEC 1895 (BAYER)
	Surface finishi	ing	 Polished
	Sector		 Automotive
Ö	Leadtime - To	tal DFM + 3D Mold	 49 Days 7 Days 42 Days
Γ <i>/</i> ?			Optical polished - Diamond
ك	Notes		 paste





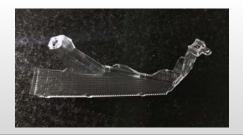


paste



4	Mold		 Formal mold
1.4	Hot Runner		 Nozzle HRS
	Nº Cavities		 1+1
0000	Mold life (Cycles)		 500.000
	Material		 PC HT APEC 1895 (BAYER)
1,400	Surface finishing		 Polished
	Sector		 Automotive
Ö	Leadtime - To	tal DFM + 3D Mold	 49 Days 7 Days 42 Days
		IVIOIU	42 Days





Notes



paste

Optical polished - Diamond

Notes



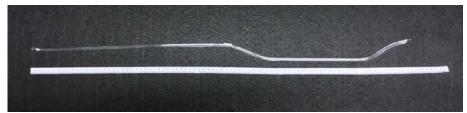
60 B			
	Mold		 Formal mold
<u>L</u> &	Hot Runner		 Synventive 1 Drop
	Nº Cavities		 1+1
8888	Mold life (Cycles)		 500.000
	Material		 PC
	Surface finishing Sector		 Polished
			 Automotive
Ō	Leadtime - To	otal	 57 Days
		DFM + 3D	 7 Days
		Mold	 50 Days







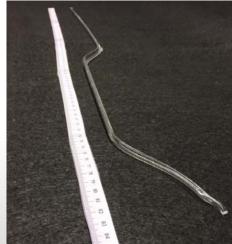
4	Mold	 Formal mold
L	Hot Runner	 Moldmaster 2 open gates to side gate
MA 71117	Nº Cavities	 1+1
0000	Mold life (Cycles)	 500.000
0.24.	Material	 PMMA
	Surface finishing	 Polished
	Sector	 Automotive
Ö	Leadtime - Total DFM + 3D Mold	 49 Days 7 Days 42 Days
	Notes	 Interchangeable insert











Hot Runner



160	64	100	$\Im I$
No.	28.	dan	20
100		200	8







Nº Cavities ----- 1+1



Mold life (Cycles) ------ 500.000



Material ------ PMMA



Surface finishing ------ Polished



Sector ------ Automotive



Leadtime - Total ----- 42 Days

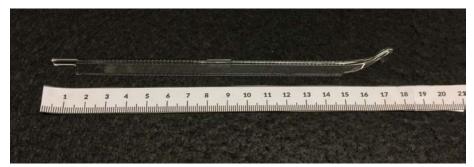


----- 7 Days



Notes ----- Interchangeable insert



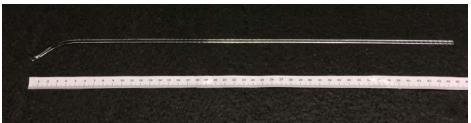




No



	Mold		 Formal mold	
4	Hot Runner		 No	
	Nº Cavities		 1+1	
0000	Mold life (Cyc	cles)	 500.000	
	Material		 PMMA (PLEXIGLAS 8N)	
	Surface finishing		 Polished	
	Sector		 Automotive	
Ö	Leadtime - To	otal DFM + 3D	 42 Days 7 Days	
		Mold	 35 Days	
	Notes			





Notes



	Mold		 Formal mold
L	Hot Runner		 Moldmaster 2 valve gates direct to the part
	Nº Cavities		 1+1
0000	Mold life (Cycles)		 500.000
0 4 4 T	Material		 PMMA (PLEXIGLAS 8N)
	Surface finishing		 Polished
	Sector		 Automotive
Ö	Leadtime - Total DFM + 3D		 49 Days 7 Days
		Mold	 42 Days

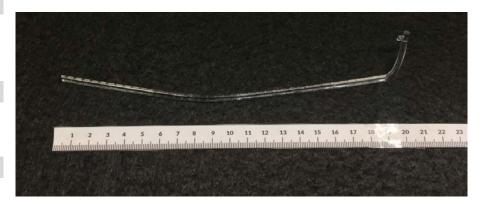








4	Mold	 Formal mold
L.	Hot Runner	 Moldmaster 2 valve gates direct to the part
	Nº Cavities	 1+1
9999 Berry .	Mold life (Cycles)	 500.000
	Material	 PMMA (PLEXIGLAS 8N)
	Surface finishing	 Polished
	Sector	 Automotive
Ö	Leadtime - Total DFM + 3D Mold	 49 Days 7 Days 42 Days
	Notes	







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