

BALA

TECHNICAL DATA

YUDO



BALA nozzle

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Nozzle Data

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● Application note

적용기준

Size of nozzles 노즐의 규격

Unit : mm

Size	Channel dia.		Gate		
	Open	Valve	CC, CA, CF, CL, CE, LCA, LCF (Open)	TAC, TLC, TOE (Open)	Valve
18	6	8	0.8 / 1 / 1.5 CAE 1.5 / 2	1.5 / 2	1.2 / 1.5 / 2
25	8	10	1 / 1.5 / 2 CAE 2 / 3	2 / 2.5 / 3	1.5 / 2 / 2.5
35	10	15	1.5 / 2 / 2.5 CAE 3 / 4	3 / 3.5 / 4	2.5 / 3 / 3.5 / 4
45	15	22	2 / 3 / 4 CAE 4 / 5 / 6	4 / 5 / 6	4 / 5 / 6 / 7 / 8

- BALA nozzle has 4 standardized sizes and each size has various gate diameters.
- The size of nozzle is displayed after the type name(e.x. BIM 25 : BALA nozzle 25), and determines the injection volume of nozzle.
- BALA 노즐은 4개의 표준화된 규격과 각 규격별 다양한 크기의 게이트를 갖추고 있습니다.
- 노즐의 규격은 각 타입 뒤에 표시되며(예-BIM25:BALA NOZZLE 25), 노즐의 사출량을 결정합니다.

Injection volume by nozzle size 노즐 규격에 따른 사출량

- Injection volume varies to the resin used, thickness of the product, injection speed and gate diameter.
- The following figures are the reference for helping to understand the various type of gate system.
- Please contact YUDO representative or agency for an actual application.
- 사출량은 사용할 수지의 특성과 제품 두께, 사출 속도, 게이트의 직경에 따라 결정됩니다.
- 유도 노즐 시스템의 규격별 성능과 적요에 관하여 다음 내용을 참조하기 바라며, 실제 제품에 적용하실 때는 당사와 협의하여 주시기 바랍니다.

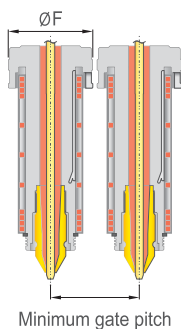
Unit : gram

Size	Gate system	Viscosity			Product thickness		Materials	
		High (Low MI)	Medium	Low (High MI)	Thin (2mm ↓)	Thick (2mm ↑)	Engineering	General
18	Open	~30	~50	~100	~50	~100	~30	~50
	Valve	~40	~60	~120	~60	~120	~40	~60
25	Open	~60	~100	~200	~100	~200	~60	~100
	Valve	~70	~120	~240	~120	~240	~70	~120
35	Open	~300	~500	~800	~500	~800	~300	~500
	Valve	~350	~600	~1000	~600	~1000	~350	~600
45	Open	300~	500~	800~	500~	800~	300~	500~
	Valve	350~	600~	1000~	600~	1000~	350~	600~

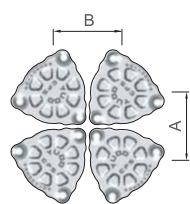
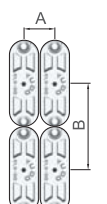
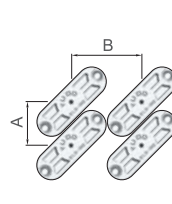
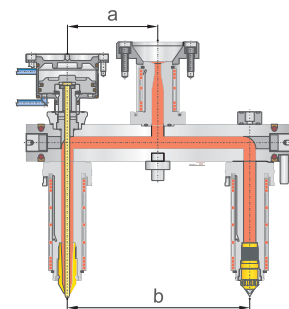
Minimum gate pitch by nozzle type 노즐별 최소 게이트 간격

Unit : mm

Nozzle size	Nozzle flange size(ØF)	Nozzle type	Minimum cylinder pitch				Minimum nozzle pitch	
			Type	Square(A)	Rectangle(A,B)	Parallel(A,B)	Center to gate(a)	Gate to gate(b)
BALA 18	38	Valve	ELS 50	-	39 / 99	50 / 81	45	40
			CPS 50	59 / 59	-	-	55	59
		Open	-	-	-	-	-	40
BALA 25	50	Valve	ELS 50	-	39 / 99	50 / 81	45	52
			CPS 50	59 / 59	-	-	55	59
		Open	-	-	-	-	-	52
BALA 35	60	Valve	CPS 50	59 / 59	-	-	55	62
			CPS 70	79 / 79	-	-	65	79
		Open	-	-	-	-	-	62
BALA 45	70	Valve	CPS 70	79 / 79	-	-	65	79
			CPS 90	99 / 99	-	-	75	99



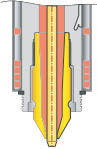
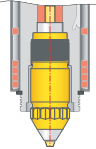
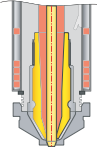
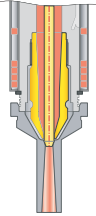
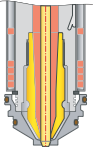
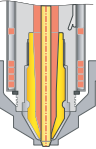
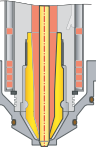
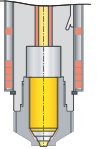
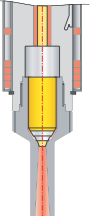
Cylinder minimum pitch

CPS
- square (50, 70, 90)ELS
- rectangleELS
- parallel

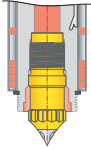
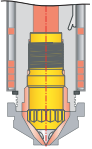
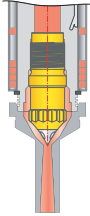
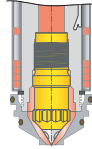
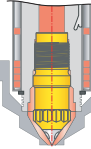
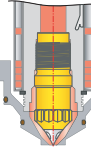
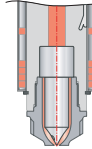
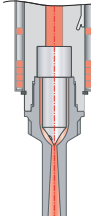
● Application note

적용기준

Material compatibility 수지의 적합성

Gate type	Valve								
Gating method	VV	VC	VA	VAE	VF	LVA	LVF	TVA	TVL
									
Amorphous materials (비결정성 수지)									
ABS	☆	☆	☆	☆	☆	☆	☆	☆	☆
PC	○	○	○	○	○	○	○	☆	☆
PMMA (Acryl)	☆	☆	☆	○	☆	☆	☆	☆	○
PPO	☆	☆	☆	☆	☆	☆	☆	☆	☆
PS	☆	☆	☆	☆	☆	☆	☆	☆	☆
PUR	○	○	○	○	☆	○	☆	○	○
PVC	○	○	○	○	○	○	○	○	○
SAN	○	○	○	○	☆	○	☆	○	○
Crystalline materials (결정성 수지)									
PA	○	○	○	△	☆	☆	○	☆	○
PBT	○	○	○	○	☆	○	☆	○	○
PE	☆	☆	☆	☆	☆	☆	☆	☆	☆
PET	○	○	○	○	☆	○	☆	○	○
POM(Acetal)	○	○	○	○	☆	○	☆	○	○
PP	☆	☆	☆	☆	☆	☆	☆	☆	☆
PPS	○	○	△	△	○	☆	○	☆	△
LCP	○	○	○	△	○	○	○	○	△
Additives (첨가제 함유)									
Flame retardants (난연제 함유)	○	○	○	○	☆	○	☆	○	○
Glass fiber filled (유리섬유 함유)	○	☆	○	○	○	☆	☆	☆	☆
Stabilizer filled (안정제 함유)	○	○	○	○	○	○	○	○	○
Color change (색상 교환)	○	☆	△	☆	○	○	○	○	○
☆ : Good (적합) ○ : Possible (가능) △ : Contact YUDO (협의 후 제한 적용) ✕ : Not recommended (적용 불가)									

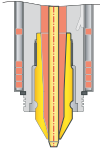
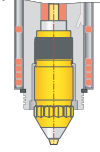
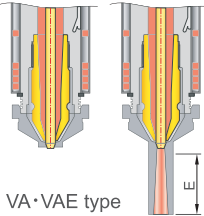
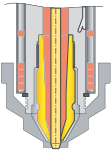
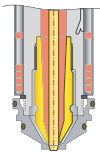
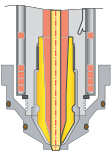
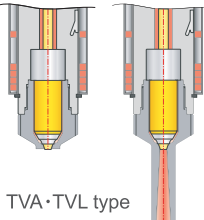
Material compatibility 수지의 적합성

Gate type	Open								
Gating method	CC	CA	CAE	CF	LCA	LCF	TAC	TLC	TOE
									
Amorphous materials (비결정성 수지)									
ABS	☆	☆	☆	☆	☆	☆	☆	☆	☆
PC	△	△	△	○	△	○	○	○	☆
PMMA (Acryl)	○	○	○	○	○	○	○	○	☆
PPO	○	☆	☆	☆	☆	☆	☆	☆	☆
PS	☆	☆	☆	☆	☆	☆	☆	☆	☆
PUR	△	△	△	△	△	○	○	○	☆
PVC	×	×	×	×	×	×	×	×	○
SAN	○	☆	☆	☆	☆	☆	☆	☆	☆
Crystalline materials (결정성 수지)									
PA	○	☆	☆	☆	☆	☆	☆	☆	○
PBT	△	○	○	○	○	○	○	○	△
PE	☆	☆	☆	☆	☆	☆	☆	☆	☆
PET	△	○	○	○	○	○	○	○	△
POM(Acetal)	○	○	○	○	○	○	○	○	○
PP	☆	☆	☆	☆	☆	☆	☆	☆	☆
PPS	○	○	○	☆	○	☆	☆	☆	○
LCP	△	△	△	△	△	△	△	△	○
PEEK	×	△	△	△	△	△	△	△	△
Additives (첨가제 함유)									
Flame retardants (난연제 함유)	△	△	△	○	△	○	○	○	☆
Glass fiber filled (유리섬유 함유)	○	△	○	○	△	○	○	○	○
Stabilizer filled (안정제 함유)	△	○	○	○	○	○	○	○	○
Color change (색상 교환)	○	○	○	○	○	○	△	△	☆
☆ : Good (적합) ○ : Possible (가능) △ : Contact YUDO (협의 후 제한 적용) × : Not recommended (적용 불가)									

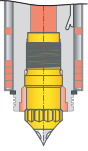
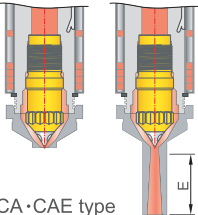
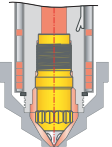
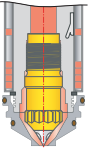
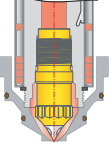
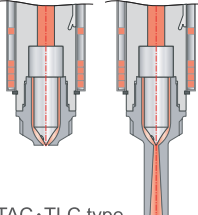
● Gate method

게이트 형상

BALA valve system

Type	Concept	Advantages / Application
 V V type	- General application of valve system - Gate area to be machined by customer - 밸브시스템의 가장 일반적인 구조 - 게이트부는 고객이 직접 가공	- Minimizes gate mark - For prolonged gate lifespan, the gate area should be heat-treated - For precise machining in gate area, refer to page 17 - 게이트 자국 최소화 - 게이트의 수명을 보증받기 위해서는 열처리 필요 - 게이트부의 정확한 가공을 위해서는 유도의 가공 매뉴얼을 참조
 VC type	- General application of valve system - Gate area to be machined by customer - The dual structure with inserting steel tip - 밸브 시스템의 가장 일반적인 구조 - 게이트부는 고객이 직접 가공 - 스틸 팁 인서트 방식의 이중 구조	- For prolonged gate lifespan, the gate area should be heat-treated - For precise machining in gate area, refer to page 17 - Easy color change - Excellent abrasion resistance - 게이트의 수명을 보증 받기 위해서는 열처리 필요 - 게이트부의 정확한 가공을 위해서는 유도의 가공 매뉴얼을 참조 - 색상 교환 용이 - 내마모성이 우수함
 VA·VAE type	- Precisely machined and heat-treated gate bush with adjustable sprue will be supplied - Controlled gate vestige - Easy replaceable gate bush(VAE) - 정밀 가공하여 열처리된 게이트 부시 적용 - 게이트 형합이 미려	- The most safe application of valve system - In addition to the valve pin mark, the gate bush mark will be added to the part - Easy replaceable gate bush - A sprue will added on your product(VAE) The length of sprue can be adjusted by customer(VAE) - 밸브 시스템을 가장 안전하게 적용하는 효과 - 제품에 밸브 핀 자국 및 게이트 부시자국이 남음 - 게이트 부시 교환이 용이
 LVA type	- Precisely machined and heat-treated gate bush will be applied - Controlled gate vestige - The LVA is an extended gate bush to enable easy assembly and disassembly - The length of LVA is equal to the height of cavity plate - 정밀 가공하여 열처리된 게이트 부시 적용 - 게이트 형합이 미려 - 연장형 게이트 부시로 분해 조립이 용이 - 길이는 캐비티 플레이트의 높이와 동일	- The most safe application of valve system - In addition to the valve pin mark, the gate bush mark will be added to the part - Easy replaceable gate bush - 밸브 시스템을 가장 안전하게 적용하는 효과 - 제품에 밸브 핀 자국 및 게이트 부시자국이 남음 - 게이트 부시 교환이 용이
 VF type	- Gate bush designed to enable hot or cold fluid to flow directly around the gate - 게이트 주위에 냉각수 순환이 가능	- Fast cycle molding applications - Molding condition improved in engineering plastic - Easy replaceable gate bush - 고속 사출 성형시 적용에 적합 - 엔지니어링 플라스틱의 성형조건 개선 - 게이트 부시 교환이 용이
 LVF type	- Gate bush designed to enable hot or cold fluid to flow directly around the gate - LVF gate bush is an extended gate bush to enable easy assembly and disassembly - The length of LVA is equal to the height of cavity plate - 게이트 주위에 냉각수 순환이 가능 - LVF 게이트 부시는 길이연장이 가능함 - 길이는 캐비티 플레이트의 높이와 동일	- Fast cycle molding applications - Molding condition improved in engineering plastic - Easy replaceable gate bush - 고속 사출 성형시 적용에 적합 - 엔지니어링 플라스틱의 성형조건 개선 - 게이트 부시 교환이 용이
 TVA·TVL type	- Gate bush is assembled to nozzle body by tapping - Easy assembly and disassembly in a mold - Simple application - 정밀 가공하여 열처리된 게이트 부시 적용 - 연장형 게이트 부시로 분해 조립이 용이 - 밸브 시스템을 가장 손쉽게 적용이 가능한 구조	- Gate area machining of a mold is simple - Controlled gate vestige - A sprue will be added on your product(TVL) - The length of sprue can be adjusted by customer(TVL) - 제품에 밸브 핀 자국 및 게이트 부시 자국이 남음 - 게이트 부시 교환이 용이 - 스프루의 길이 조절이 가능함(TVL)

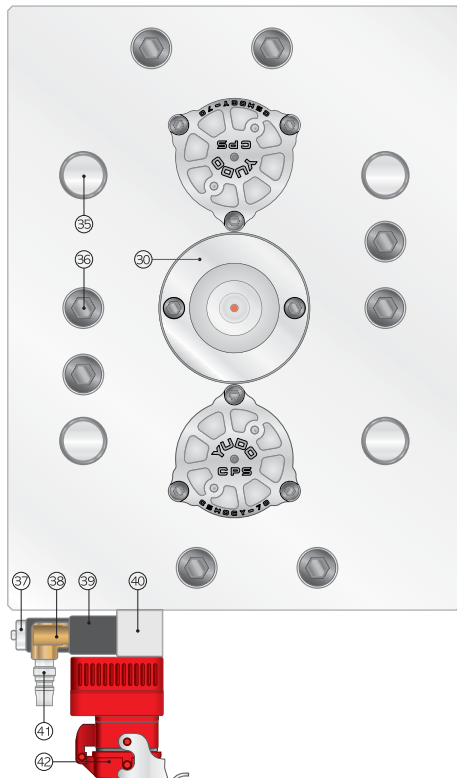
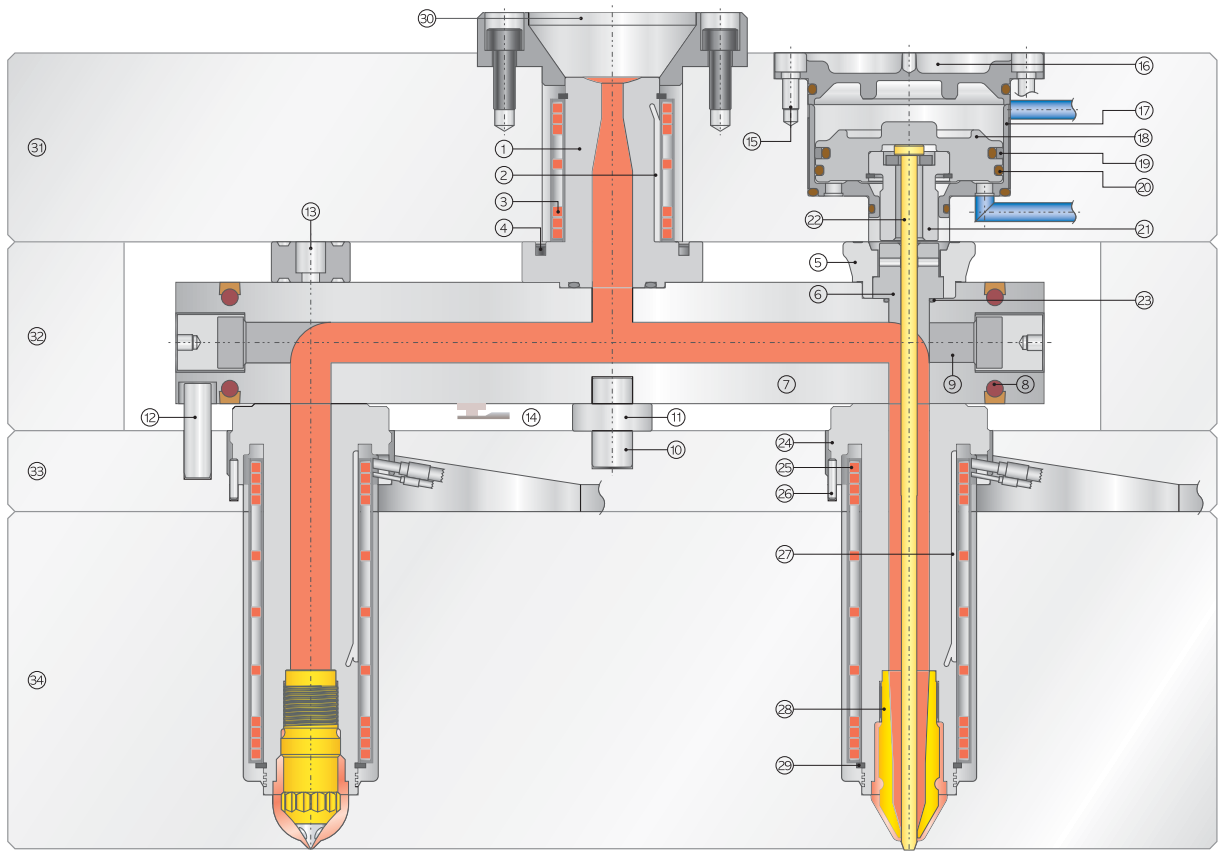
BALA open system

Type	Concept	Advantages / Application
 CC type	- To obtain pin-point gate using open nozzle system - Gate area to be machined by customer - 오픈노즐을 사용하여 핀 포인트 게이트의 효과 - 게이트부는 고객이 직접 가공	- Minimizes gate mark - For prolonged gate lifespan, gate area to be heat treated - Color changes is not considered, but achievable with seal cap.(Option) - 게이트 자국 최소화 - 게이트의 수명을 보증받기 위해서는 열처리 필요 - 색교환용 아님. 단, Insulation Insert 삽입시 색교환 용이(옵션)
 CA·CAE type	- Thermal gate with gate bushing insert - Clean gate vestige - Diametral bushing witness line will show on the part - 정밀 가공하여 열처리된 게이트 부시 적용 - 게이트 형합 미려 - 제품에 게이트 부시 흔적 남음	- Easy manufacturing of gate detail - Gate bushing insert is heat treated for longer life - 게이트 가공이 용이함 - 열처리된 게이트 부시는 장기간의 수명을 보증함
 LCA type	- LCA gate bush is an extended gate bush to enable easy assembly and disassembly - CAE gate bush have a adjustable sprue - The length of LCA is equal to the height of cavity plate - 정밀 가공하여 열처리된 게이트 부시 적용 - Gate bush의 길이는 캐비티 플레이트의 높이와 동일	- In addition to the gate mark, the gate bush mark will be added to the part - Color change is not considered, but achievable with seal cap(Option) - 게이트자국 및 게이트 부시자국이 제품에 나타남 - 게이트 부시 교환 용이
 CF type	- Gate bush designed to enable hot or cold fluid to flow directly around the gate - 게이트 주위에 냉각수 순환이 가능	- Fast cycle molding applications - Molding condition improved in engineering plastic - Easy replaceable gate bush - 고속 사출 성형시 적용에 적합 - 엔지니어링 플라스틱의 성형조건 개선 - 게이트 부시 교환이 용이
 LCF type	- Gate bush designed to enable hot or cold fluid to flow directly around the gate - The length of LCF is equal to the height of cavity plate - 게이트 주위에 냉각수 순환이 가능 - Gate bush의 길이는 캐비티 플레이트의 높이와 동일	- Fast cycle molding applications - Molding condition improved in engineering plastic - Easy replaceable gate bush - 고속 사출 성형시 적용에 적합 - 엔지니어링 플라스틱의 성형조건 개선 - 게이트 부시 교환이 용이
 TAC·TLC type	- Simple construction for direct injection with minimized sprue (TAC) - Gate bush is assembled to nozzle body by tapping - Easy assembly and disassembly in a mold - Simple application - 제품면에 직접 성형이 가능한 단순 구조 (TLC) - 게이트 부시가 노즐에 나사로 체결되는 구조 - 금형과 HRS의 분해 조립이 용이함	- Small sprue will be added on your product - Gate area machining of a mold is simple - Simple machining of gate area in a mold(TLC) The length of sprue can be adjusted by customer(TLC) - 금형의 게이트 부위 가공이 용이함 - 게이트자국 및 게이트 부시자국이 제품에 나타남 - 게이트 부시 교환용이 - 스프루가 발생함으로 성형 후 후공정 작업이 필요 - 열에 민감한 수지에는 적용이 제한적임
 TOE type	- Simple construction for direct injection with minimized sprue - Gate bush with a adjustable sprue is assembled to nozzle body by tapping - Easy assembly and disassembly in a mold - 직접 성형용 단순 구조(연장형) - 스프루가 발생하는 Semi hot runner구조 - 스프루 길이조절 가능 - 게이트 부시가 노즐에 나사로 체결되는 구조 - 금형과 HRS의 분해 조립이 용이함	- Simple application - Easy color change - Restricted application to heat-sensitive material - Simple machining of gate area in a mold - The length of sprue can be adjusted by customer - Wide application, poor gate vestige and post molding operation required - 색 교환이 용이 - 적용이 폭이넓음 - 게이트 부시와 금형의 접촉 길이를 조절 할 수 있어 열에 민감한 수지에 적용 가능성이 확대됨 - 스프루의 길이 조절이 가능함 - 성형 후 후공정 작업이 필요하며, 엔지니어링 플라스틱의 Semi-hot runner에 적합

● Terminology of BALA system

시스템 구성 부품

Part by name 파트별 구성품 명칭



● Manifold unit

- ① Nozzle locator
- ② Thermocouple
- ③ Tube heater
- ④ Socket head cap bolt
- ⑤ C.P.S Ring
- ⑥ C.P.S pin guide bush
- ⑦ Manifold block
- ⑧ Sheath heater
- ⑨ End plug
- ⑩ Dowel pin
- ⑪ Dowel pad
- ⑫ Lock pin
- ⑬ Insulation pad
- ⑭ Manifold thermocouple

● Cylinder unit

- ⑮ Flat head screw
- ⑯ Cylinder cover
- ⑰ Cylinder housing
- ⑱ Piston
- ⑲ Glyd ring
- ⑳ "O" ring
- ㉑ Piston in
- ㉒ Valve pin
- ㉓ Seal ring

● Nozzle unit

- ㉔ Nozzle body
- ㉕ Tube heater
- ㉖ Lock pin
- ㉗ Thermocouple
- ㉘ Nozzle tip
- ㉙ Snap ring

● MODU system unit

- ㉚ Locating ring
- ㉛ Clamping plate
- ㉜ Spacer plate
- ㉝ Holding plate
- ㉞ Cavity plate
- ㉟ Center pin
- ㊱ Socket head cap bolt

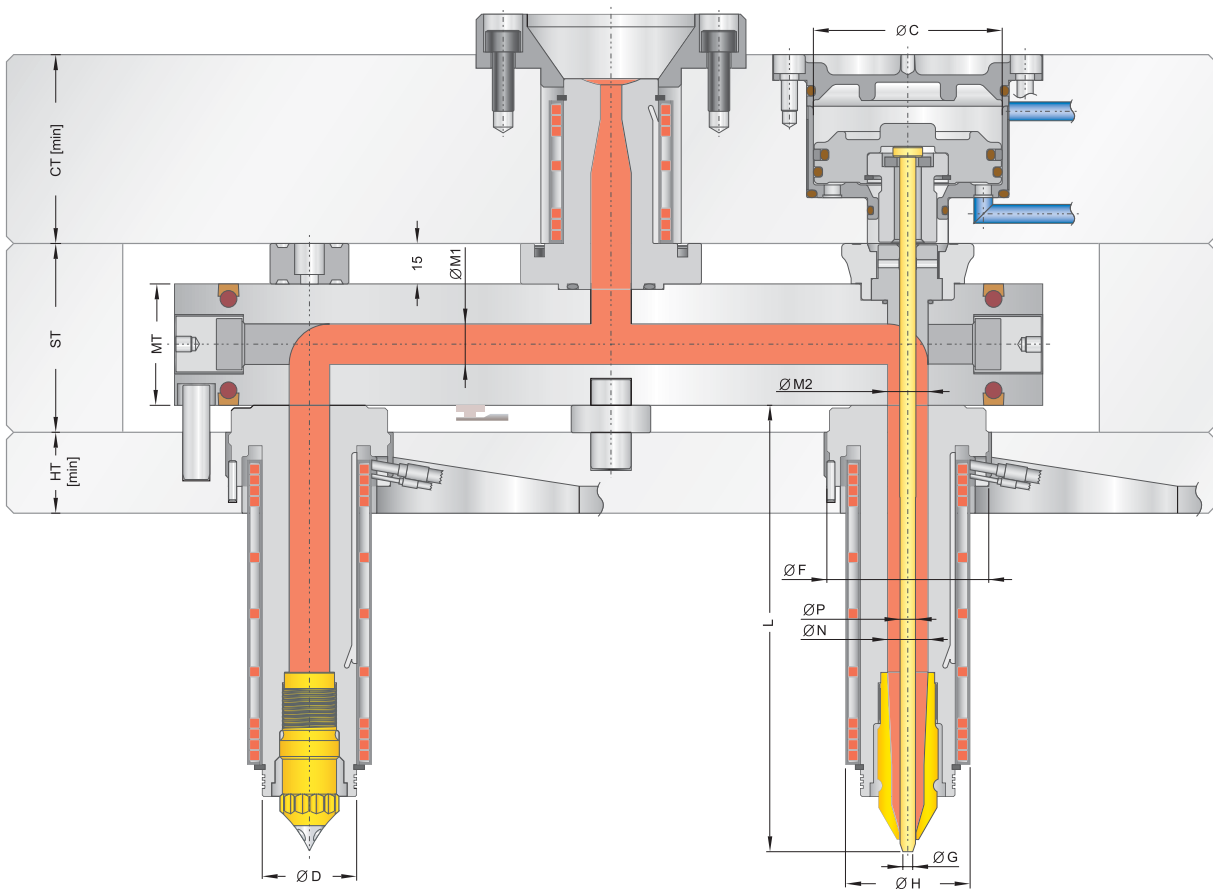
● Connecting unit

- ㊲ Connector (Signal)
- ㊳ Silencer
- ㊴ Solenoid valve
- ㊵ Sol manifold
- ㊶ Air nipple
- ㊷ Connector (Power + T/C)

● Specification of BALA system

시스템 사양

Structure and specification 구조 및 사양



- WINA System has 4 standardized sizes and each size has various gate diameters.
- Nozzle size is labelled after the Type Name (ex. BALA 25 : BALA Nozzle 25) and determines the injection volume of the nozzle.
- BALA 시스템은 4개의 표준화된 규격과 다양한 형태의 게이트 직경을 갖추고 있습니다.
- 노즐 규격은 Type명 다음에 표기되며, (예. BALA 25 : BALA Nozzle 25) 노즐의 사출량을 결정합니다.

● How to read nozzle model 노즐 모델명 보는 법

BIM - 25 - LVA - 180

BIM : BALA nozzle manifold type
 25 : Nozzle size [ØD]
 LVA : Gate bush type - [V/V]: 2 digits in VV, VA, VF
 180 : Nozzle length [L]
 Unit : mm

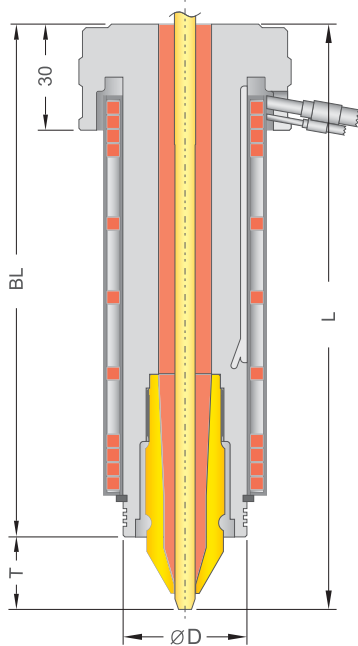
Division	BALA 18		BALA 25		BALA 35		BALA 45	
Model number	BIM-18-□□-□□□		BIM-25-□□-□□□		BIM-35-□□-□□□		BIM-45-□□-□□□	
System	Valve	Open	Valve	Open	Valve	Open	Valve	Open
Injection volume	Up to 120 gr	Up to 100 gr	Up to 240 gr	Up to 200 gr	Up to 1000 gr	Up to 800 gr	Over 1000 gr	Up to 800 gr
ØC	50	-	50	-	50, 70	-	70, 90	-
CT [min]	60	Customer's spec.	60	Customer's spec.	70	Customer's spec.	70/75(CPS90)	Customer's spec.
MT	45							
ST	70							
L	75 ~ 175		90 ~ 320		90 ~		110 ~	
Ød	18		25		35		45	
ØH	32		40		50		60	
ØF	38		50		60		70	
ØP	4	-	4	-	6	-	10	-
ØM1	8	6	10	8	15	10	16	15
ØM2, ØN	8	6	10	8	15	10	22	15
ØG	1.2/ 1.5/ 2.0	CC,CA,CF / LCA,LCF 1.5/2/2.5, 0.8/1.0/1.5	1.5/ 2.0/ 2.5	CC,CA,CF / LCA,LCF 1.0/1.5/2.0	2.5/ 3.0/ 3.5/ 4.0	CC,CA,CF / LCA,LCF 1.5/2/2.5	4/ 5/ 6/ 7/ 8	CC,CA,CF / LCA,LCF 2.0/3.0/4.0
		TAC, TLC, TOE 1.5/2.0		TAC, TLC, TOE 2.0/2.5/3.0		TAC, TLC, TOE 3.0/4.0/4.5, 3.0/3.5/4.0		TAC, TLC, TOE 4.0/5.0/6.0

● Model number of BALA nozzle

노즐 모델명

Nozzle length by heater, T/C code 히터, T/C 코드에 따른 노즐길이

Unit : mm



Unit : mm

	BALA 18	BALA 25	BALA 35	BALA 45
T	12	15	20	25

- "L" can be adjusted by order
- "L"은 고객의 요청에 따라 조정될 수 있습니다.

- Actual length of nozzle when delivered
납품시 실제 규격과 호칭 규격

Actual length of nozzle (BL) = L - ∠L - T
 $\angle L : (L - 30 - T) \times 1.2 \times e^{-5} \times (\text{Injection temp.} - \text{Mold temp.})$

납품시 실제 길이 (BL) = L - ∠L - T
 $\angle L : (L - 30 - T) \times 1.2 \times e^{-5} \times (\text{사출온도} - \text{금형온도})$

ex) BIM25W180
 Injection temp. = 250℃, Mold temp. = 50℃
 $\angle L = (180 - 30 - 15) \times 1.2 \times e^{-5} \times (250 - 50) = 0.32$
 Actual length of nozzle (BL)
 = 180 - 0.32 - 15 = 164.68

Length of "L" : Minimum=110mm Maximum=320mm
 Two heater and two T/C are applied for over "L" 320mm
 T/C type : IC or CA

길이 "L" : 최소=100mm 최대=320mm
 2단 히터는 "L"이 320mm 이상인 경우에 적용됩니다.
 T/C type : IC(J) or CA(K)

● How to read heater code

히터 모델명 보는 법

HTFR 36 25 133 0
 HTFR: Tube heater type
 36: Heater wire dia. (15: Ø1.5, 36: Ø3.6)
 25: Nozzle size (ØD)
 133: Heater length (HL)
 0: Version

● How to read thermocouple code

T/C 모델명 보는 법

NZTP CA 16 145 0
 NZTP: Pin type thermocouple
 CA: Thermocouple type (IC or CA)
 16: Thermocouple wire dia. (10: Ø1.0, 16: Ø1.6)
 145: Thermocouple length
 0: Version

Model	D	L	Heater	T/C
BIM18 - □□□ - 075	18	75	HTFR15180350	NZTP[IC,CA]100450
BIM18 - □□□ - 085		85	HTFR15180450	NZTP[IC,CA]100550
BIM18 - □□□ - 095		95	HTFR15180550	NZTP[IC,CA]100650
BIM18 - □□□ - 105		105	HTFR15180650	NZTP[IC,CA]100750
BIM18 - □□□ - 115		115	HTFR15180750	NZTP[IC,CA]100850
BIM18 - □□□ - 125		125	HTFR15180850	NZTP[IC,CA]100950
BIM18 - □□□ - 135		135	HTFR15180950	NZTP[IC,CA]101050
BIM18 - □□□ - 145		145	HTFR15181050	NZTP[IC,CA]101150
BIM18 - □□□ - 155		155	HTFR15181150	NZTP[IC,CA]101250
BIM18 - □□□ - 165		165	HTFR15181250	NZTP[IC,CA]101350
Nozzle length(L) MIN 75 ~ MAX 175				

Model	D	L	Heater	T/C
BIM 25 - □□□ - 090	25	90	HTFR36250430	NZTP[IC,CA]160550
BIM 25 - □□□ - 100		100	HTFR36250530	NZTP[IC,CA]160650
BIM 25 - □□□ - 110		110	HTFR36250630	NZTP[IC,CA]160750
BIM 25 - □□□ - 120		120	HTFR36250730	NZTP[IC,CA]160850
BIM 25 - □□□ - 130		130	HTFR36250830	NZTP[IC,CA]160950
BIM 25 - □□□ - 140		140	HTFR36250930	NZTP[IC,CA]161050
BIM 25 - □□□ - 150		150	HTFR362510 30	NZTP[IC,CA]161150
BIM 25 - □□□ - 160		160	HTFR36250430	NZTP[IC,CA]161250
BIM 25 - □□□ - 170		170	HTFR36250430	NZTP[IC,CA]161350
BIM 25 - □□□ - 180		180	HTFR36250430	NZTP[IC,CA]161450
Nozzle length(L) MIN 90 ~ MAX 320				

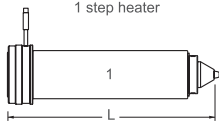
Model	D	L	Heater	T/C
BIM 35 - □□□ - 090	35	90	HTFR36350380	NZTP[IC,CA]160450
BIM 35 - □□□ - 100		100	HTFR36350480	NZTP[IC,CA]160550
BIM 35 - □□□ - 110		110	HTFR36350580	NZTP[IC,CA]160650
BIM 35 - □□□ - 120		120	HTFR36350680	NZTP[IC,CA]160750
BIM 35 - □□□ - 130		130	HTFR36350780	NZTP[IC,CA]160850
BIM 35 - □□□ - 140		140	HTFR36350880	NZTP[IC,CA]160950
BIM 35 - □□□ - 150		150	HTFR36350980	NZTP[IC,CA]161050
BIM 35 - □□□ - 160		160	HTFR36351080	NZTP[IC,CA]161150
BIM 35 - □□□ - 170		170	HTFR36351180	NZTP[IC,CA]161250
BIM 35 - □□□ - 180		180	HTFR36351280	NZTP[IC,CA]161350
Nozzle length(L) MIN 90 ~ MAX 390				

Model	D	L	Heater	T/C
BIM 45 - □□□ - 110	45	110	HTFR36450530	NZTP[IC,CA]160550
BIM 45 - □□□ - 120		120	HTFR36450630	NZTP[IC,CA]160650
BIM 45 - □□□ - 130		130	HTFR36450730	NZTP[IC,CA]160750
BIM 45 - □□□ - 140		140	HTFR36450830	NZTP[IC,CA]160850
BIM 45 - □□□ - 150		150	HTFR36450930	NZTP[IC,CA]160950
BIM 45 - □□□ - 160		160	HTFR36451030	NZTP[IC,CA]161050
BIM 45 - □□□ - 170		170	HTFR36451130	NZTP[IC,CA]161150
BIM 45 - □□□ - 180		180	HTFR36451230	NZTP[IC,CA]161250
BIM 45 - □□□ - 190		190	HTFR36451330	NZTP[IC,CA]161350
BIM 45 - □□□ - 200		200	HTFR36451430	NZTP[IC,CA]161450
Nozzle length(L) MIN 100 ~ MAX 320				

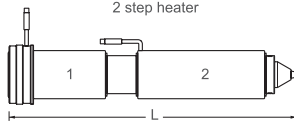
● Long size nozzle(BALA 35, 45)

장노즐 규격

Step heater application 히터 적용



1 step heater

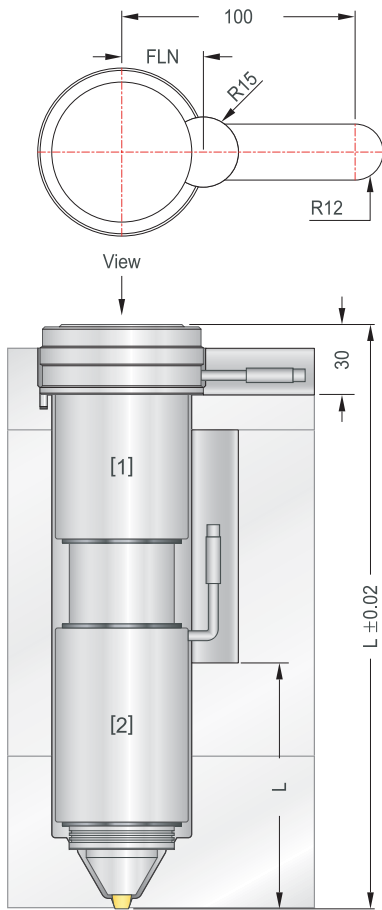


2 step heater

Unit : mm

		Heater 1	Heater 2
Valve	BALA 35	~ 320	320 ~
	BALA 45		
Open	BALA 35		
	BALA 45		

Long size BALA nozzle 장노즐 코드



Unit : mm

	FLN
BALA 35	25
BALA 45	30

Nozzle model(L)	L	Heater code 1	T/C code 1	Heater code 2	T/C code 2
BIM - 35 - □□□305.51~315.5	170	HTFR36350680	NZTP[IC,CA]160950	HTSD36351580	NZTP[CA,IC]161750
BIM - 35 - □□□315.51~325.5		HTFR36350780	NZTP[IC,CA]161050		
BIM - 35 - □□□325.51~335.5		HTFR36350880	NZTP[IC,CA]161150		
BIM - 35 - □□□335.51~345.5		HTFR36350980	NZTP[IC,CA]161250		
BIM - 35 - □□□345.51~355.5		HTFR36351080	NZTP[IC,CA]161350		
BIM - 35 - □□□355.51~365.5		HTFR36351180	NZTP[IC,CA]161450		
BIM - 35 - □□□365.51~375.5		HTFR36351280	NZTP[IC,CA]161550		
BIM - 35 - □□□375.51~385.5		HTFR36351380	NZTP[IC,CA]161650		
BIM - 35 - □□□385.51~395.5		HTFR36351480	NZTP[IC,CA]161750		
BIM - 35 - □□□395.51~405.5		HTFR36351580	NZTP[IC,CA]161850		
BIM - 35 - □□□405.51~415.5	HTFR36351180	NZTP[IC,CA]161450			
BIM - 35 - □□□415.51~425.5	HTFR36351280	NZTP[IC,CA]161550			
BIM - 35 - □□□425.51~435.5	HTFR36351380	NZTP[IC,CA]161650			
BIM - 35 - □□□435.51~445.5	HTFR36351480	NZTP[IC,CA]161750			
BIM - 35 - □□□445.51~455.5	HTFR36351580	NZTP[IC,CA]161850			
BIM - 35 - □□□455.51~465.5	HTFR36351680	NZTP[IC,CA]161950			
BIM - 35 - □□□465.51~475.5	HTFR36351780	NZTP[IC,CA]162050			
BIM - 35 - □□□475.51~485.5	HTFR36351880	NZTP[IC,CA]162150			
BIM - 35 - □□□485.51~495.5	HTFR36351980	NZTP[IC,CA]162250	HTSD36352580	NZTP[CA,IC]162750	
BIM - 35 - □□□495.51~505.5	HTFR36352080	NZTP[IC,CA]162350			
BIM - 35 - □□□505.51~515.5	HTFR36351680	NZTP[IC,CA]161950			
BIM - 35 - □□□515.51~525.5	HTFR36351780	NZTP[IC,CA]162050			
BIM - 35 - □□□525.51~535.5	HTFR36351880	NZTP[IC,CA]162150			
BIM - 35 - □□□535.51~545.5	HTFR36351980	NZTP[IC,CA]162250			
BIM - 35 - □□□545.51~555.5	HTFR36352080	NZTP[IC,CA]162350			
BIM - 35 - □□□555.51~565.5	HTFR36352180	NZTP[IC,CA]162450			
BIM - 35 - □□□565.51~575.5	HTFR36352280	NZTP[IC,CA]162550			
BIM - 35 - □□□575.51~585.5	HTFR36352380	NZTP[IC,CA]162650			HTSD36451530
BIM - 35 - □□□585.51~595.5	HTFR36352480	NZTP[IC,CA]162750			
BIM - 35 - □□□595.51~605.5	HTFR36352580	NZTP[IC,CA]162850			

Nozzle model(L)	L	Heater code 1	T/C code 1	Heater code 2	T/C code 2
BIM - 45 - □□□295.51~305.5	175	HTFR36450630	NZTP[IC,CA]160950	HTSD36451530	NZTP[CA,IC]161750
BIM - 45 - □□□305.51~315.5		HTFR36450730	NZTP[IC,CA]161050		
BIM - 45 - □□□315.51~325.5		HTFR36450830	NZTP[IC,CA]161150		
BIM - 45 - □□□325.51~335.5		HTFR36450930	NZTP[IC,CA]161250		
BIM - 45 - □□□335.51~345.5		HTFR36451030	NZTP[IC,CA]161350		
BIM - 45 - □□□345.51~355.5		HTFR36451130	NZTP[IC,CA]161450		
BIM - 45 - □□□355.51~365.5		HTFR36451230	NZTP[IC,CA]161550		
BIM - 45 - □□□365.51~375.5		HTFR36451330	NZTP[IC,CA]161650		
BIM - 45 - □□□375.51~385.5		HTFR36451430	NZTP[IC,CA]161750		
BIM - 45 - □□□385.51~395.5		HTFR36451530	NZTP[IC,CA]161850		
BIM - 45 - □□□395.51~405.5	HTFR36451130	NZTP[IC,CA]161450			
BIM - 45 - □□□405.51~415.5	HTFR36451230	NZTP[IC,CA]161550			
BIM - 45 - □□□415.51~425.5	HTFR36451330	NZTP[IC,CA]161650			
BIM - 45 - □□□425.51~435.5	HTFR36451430	NZTP[IC,CA]161750			
BIM - 45 - □□□435.51~445.5	HTFR36451530	NZTP[IC,CA]161850			
BIM - 45 - □□□445.51~455.5	HTFR36451630	NZTP[IC,CA]161950			
BIM - 45 - □□□455.51~465.5	HTFR36451730	NZTP[IC,CA]162050			
BIM - 45 - □□□465.51~475.5	HTFR36451830	NZTP[IC,CA]162150			
BIM - 45 - □□□475.51~485.5	HTFR36451930	NZTP[IC,CA]162250	HTSD36452530	NZTP[CA,IC]162750	
BIM - 45 - □□□485.51~495.5	HTFR36452030	NZTP[IC,CA]162350			
BIM - 45 - □□□495.51~505.5	HTFR36451630	NZTP[IC,CA]161950			
BIM - 45 - □□□505.51~515.5	HTFR36451730	NZTP[IC,CA]162050			
BIM - 45 - □□□515.51~525.5	HTFR36451830	NZTP[IC,CA]162150			
BIM - 45 - □□□525.51~535.5	HTFR36451930	NZTP[IC,CA]162250			
BIM - 45 - □□□535.51~545.5	HTFR36452030	NZTP[IC,CA]162350			
BIM - 45 - □□□545.51~555.5	HTFR36452130	NZTP[IC,CA]162450			
BIM - 45 - □□□555.51~565.5	HTFR36452230	NZTP[IC,CA]162550			
BIM - 45 - □□□565.51~575.5	HTFR36452330	NZTP[IC,CA]162650			
BIM - 45 - □□□575.51~585.5	HTFR36452430	NZTP[IC,CA]162750			
BIM - 45 - □□□585.51~595.5	HTFR36452530	NZTP[IC,CA]162850			

● Long size nozzle(BALA 35, 45 open) - TAC, TLC, TOE

장노즐 규격

Step heater application 히터 적용

- In case of CC type of open system, refer to long size valve type nozzle table.(Refer to page 10)
- Nozzle longer than 320mm will have 2 heaters(Standard heater 1+ 2nd heater 2)
- 오픈 시스템의 CC타입은 Long 사이즈 밸브 타입의 노즐 테이블을 참조하십시오.(10페이지 참조)
- 320mm이상의 노즐에는 두개의 히터가 설치됩니다.(표준히터 1+ 2단히터 2)

Long size BALA nozzle 장노즐 코드

Unit : mm

Unit : mm	
	FLN
BALA 35	25
BALA 45	30

Nozzle model(L)	L	Heater code 1	T/C code 1	Heater code 2	T/C code 2
BIM - 35 - 305,51~315,5	170	HTFR36350680	NZTP[IC,CA]160950	HTSD36351580	NZTP[CA,IC]161750
BIM - 35 - 315,51~325,5		HTFR36350780	NZTP[IC,CA]161050		
BIM - 35 - 325,51~335,5		HTFR36350880	NZTP[IC,CA]161150		
BIM - 35 - 335,51~345,5		HTFR36350980	NZTP[IC,CA]161250		
BIM - 35 - 345,51~355,5		HTFR36351080	NZTP[IC,CA]161350		
BIM - 35 - 355,51~365,5		HTFR36351180	NZTP[IC,CA]161450		
BIM - 35 - 365,51~375,5		HTFR36351280	NZTP[IC,CA]161550		
BIM - 35 - 375,51~385,5		HTFR36351380	NZTP[IC,CA]161650		
BIM - 35 - 385,51~395,5		HTFR36351480	NZTP[IC,CA]161750		
BIM - 35 - 395,51~405,5		HTFR36351580	NZTP[IC,CA]161850		
BIM - 35 - 405,51~415,5	220	HTFR36351180	NZTP[IC,CA]161450	HTSD36352080	NZTP[CA,IC]162250
BIM - 35 - 415,51~425,5		HTFR36351280	NZTP[IC,CA]161550		
BIM - 35 - 425,51~435,5		HTFR36351380	NZTP[IC,CA]161650		
BIM - 35 - 435,51~445,5		HTFR36351480	NZTP[IC,CA]161750		
BIM - 35 - 445,51~455,5		HTFR36351580	NZTP[IC,CA]161850		
BIM - 35 - 455,51~465,5		HTFR36351680	NZTP[IC,CA]161950		
BIM - 35 - 465,51~475,5		HTFR36351780	NZTP[IC,CA]162050		
BIM - 35 - 475,51~485,5		HTFR36351880	NZTP[IC,CA]162150		
BIM - 35 - 485,51~495,5		HTFR36351980	NZTP[IC,CA]162250		
BIM - 35 - 495,51~505,5		HTFR36352080	NZTP[IC,CA]162350		
BIM - 35 - 505,51~515,5	270	HTFR36351680	NZTP[IC,CA]161950	HTSD36352580	NZTP[CA,IC]162750
BIM - 35 - 515,51~525,5		HTFR36351780	NZTP[IC,CA]162050		
BIM - 35 - 525,51~535,5		HTFR36351880	NZTP[IC,CA]162150		
BIM - 35 - 535,51~545,5		HTFR36351980	NZTP[IC,CA]162250		
BIM - 35 - 545,51~555,5		HTFR36352080	NZTP[IC,CA]162350		
BIM - 35 - 555,51~565,5		HTFR36352180	NZTP[IC,CA]162450		
BIM - 35 - 565,51~575,5		HTFR36352280	NZTP[IC,CA]162550		
BIM - 35 - 575,51~585,5		HTFR36352380	NZTP[IC,CA]162650		
BIM - 35 - 585,51~595,5		HTFR36352480	NZTP[IC,CA]162750		
BIM - 35 - 595,51~605,5		HTFR36352580	NZTP[IC,CA]162850		

Nozzle model(L)	L	Heater code 1	T/C code 1	Heater code 2	T/C code 2
BIM - 45 - 295,51~305,5	175	HTFR36450630	NZTP[IC,CA]160950	HTSD36451530	NZTP[CA,IC]161750
BIM - 45 - 305,51~315,5		HTFR36450730	NZTP[IC,CA]161050		
BIM - 45 - 315,51~325,5		HTFR36450830	NZTP[IC,CA]161150		
BIM - 45 - 325,51~335,5		HTFR36450930	NZTP[IC,CA]161250		
BIM - 45 - 335,51~345,5		HTFR36451030	NZTP[IC,CA]161350		
BIM - 45 - 345,51~355,5		HTFR36451130	NZTP[IC,CA]161450		
BIM - 45 - 355,51~365,5		HTFR36451230	NZTP[IC,CA]161550		
BIM - 45 - 365,51~375,5		HTFR36451330	NZTP[IC,CA]161650		
BIM - 45 - 375,51~385,5		HTFR36451430	NZTP[IC,CA]161750		
BIM - 45 - 385,51~395,5		HTFR36451530	NZTP[IC,CA]161850		
BIM - 45 - 395,51~405,5	225	HTFR36451130	NZTP[IC,CA]161450	HTSD36452030	NZTP[CA,IC]162250
BIM - 45 - 405,51~415,5		HTFR36451230	NZTP[IC,CA]161550		
BIM - 45 - 415,51~425,5		HTFR36451330	NZTP[IC,CA]161650		
BIM - 45 - 425,51~435,5		HTFR36451430	NZTP[IC,CA]161750		
BIM - 45 - 435,51~445,5		HTFR36451530	NZTP[IC,CA]161850		
BIM - 45 - 445,51~455,5		HTFR36451630	NZTP[IC,CA]161950		
BIM - 45 - 455,51~465,5		HTFR36451730	NZTP[IC,CA]162050		
BIM - 45 - 465,51~475,5		HTFR36451830	NZTP[IC,CA]162150		
BIM - 45 - 475,51~485,5		HTFR36451930	NZTP[IC,CA]162250		
BIM - 45 - 485,51~495,5		HTFR36452030	NZTP[IC,CA]162350		
BIM - 45 - 495,51~505,5	275	HTFR36451630	NZTP[IC,CA]161950	HTSD36452530	NZTP[CA,IC]162750
BIM - 45 - 505,51~515,5		HTFR36451730	NZTP[IC,CA]162050		
BIM - 45 - 515,51~525,5		HTFR36451830	NZTP[IC,CA]162150		
BIM - 45 - 525,51~535,5		HTFR36451930	NZTP[IC,CA]162250		
BIM - 45 - 535,51~545,5		HTFR36452030	NZTP[IC,CA]162350		
BIM - 45 - 545,51~555,5		HTFR36452130	NZTP[IC,CA]162450		
BIM - 45 - 555,51~565,5		HTFR36452230	NZTP[IC,CA]162550		
BIM - 45 - 565,51~575,5		HTFR36452330	NZTP[IC,CA]162650		
BIM - 45 - 575,51~585,5		HTFR36452430	NZTP[IC,CA]162750		
BIM - 45 - 585,51~595,5		HTFR36452530	NZTP[IC,CA]162850		

Unit : mm

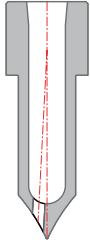
	FLN
BALA 35	25
BALA 45	30

● Tip of BALA nozzle

노즐 팁

Code of BALA tip 팁 코드

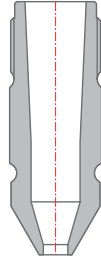
TC insert tip



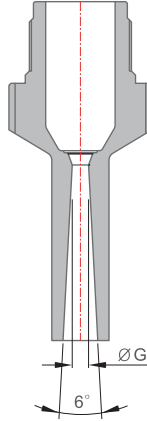
CC type tip



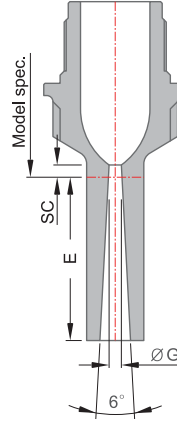
VV type tip



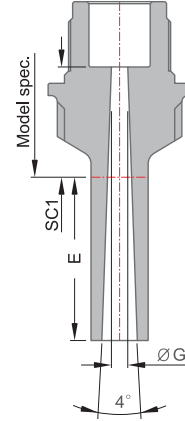
TVL tip bush



TLC tip bush



TOE tip bush



	TC insert tip code	CC tip code	W tip code		ØG	SC	SC1	TOE bush code	TLC bush code	TVL bush code
BALA 18	BATGOC180354	BATGCC180463	BATGVV180440	BALA 18	1.5	2.0	17.9	BABTOE180151	BABTLC180151	-
BALA 25	BATGOC250444	BATGCC250552	BATGVV250510	BALA 25	2.0	-	-	BABTOE180201	BABTLC180201	-
BALA 35	BATGOC350584	BATGCC350662	BATGVV350623	BALA 25	1.5	-	-	-	-	BABTVL250150
BALA 45	BATGOC450752	BATGCC450771	BATGVV450712	BALA 25	2.0	2.5	21.5	BABTOE250201	BABTLC250201	BABTVL250200
				BALA 25	2.5	2.5	21.5	BABTOE250251	BABTLC250251	BABTVL250250
				BALA 25	3.0	-	-	BABTOE250301	BABTLC250301	-
				BALA 35	2.5	-	-	-	-	BABTVL350250
				BALA 35	3.0	3.0	-	BABTOE350301	BABTLC350301	BABTVL350300
				BALA 35	3.5	-	27	-	-	BABTVL350350
				BALA 35	4.0	3.0	-	BABTOE350351	BABTLC350401	BABTVL350400
				BALA 35	4.5	3.0	-	BABTOE350401	BABTLC350451	-
				BALA 45	4.0	-	-	BABTOE450401	BABTLC450401	-
				BALA 45	5.0	7.0	36	BABTOE450501	BABTLC450501	-
				BALA 45	6.0	-	-	BABTOE450601	BABTLC450601	-

TC insert tip

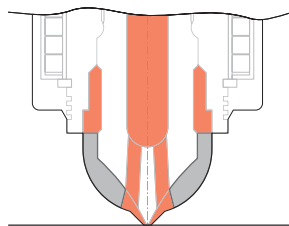
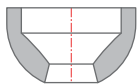
- Material : Copper alloy
- Suitable for general resin
- 원재료 : Copper alloy
- 범용수지에 적합

CC type tip

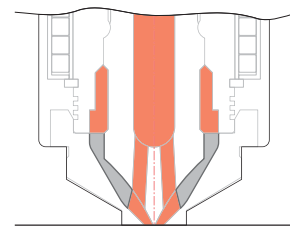
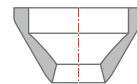
- Material : Copper alloy + Special insert
- Suitable for general resin and also for abrasive or corrosive resin
- 원재료 : Copper alloy + Special insert
- 범용수지에 적합하고 내마모성과 부식성이 수지에 적합합니다.

Code of BALA seal cap 실캡 코드

CC type



CT type



	CC type	CT type	VV type
BALA 18	BACCSC180140	BACTSC180140	BAVVSC180□□0
BALA 25	BACCSC250220	BACTSC250200	BAVVSC250□□0
BALA 35	BACCSC350280	BACTSC350280	BAVVSC350□□0
BALA 45	BACCSC450380	BACTSC450350	BAVVSC450□□0

- □□는 GateØ→ ex)BALA 25 GateØ2.0 = BAVVSC250200
- In case of open CC type tip, seal cap can be added to the end of tip to make color easy.
- Seal cap is an optional item, which will be supplied only by request.
- 오픈 CC타입의 Tip을 사용할 경우에 색상교환을 용이하게 하기 위하여 Tip 끝단에 Seal cap을 적용할 수 있습니다.
- Seal cap은 옵션 품목이며, 주문에 의하여 별도 판매 됩니다.

● Pneumatic cylinder specification of BALA valve

밸브용 공압 실린더 사양

Pneumatic cylinder O-ring code name 공압 실린더 "O"링 코드명

NO.	Position		CPS50□□GP code	CPS70□□GP code	CPS90□□GP code	ELS50□□GP code
1	Cover		ACRRAV261350	ACRRAV352310	ACRRAV352370	ACRRAV261350
2	Piston	Upper side	ACRGSO440500	ACRGSO440700	ACRGSO440900	ACRGSO460500
3		Lower side	ACRRAV352220	ACRRAV352280	ACRRAV533360	ACRRAV261300
4			ACRRAV352230	ACRRAV352300	ACRRAV352360	ACRRAV352230
5	Bottom		ACRRAV261360	ACRRAV352320	ACRRAV352380	ACRRAV261350
6	Housing		ACRRAV261160	ACRRAV261200	ACRRAV261200	-

Pneumatic cylinder by valve pin size 공압 실린더 밸브 핀 크기

Unit : mm

● How to read pneumatic cylinder model

공압 실린더 모델명 보는 법

CPS - 50 - 04

Valve pin diameter (04,06,10)
Cylinder size (ØC : 50,70,90)
Valve cylinder type (CPS, ELS)

Cylinder model	Valve pin	Nozzle model
CPS5004	Ø 4	BALA 18, 25
ELS5004	Ø 4	BALA 18, 25
CPS5006	Ø 6	BALA 35
CPS7006	Ø 6	BALA 35
CPS7010	Ø 10	BALA 45
CPS9010	Ø 10	BALA 45

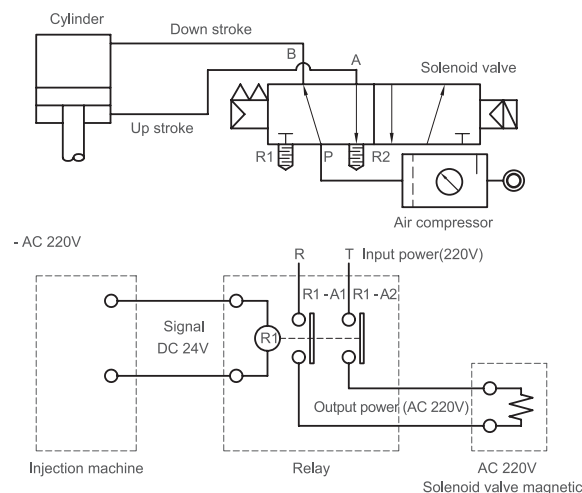
Pneumatic circuit 공압 회로

Pneumatic solenoid valve input voltage 공압 솔레노이드 밸브 입력 전압 :
DC 24V or AC220(YUDO STD)

- Output power must be the same as the voltage for solenoid valve.
- Relay must be installed between injection machine and solenoid valve for valve gate hot runner system in case of using AC 220V.

- 사출 신호의 출력 전압은 반드시 핫러너의 솔레노이드 밸브 마그네틱의 입력 전압과 동일해야 합니다.
- 솔레노이드 밸브의 마그네틱 입력 전압이 AC 220V일 경우에는 사출기와 솔레노이드 밸브 사이에 반드시 릴레이를 설치하여야 합니다.

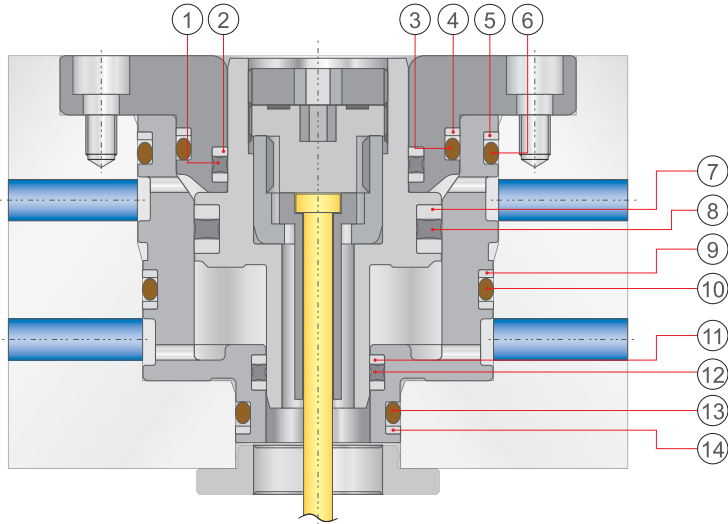
- Solenoid valve for valve gate hot runner system (2-Position single)
- 밸브 게이트 핫 러너 시스템용 솔레노이드 밸브 (2-위치 단동식)



● Hydraulic cylinder specification of BALA valve

밸브용 유압 실린더 사양

Hydraulic cylinder O-ring code name 유압 실린더 "O"링 코드명



NO.	VCH 78 □□ GH O-ring code
1	ACQRRAR042200
2	ACRBU3200350
3	ACRRRAV352250
4	Back-up ring
5	Back-up ring
6	ACRRRAV352300
7	ACRBU4900382
8	ACQRRAR043250
9	Back-up ring
10	ACRRRAV352290
11	ACRBU3200200
12	ACQRRAR042110
13	ACRRRAV352140
14	Back-up ring

Hydraulic cylinder by valve pin size 유압 실린더 밸브 핀 크기

Unit : mm

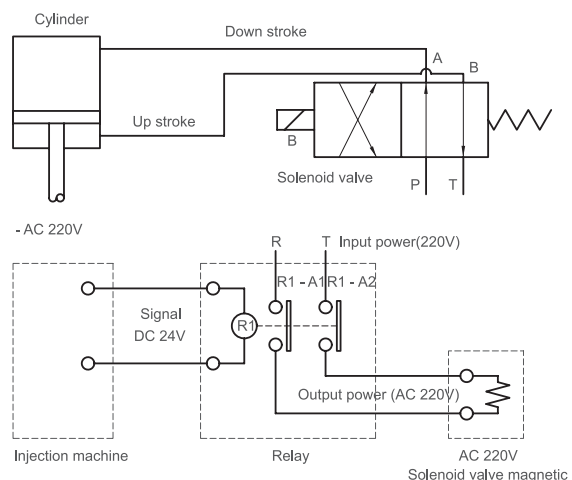
Cylinder model	Valve pin	Nozzle model
VCH 78 06	Ø6	BALA 35
VCH 78 06 S	Ø6	BALA 35
VCH 78 10	Ø10	BALA 45
VCH 78 10 S	Ø10	BALA 45

- VCH 78 □□ S is cylinder with piston position signal.
- VCH 78□□ S 는 피스톤 위치 센서가 장치되어 있습니다.

Hydraulic circuit 유압 회로

Hydraulic solenoid valve input voltage 유압 솔레노이드 밸브 입력 전압 :
DC 24V or AC220 (YUDO STD)

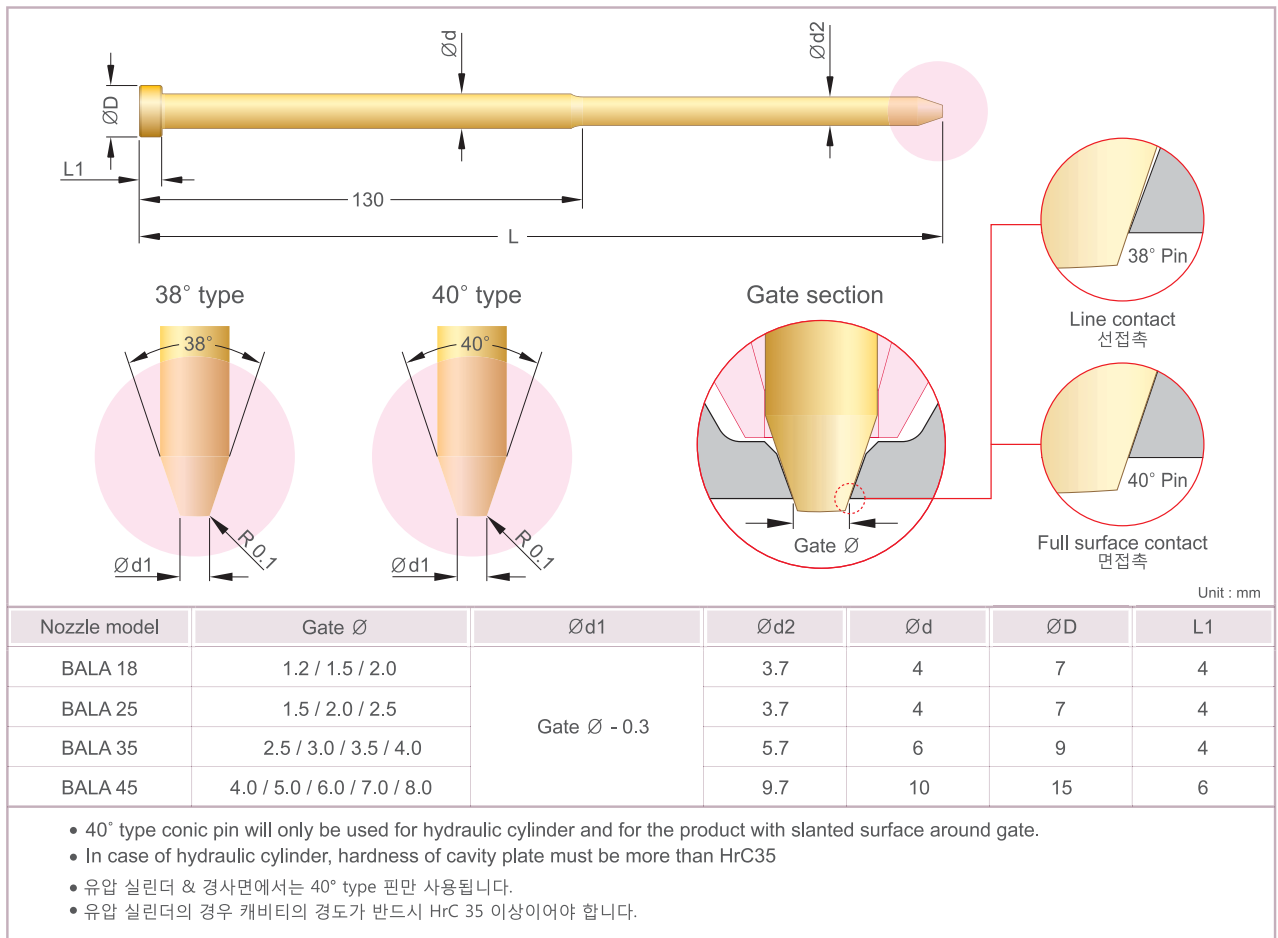
- Output power must be the same as the voltage for solenoid valve.
- Relay must be installed between injection machine and solenoid valve for valve gate hot runner system in case of using AC 220V.
- Sequence controller for hydraulic solenoid valve has fixed voltage on manufacturing and can't be changed after the setting.
- 사출 신호의 출력 전압은 반드시 핫러너의 솔레노이드 밸브 마그네틱의 입력 전압과 동일해야 합니다.
- 솔레노이드 밸브의 마그네틱 입력 전압이 AC 220V일 경우에는 사출기와 솔레노이드 밸브 사이에 반드시 릴레이를 설치하여야 합니다.
- 유압 솔레노이드 밸브용 시퀀스 컨트롤러는 제작시 출력 전압이 고정되며, 변경이 불가능합니다.
- Solenoid valve for valve gate hot runner system (2-position single)
- 밸브 게이트 핫 러너 시스템용 솔레노이드 밸브 (2-위치 단동식)
- Hydraulic pressure into the cylinder can be controlled by a relief valve. (Recommendable pressure : 30bar)
- 실린더로 유입되는 작동유의 압력은 감압밸브에 의해 압력이 조절이 가능합니다. (적정 압력 : 30bar)



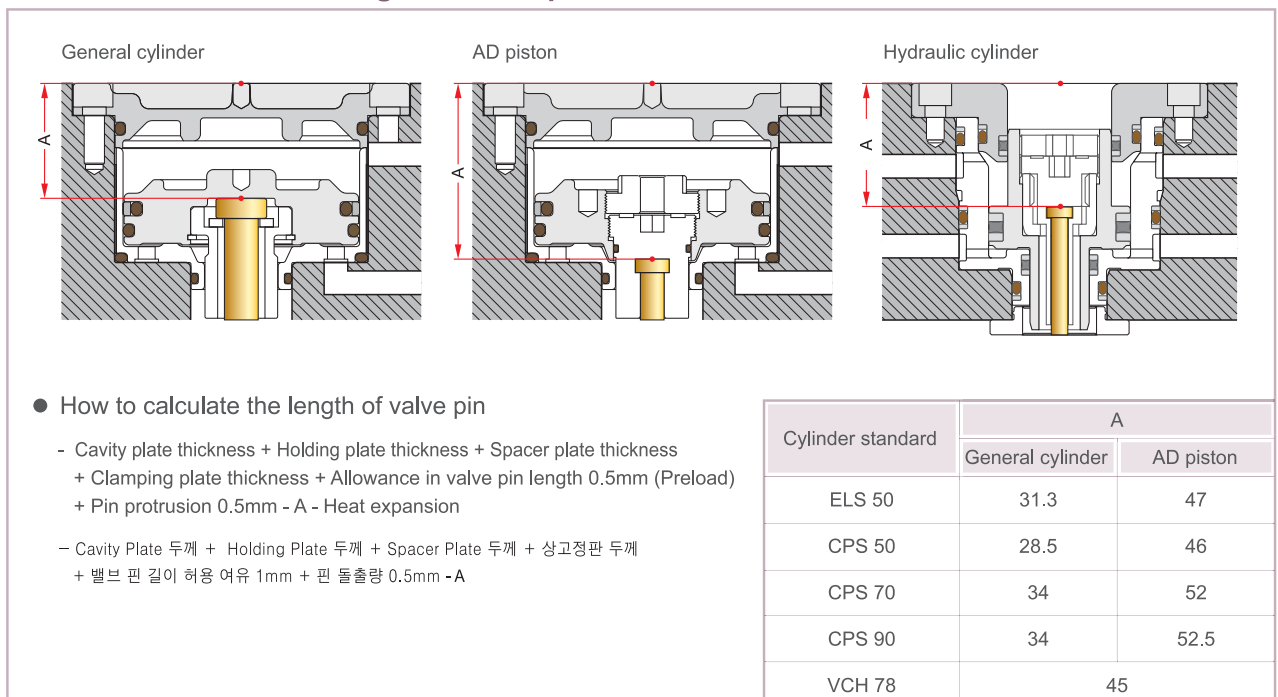
● Pin specification of BALA valve

밸브 핀 사양

Tapper type valve pin (VP type)



How to calculate the length of valve pin 밸브핀 길이 산출법

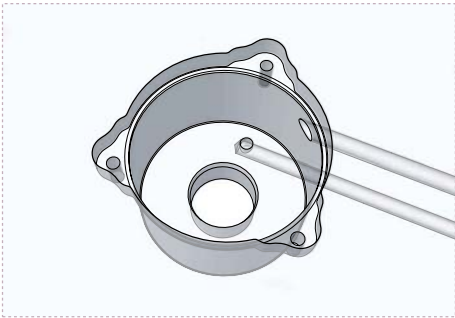


● Mold machining guide of BALA

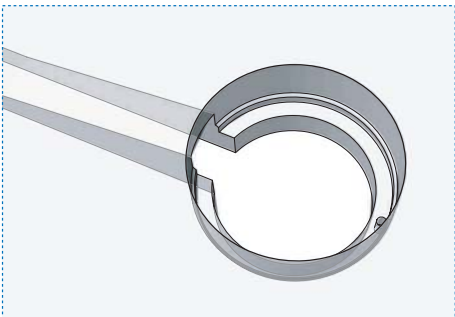
몰드 가공 가이드

Section area

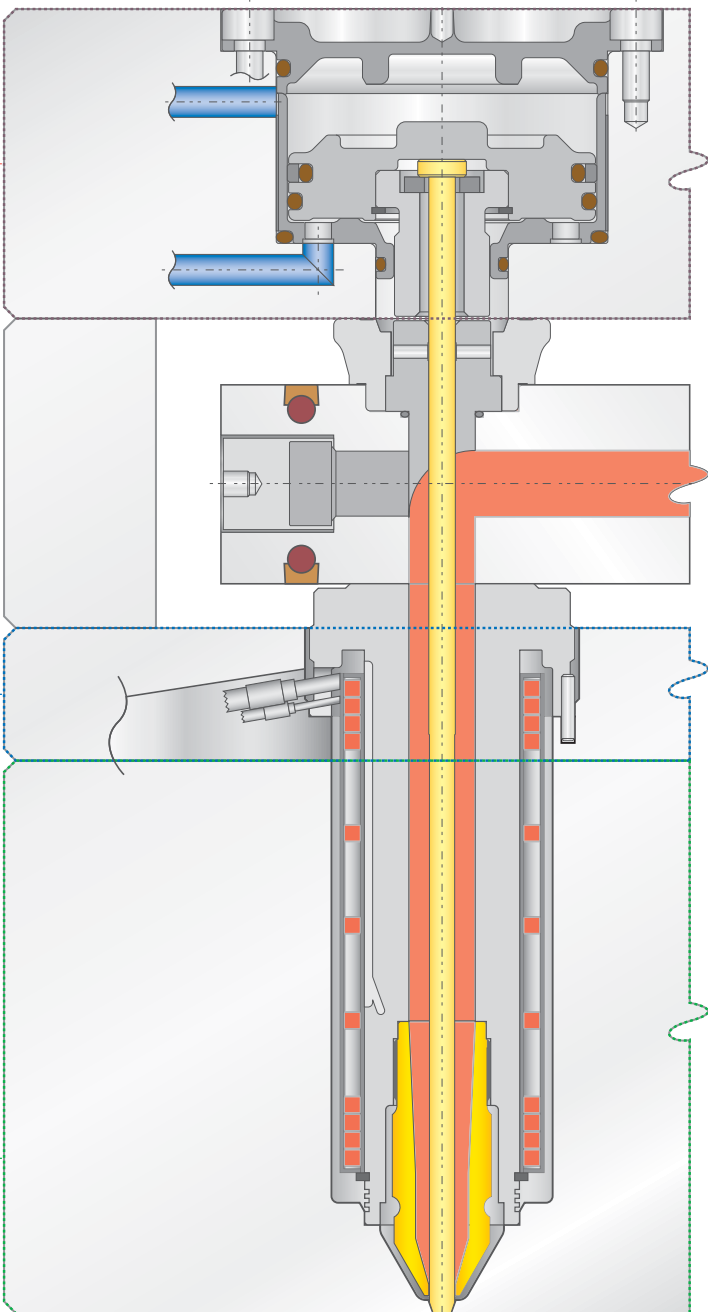
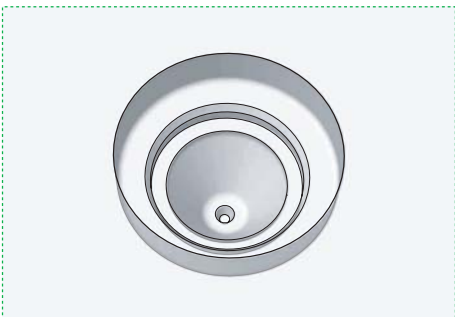
Cylinder area



Flange area



Gate area

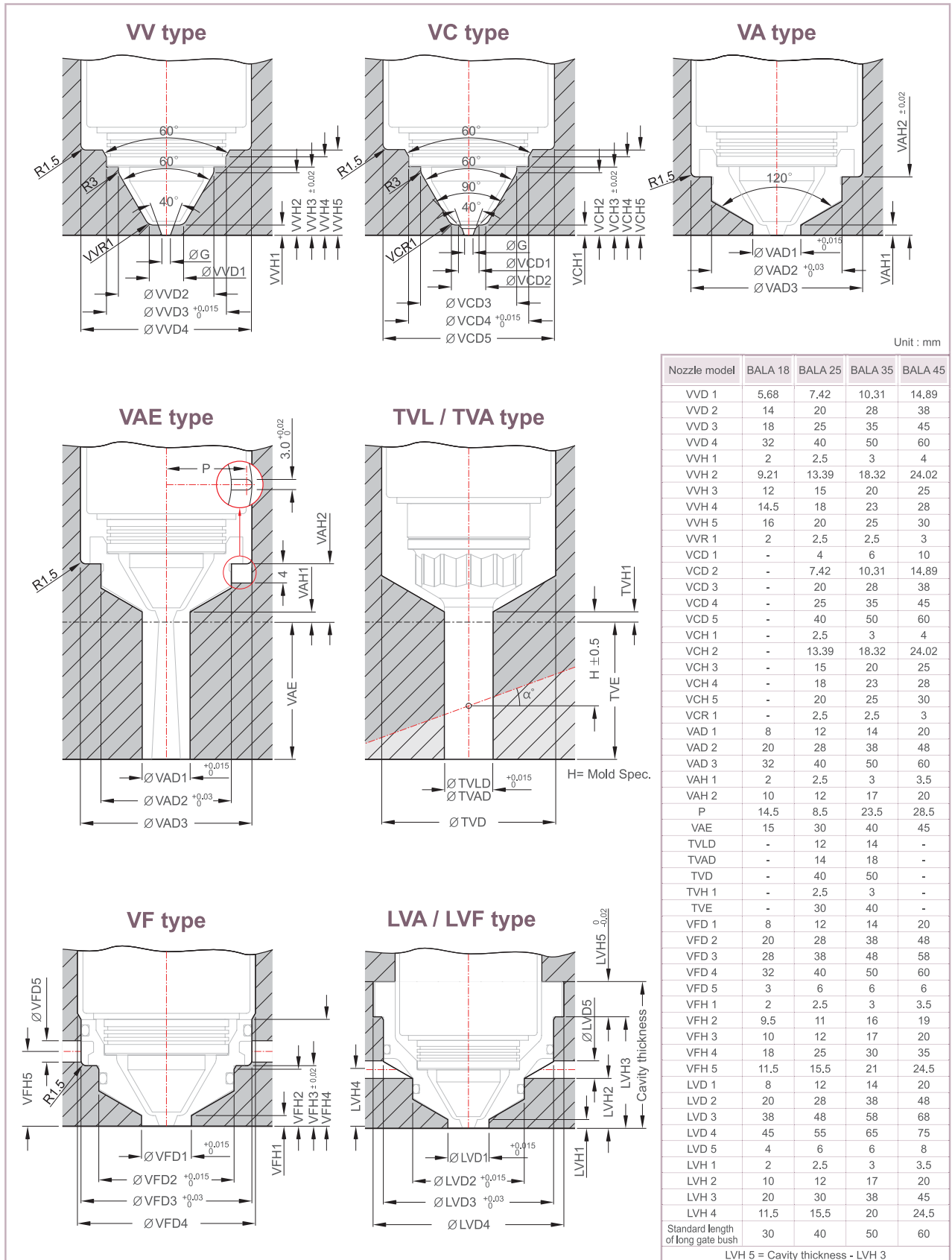


Type	Mold area	Cylinder	Flange	Gate
MODU (Hot half)		YUDO	YUDO	Customer
HRS (M/F + Nozzle)		Customer	Customer	Customer

● Gate area machining of BALA

게이트 가공도

Valve gate 밸브 게이트

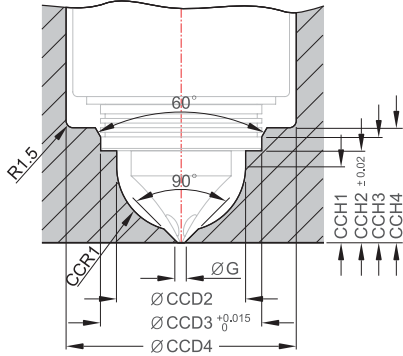


● Gate area machining of BALA

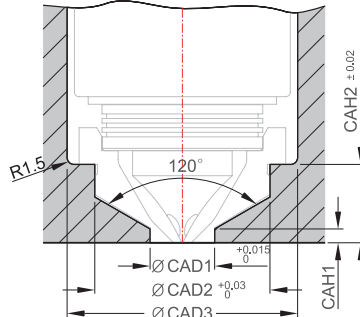
게이트 가공도

Open gate 오픈 게이트

CC type

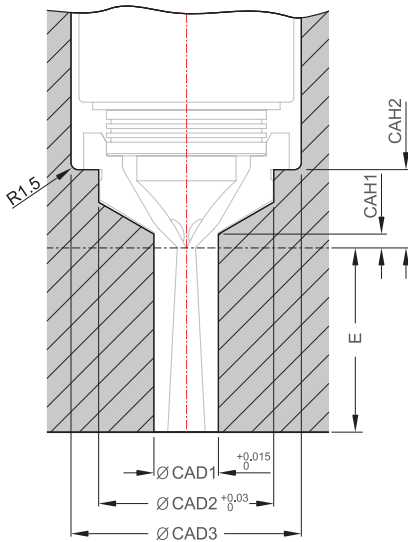


CA type

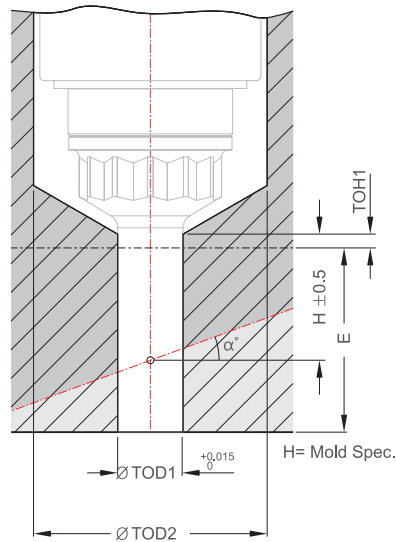


Unit : mm

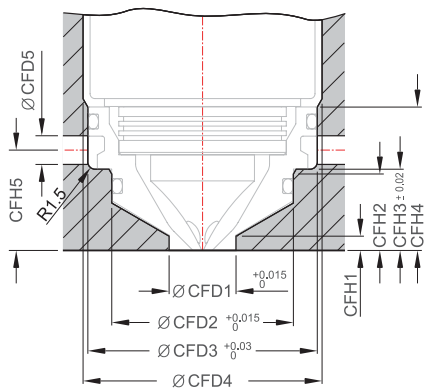
CE type



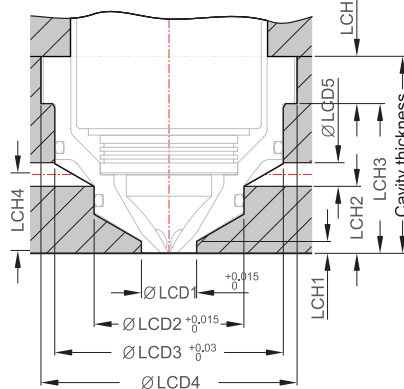
TLC, TOE type



CF type



LCA / LCF type



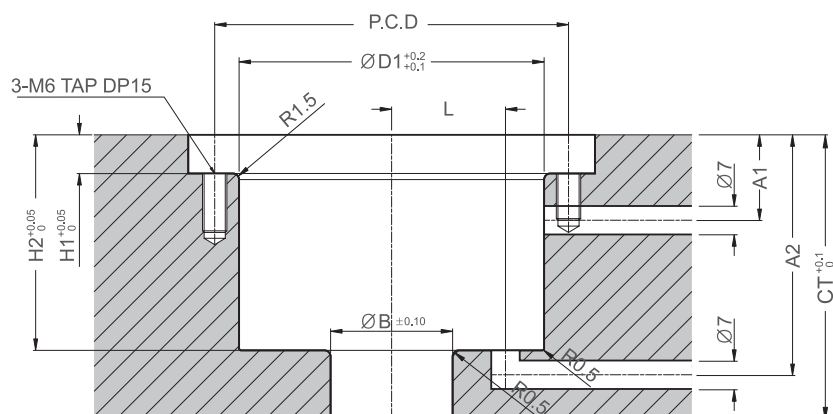
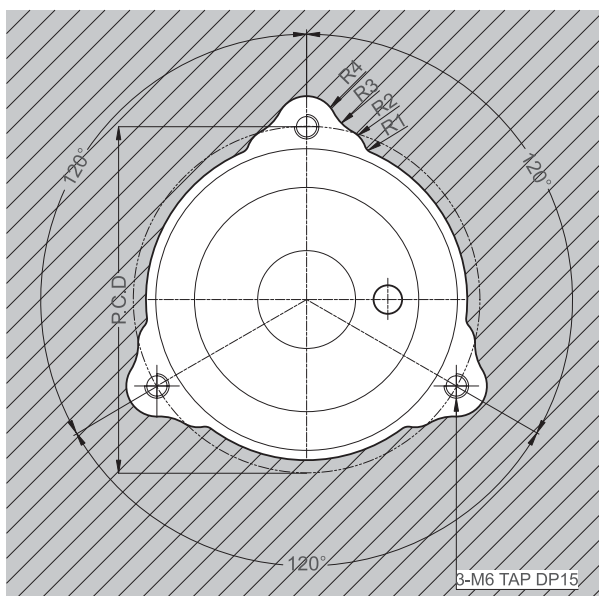
Nozzle model	BALA 18	BALA 25	BALA 35	BALA 45
CCD 1	14	20	28	38
CCD 2	18	25	35	45
CCD 3	32	40	50	60
CCH 1	9	12	16.5	22.5
CCH 2	12	15	20	25
CCH 3	14.5	18	23	28
CCH 4	16	20	25	30
CCR 1	7	10	14	19
CLD 1	6.72	-	-	-
CLD 2	9.67	-	-	-
CLD 3	14	-	-	-
CLD 4	18	-	-	-
CLD 5	32	-	-	-
CLH 1	5.28	-	-	-
CLH 2	13.37	-	-	-
CLH 3	21	-	-	-
CLH 4	23.5	-	-	-
CLH 5	25	-	-	-
CLH 6	5	-	-	-
CAD 1	8	12	14	20
CAD 2	20	28	38	48
CAD 3	32	40	50	60
CAH 1	2	2.5	3	3.5
CAH 2	10	12	17	20
E	15	30	40	45
TOD 1	8	12	14	20
TOD 2	32	40	50	60
TOH 1	2	2.5	3	3.5
E	15	30	40	45
CFD 1	8	12	14	20
CFD 2	20	28	38	48
CFD 3	28	38	48	58
CFD 4	32	40	50	60
CFD 5	3	6	6	6
CFH 1	2	2.5	3	3.5
CFH 2	9.5	11	16	19
CFH 3	10	12	17	20
CFH 4	18	25	30	35
CFH 5	11.5	15.5	20	24.5
LCD 1	8	12	14	20
LCD 2	20	28	38	48
LCD 3	38	48	58	68
LCD 4	45	55	65	75
LCD 5	4	6	6	8
LCH 1	2	2.5	3	3.5
LCH 2	10	12	17	20
LCH 3	20	30	38	45
LCH 4	12.5	15.5	20	24.5
Standard length of long gate bush	30	40	50	60

LCH 5 = Cavity thickness - LCH 3

- **Cylinder area machining of BALA valve**

밸브 실린더부 가공도

CPS 50, 70, 90 (Pneumatic cylinder) CPS 50, 70, 90 (공압실린더)

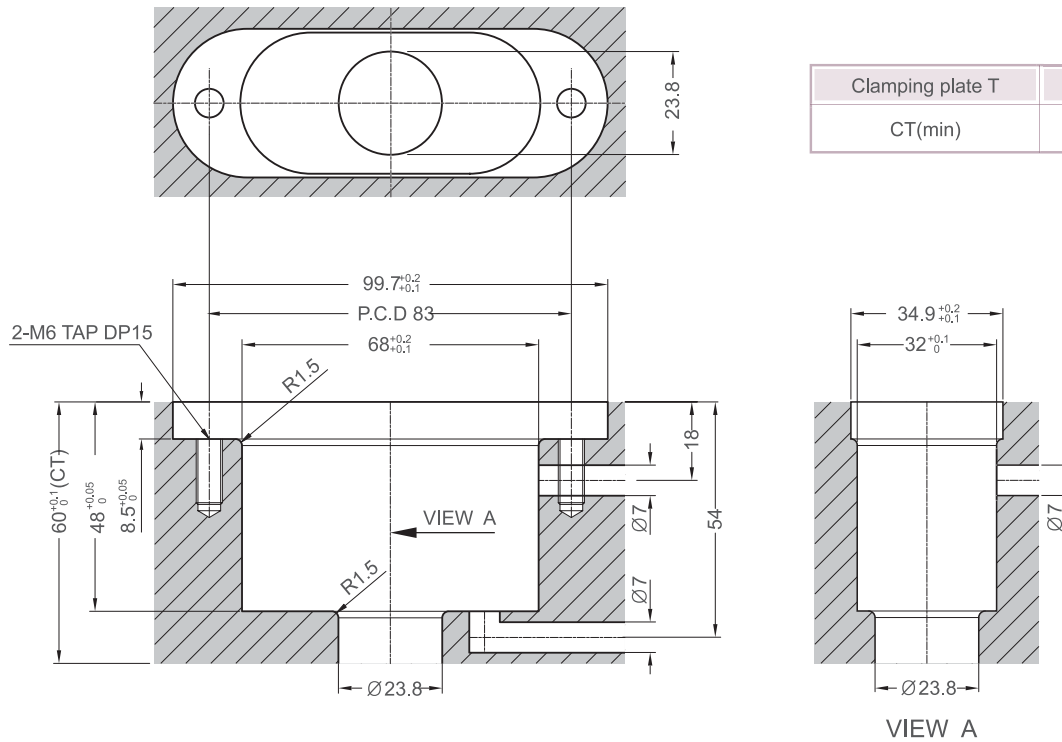


Clamping plate T	CPS 50	CPS 70	CPS 90
CT(min)	60T	70T	75T

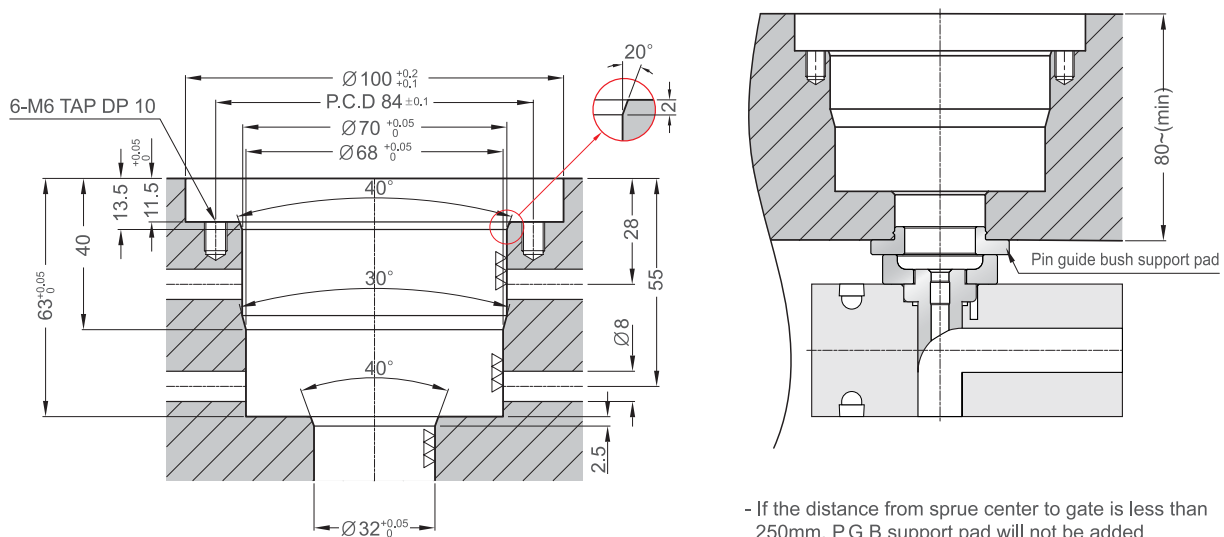
Unit : mm

Cylinder model	A1	A2	B	D1	P.C.D	H1	H2	L	R1	R2	R3	R4
CPS 50	19	52.5	23.8	55	64.8	9.5	46.5	19.7	R6.5	R7.5	R13.5	R7.5
CPS 70	21	59	30	75	84.8	9.5	53	28	R2.5	R6.5	R11.5	R7.5
CPS 90	20.5	59	30	95	104.8	9.5	53	31	R8.5	R9.5	R17.5	R9.5

ELS 50 (Pneumatic cylinder) ELS 50 (공압실린더)



VCH 78 (Hydraulic cylinder) VCH 78 (유압실린더)



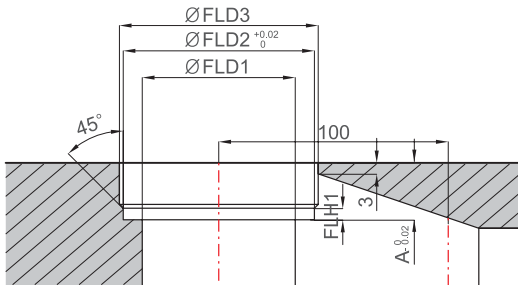
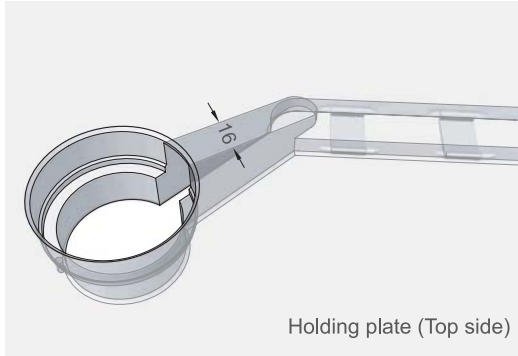
- If the distance from sprue center to gate is less than 250mm, P.G.B support pad will not be added
- 스프루 중심에서 게이트까지의 거리가 250mm이하인 경우 PGB support pad가 설치되지 않습니다.

● Flange area machining of BALA

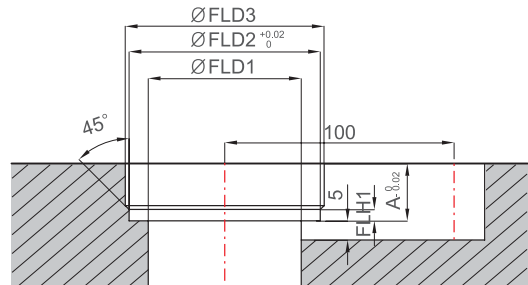
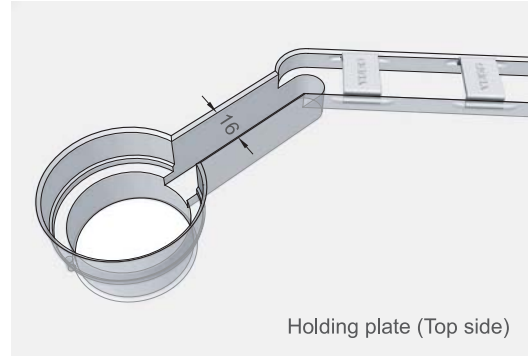
플랜지부 가공

Flange area machining 플랜지부 가공

A type



B type



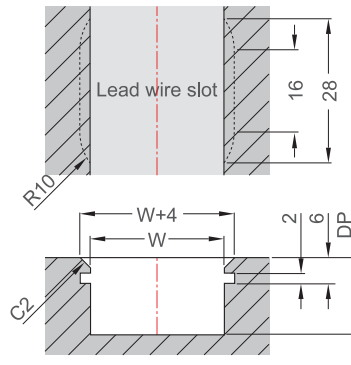
Unit : mm

Nozzle model	FLD1	FLD2	FLD3	FLH1	A
BALA 18	32	38	40	2.5	This is subject to change according to design specification 설계 사양에 따라 가변
BALA 25	40	50	52	3	
BALA 35	50	60	62	3	
BALA 45	60	70	72	3	

- YUDO manufactures and supplied MODU system as figure shown A.
Please note that alternative option, figure B, is also available where figure A is not applicable.
- MODU system 공급시 "A"와 같이 제공됩니다.
그러나 Hot runner system 공급시 고객의 사정에 의해 "A"와 같이 가공할 수 없을 때는 "B"와 같이 가공할 수 있습니다.

Lead wire slot

Unit : mm

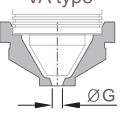
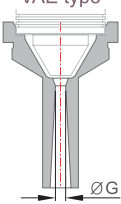
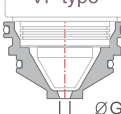
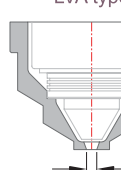
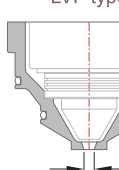


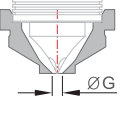
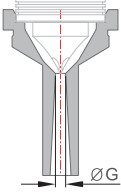
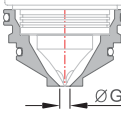
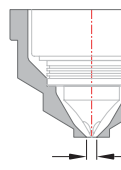
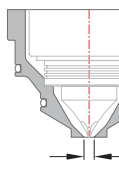
W	Zone Q'ty	DP
16	1	10
26	1 ~ 2	10
	3 ~ 4	15
	5 ~ 6	20
46	5 ~ 8	15
	9 ~ 12	20

● Code number of gate bush

게이트 부시 코드명

Valve / Open type

		VA type	VAE type	VF type	LVA type	LVF type
						
	ØG	VA type code	VAE type code	VF type code	LVA type code	LVF type code
BALA 18	1.2	BABGVA180121	BABVAE180121	BABGVF180121	BABLVA180123	BABLVF180123
	1.5	BABGVA180151	BABVAE180151	BABGVF180151	BABLVA180153	BABLVF180153
	2.0	BABGVA180201	BABVAE180201	BABGVF180201	BABLVA180203	BABLVF180203
BALA 25	1.5	BABGVA250151	BABVAE250151	BABGVF250151	BABLVA250153	BABLVF250154
	2.0	BABGVA250201	BABVAE250201	BABGVF250201	BABLVA250203	BABLVF250204
	2.5	BABGVA250251	BABVAE250251	BABGVF250251	BABLVA250253	BABLVF250254
BALA 35	2.5	BABGVA350251	BABVAE350251	BABGVF350251	BABLVA350253	BABLVF350254
	3.0	BABGVA350301	BABVAE350301	BABGVF350301	BABLVA350304	BABLVF350304
	3.5	BABGVA350351	BABVAE350351	BABGVF350351	BABLVA350354	BABLVF350354
	4.0	BABGVA350401	BABVAE350401	BABGVF350401	BABLVA350404	BABLVF350404
BALA 45	4.0	BABGVA450402	BABVAE450402	BABGVF450402	BABLVA450404	BABLVF450403
	5.0	BABGVA450502	BABVAE450502	BABGVF450502	BABLVA450504	BABLVF450503
	6.0	BABGVA450602	BABVAE450602	BABGVF450602	BABLVA450604	BABLVF450603
	7.0	BABGVA450702	BABVAE450702	BABGVF450702	BABLVA450704	BABLVF450703
	8.0	BABGVA450802	BABVAE450802	BABGVF450802	BABLVA450804	BABLVF450803

		CA type	CAE type	CF type	LCA type	LCF type
						
	ØG	CA type code	CF type code	LCA type code	LCF type code	ØG1
BALA 18	0.8	BABGCA180080	BABGCF180080	BABLCA180082	BABLCF180081	1.5
	1.0	BABGCA180100	BABGCF180100	BABLCA180102	BABLCF180101	2.0
	1.5	BABGCA180150	BABGCF180150	BABLCA180152	BABLCF180151	
BALA 25	1.0	BABGCA250100	BABGCF250100	BABLCA250103	BABLCF250102	2.0
	1.5	BABGCA250150	BABGCF250150	BABLCA250153	BABLCF250152	3.0
	2.0	BABGCA250200	BABGCF250200	BABLCA250203	BABLCF250202	
BALA 35	1.5	BABGCA350150	BABGCF350150	BABLCA350153	BABLCF350153	3.0
	2.0	BABGCA350200	BABGCF350200	BABLCA350203	BABLCF350203	4.0
	2.5	BABGCA350250	BABGCF350250	BABLCA350253	BABLCF350253	
BALA 45	2.0	BABGCA450200	BABGCF450200	BABLCA450203	BABLCF450201	4.0
	3.0	BABGCA450300	BABGCF450300	BABLCA450302	BABLCF450301	5.0
	4.0	BABGCA450400	BABGCF450400	BABLCA450402	BABLCF450401	6.0

● How to read valve gate bush

BALA 밸브 게이트 부시 코드 보는 법

BA - BGCA - 18 - 012 - 0

System Gate bush type Nozzle size Gate size Version

Gate bush O-ring code 게이트 부시 "O"링 코드

		VF type	LVF type	CF type	LCF type
BALA 18	1	ACRRRAV170220	ACRRRAV170280	ACRRRAV170220	ACRRRAV170280
	2	ACRRRAV170170	ACRRRAV170170	ACRRRAV170170	ACRRRAV170170
BALA 25	1	ACRRRAV261250	ACRRRAV261310	ACRRRAV261250	ACRRRAV261310
	2	ACRRRAV170220	ACRRRAV170220	ACRRRAV170220	ACRRRAV170220
BALA 35	1	ACRRRAV261310	ACRRRAV261370	ACRRRAV261310	ACRRRAV261370
	2	ACRRRAV261250	ACRRRAV261250	ACRRRAV261250	ACRRRAV261250
BALA 45	1	ACRRRAV261370	ACRRRAV261440	ACRRRAV261370	ACRRRAV261440
	2	ACRRRAV261310	ACRRRAV261310	ACRRRAV261310	ACRRRAV261310

● Dimensions of gate bush

게이트 부시 치수

Valve gate bush

VA type

VAE type

VF type

Unit : mm

Nozzle model	BALA 18	BALA 25	BALA 35	BALA 45	Nozzle model	BALA 18	BALA 25	BALA 35	BALA 45
VAD 1	8	12	14	20	VFD 1	8	12	14	20
VAD 2	18	25	35	45	VFD 2	18	25	35	45
VAD 3	20	28	38	48	VFD 3	20	28	38	48
VAD 4	25	35	45	55	VFD 4	24	34	44	54
VAH 1	2.2	2.7	3.2	3.7	VFD 5	28	38	48	58
VAH 2	10	12	17	20	VFH 1	2.2	2.7	3.2	3.7
VAH 3	12	15	20	25	VFH 2	10	12	17	20
VAH 4	15	20	25	32	VFH 3	12	15	20	25
E	15	30	40	45	VFH 4	12.8	18.9	23.9	28.9
					VFH 5	18	25	30	35

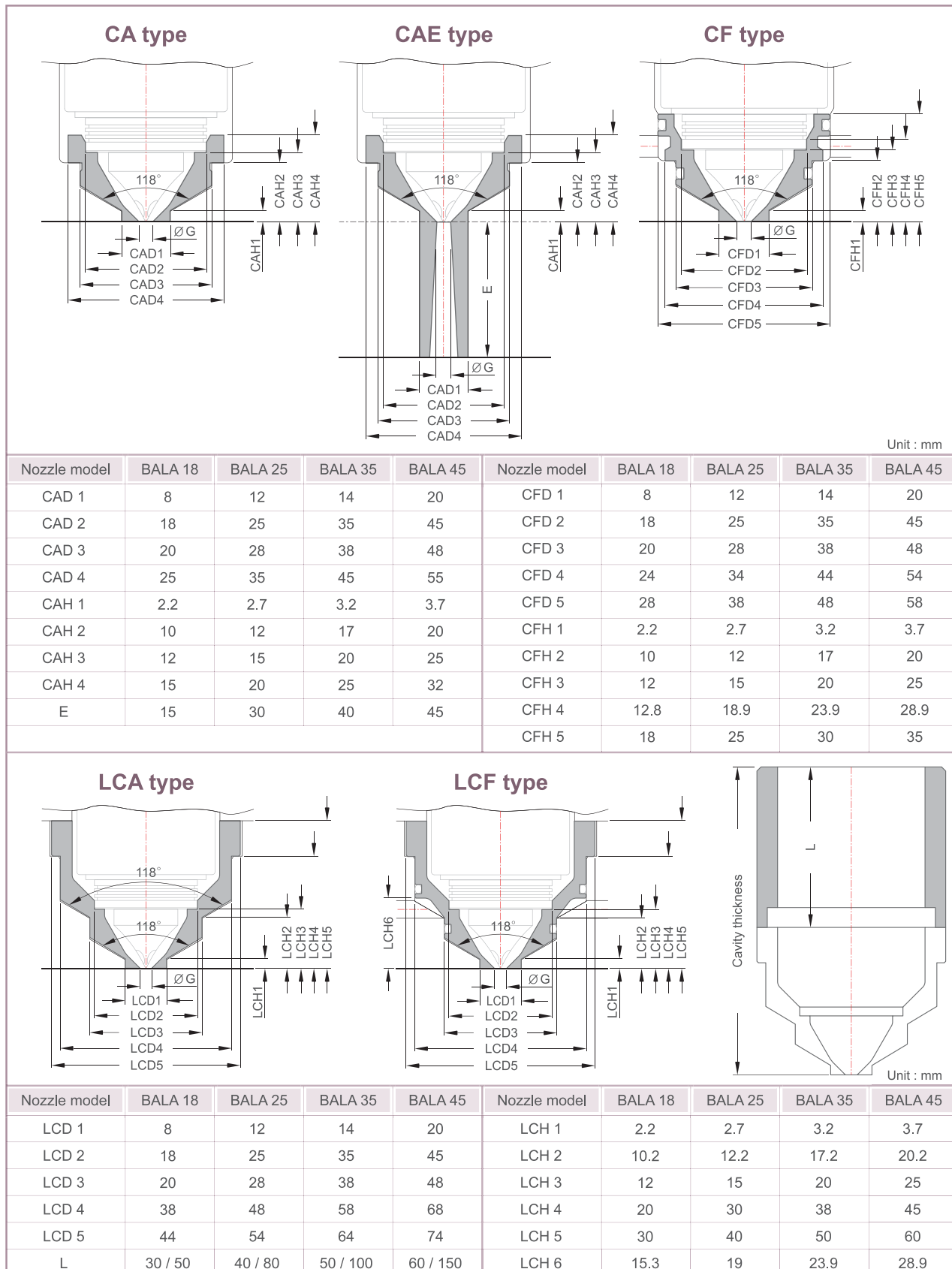
LVA type

LVF type

Unit : mm

Nozzle model	BALA 18	BALA 25	BALA 35	BALA 45	Nozzle model	BALA 18	BALA 25	BALA 35	BALA 45
LVD 1	8	12	14	20	LVH 1	2.2	2.7	3.2	3.7
LVD 2	18	25	35	45	LVH 2	10.2	12.2	17.2	20.2
LVD 3	20	28	38	48	LVH 3	12	15	20	25
LVD 4	38	48	58	68	LVH 4	20	30	38	45
LVD 5	44	54	64	74	LVH 5	30	40	50	60
L	30 / 50	40 / 80	50 / 100	60 / 150	LVH 6	15.3	19	23.9	28.9

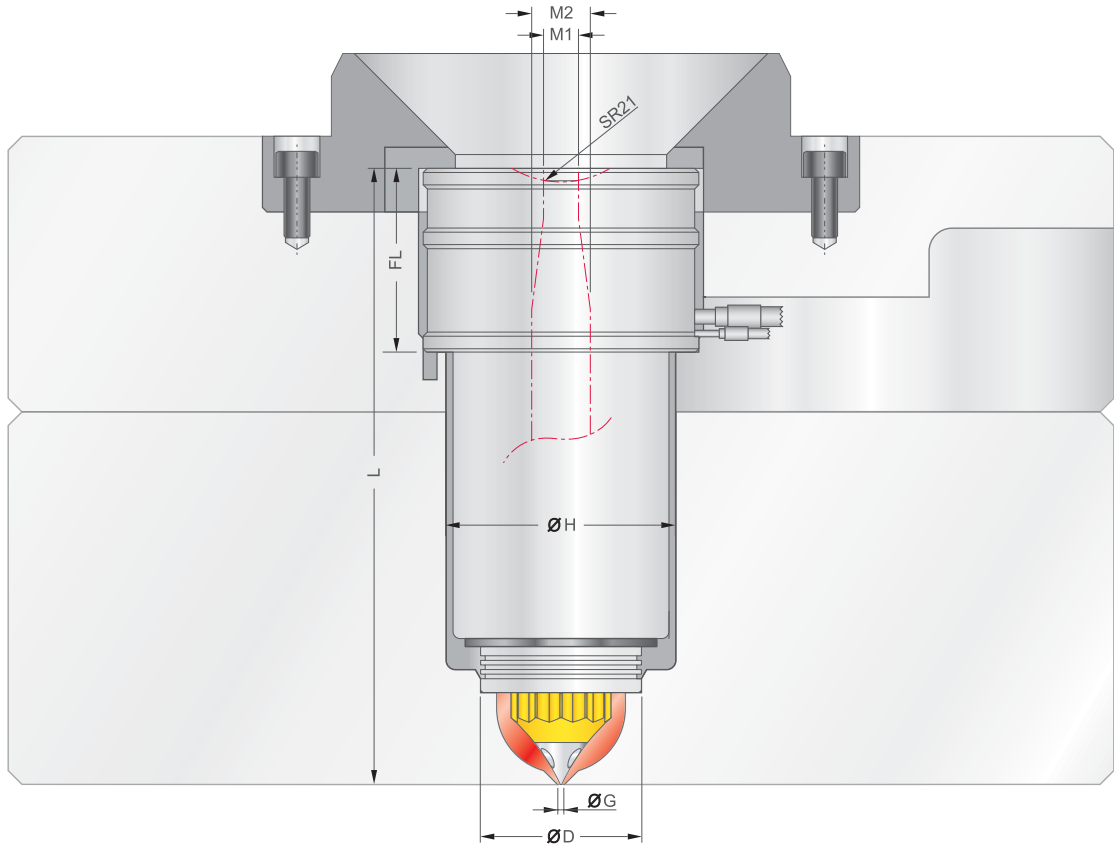
Open gate bush



● Specification of BALA open single nozzle (BIS)

단 노즐 사양 (BIS)

Specification 사양



- Single Nozzle has 4 standardized sizes and each size has various gate diameters.
- Nozzle size is labelled after the Type Name. (ex. BIS 25 : BALA Single Nozzle 25), and determines the injection volume of the nozzle.
- Only for general purpose material under 230°C operation temp. And if operation temp. is over, BLS nozzles should be applied.

- 단노즐은 4개의 표준화된 규격과 다양한 형태의 게이트 직경을 갖추고 있습니다.
- 노즐 규격은 Type명 다음에 표기되며, 노즐의 사출량을 결정합니다. (예. BIS 25 : BALA Single Nozzle 25)
- 성형 온도가 230°C 미만인 범용 수지 금형에 적용 할 것을 권장하며, 범위를 초과하여 사용시 BLS 노즐을 사용해야 합니다.

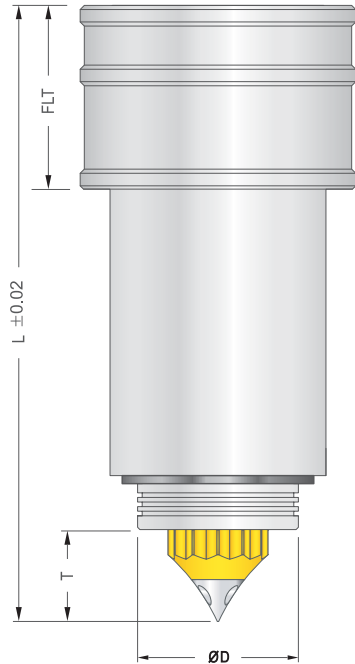
Unit : mm

Division	BIS 18	BIS 25	BIS 35	BIS 45
Model number	BIS-18-□□□-□□□	BIS-25-□□□-□□□	BIS-35-□□□-□□□	BIS-45-□□□-□□□
System	Open			
Injection volume	Up to 100gr	Up to 200gr	Up to 800gr	Over 800gr
ØM1	4	5	6	8
ØM2	6	8	10	15
L	75 ~ 175	90 ~ 320	90 ~ 390	110 ~ 320
FL	25	30	40	50
ØD	18	25	35	45
ØH	32	40	50	60
ØG	CC, CA, CF, LCA, LCF 0.8 / 1.0 / 1.5 TAC, TLC, TOE 3.0 / 4.0 / 4.5	CC, CA, CF, LCA, LCF 1.0 / 1.5 / 2.0 TAC, TLC, TOE 2.0 / 2.5 / 3.0	CC, CA, CF, LCA, LCF 1.5 / 2.0 / 2.5 TAC, TLC, TOE 3.0 / 4.0 / 4.5 / 3.0 / 3.5 / 4.0	CC, CA, CF, LCA, LCF 2.0 / 3.0 / 4.0 TAC, TLC, TOE 4.0 / 5.0 / 6.0

● Model number of BALA open single nozzle (BIS)

단 노즐 모델명 (BIS)

Nozzle length by heater, T/C code 노즐 길이 및 히터, T/C 코드



- Actual length of nozzle when delivered
납품시 실제 규격과 호칭 규격

Actual length of nozzle (BL) = L - ∠L - T
 $\angle L : (L - FLT - T) \times 1.2 \times e^{-5}$
 × (Injection temp. - Mold temp.)

납품시 실제 길이 (BL) = L - ∠L - T
 $\angle L : (L - FLT - T) \times 1.2 \times e^{-5}$
 × (사출온도 - 금형온도)

ex) BIS25CC180
 Injection temp. = 250℃, Mold temp. = 50℃
 $\angle L = (180 - 30 - 15) \times 1.2 \times e^{-5} \times (250 - 50) = 0.32$
 Actual length of nozzle (BL)
 = 180 - 0.32 - 15 = 164.68

- How to read nozzle model
노즐 모델명 보는 법

BIS - 25 - LCA - 090

— Nozzle length
 — Gate bush type
 - [C][C] : 2 digits in CC, CA, CF
 - [L][C][A] : 3 digits in LCA, LCF, TAC, TLC, TOE
 — Nozzle size (ØD)
 — BALA nozzle single type

Unit : mm

	BIS 18	BIS 25	BIS 35	BIS 45
T	12	15	20	25
FLT	25	30	40	45

Unit : mm

Model	ØD	L	Heater	T/C
BIS18 - □□□ - 075	18	75	HTFR15180350	NZTP[IC,CA]100550
BIS18 - □□□ - 085		85	HTFR15180450	NZTP[IC,CA]100650
BIS18 - □□□ - 095		95	HTFR15180550	NZTP[IC,CA]100750
BIS18 - □□□ - 105		105	HTFR15180650	NZTP[IC,CA]100850
BIS18 - □□□ - 115		115	HTFR15180750	NZTP[IC,CA]100950
BIS18 - □□□ - 125		125	HTFR15180850	NZTP[IC,CA]101050
BIS18 - □□□ - 135		135	HTFR15180950	NZTP[IC,CA]101150
BIS18 - □□□ - 145		145	HTFR15181050	NZTP[IC,CA]101250
BIS18 - □□□ - 155		155	HTFR15181150	NZTP[IC,CA]101350
BIS18 - □□□ - 165		165	HTFR15181250	NZTP[IC,CA]101450

Nozzle length(L) MIN 75 ~ MAX 175

Model	ØD	L	Heater	T/C
BIS 25 - □□□ - 090	25	90	HTFR36250430	NZTP[IC,CA]160650
BIS 25 - □□□ - 100		100	HTFR36250530	NZTP[IC,CA]160750
BIS 25 - □□□ - 110		110	HTFR36250630	NZTP[IC,CA]160850
BIS 25 - □□□ - 120		120	HTFR36250730	NZTP[IC,CA]160950
BIS 25 - □□□ - 130		130	HTFR36250830	NZTP[IC,CA]161050
BIS 25 - □□□ - 140		140	HTFR36250930	NZTP[IC,CA]161150
BIS 25 - □□□ - 150		150	HTFR36251030	NZTP[IC,CA]161250
BIS 25 - □□□ - 160		160	HTFR36251130	NZTP[IC,CA]161350
BIS 25 - □□□ - 170		170	HTFR36251230	NZTP[IC,CA]161450
BIS 25 - □□□ - 180		180	HTFR36251330	NZTP[IC,CA]161550

Nozzle length(L) MIN 90 ~ MAX 320

Model	ØD	L	Heater	T/C
BIS 35 - □□□ - 090	35	90	HTFR36350380	NZTP[IC,CA]160550
BIS 35 - □□□ - 100		100	HTFR36350480	NZTP[IC,CA]160650
BIS 35 - □□□ - 110		110	HTFR36350580	NZTP[IC,CA]160750
BIS 35 - □□□ - 120		120	HTFR36350680	NZTP[IC,CA]160850
BIS 35 - □□□ - 130		130	HTFR36350780	NZTP[IC,CA]160950
BIS 35 - □□□ - 140		140	HTFR36350880	NZTP[IC,CA]161050
BIS 35 - □□□ - 150		150	HTFR36350980	NZTP[IC,CA]161150
BIS 35 - □□□ - 160		160	HTFR36351080	NZTP[IC,CA]161250
BIS 35 - □□□ - 170		170	HTFR36351180	NZTP[IC,CA]161350
BIS 35 - □□□ - 180		180	HTFR36351280	NZTP[IC,CA]161450

Nozzle length(L) MIN 90 ~ MAX 380

Model	ØD	L	Heater	T/C
BIS 45 - □□□ - 110	45	110	HTFR36450530	NZTP[IC,CA]160550
BIS 45 - □□□ - 120		120	HTFR36450630	NZTP[IC,CA]160650
BIS 45 - □□□ - 130		130	HTFR36450730	NZTP[IC,CA]160750
BIS 45 - □□□ - 140		140	HTFR36450830	NZTP[IC,CA]160850
BIS 45 - □□□ - 150		150	HTFR36450930	NZTP[IC,CA]160950
BIS 45 - □□□ - 160		160	HTFR36451030	NZTP[IC,CA]161050
BIS 45 - □□□ - 170		170	HTFR36451130	NZTP[IC,CA]161150
BIS 45 - □□□ - 180		180	HTFR36451230	NZTP[IC,CA]161250
BIS 45 - □□□ - 190		190	HTFR36451330	NZTP[IC,CA]161350
BIS 45 - □□□ - 200		200	HTFR36451430	NZTP[IC,CA]161450

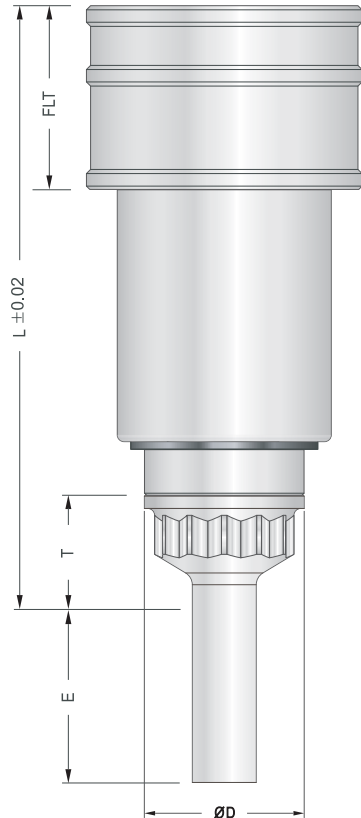
Nozzle length(L) MIN 110 ~ MAX 320

● Model number of BALA open single nozzle (BIS) - TAC, TLC, TOE

단 노즐 모델명 (BIS) - TAC, TLC, TOE

Nozzle length by heater, T/C code 노즐 길이 및 히터, T/C 코드 (TAC, TLC, TOE type)

- "E" Dimension may be machined by customer
"E"치수는 고객이 가공하는 부분입니다.



- Actual length of nozzle when delivered
납품시 실제 규격과 호칭 규격

Actual length of nozzle (BL) = L - ∠L - T
 $\angle L : (L - FLT - T) \times 1.2 \times e^{-5}$
 × (Injection temp. - Mold temp.)

납품시 실제 길이 (BL) = L - ∠L - T
 $\angle L : (L - FLT - T) \times 1.2 \times e^{-5}$
 × (사출온도 - 금형온도)

ex) BIS25CC180

Injection temp. = 250℃, Mold temp. = 50℃
 $\angle L = (180 - 30 - 15) \times 1.2 \times e^{-5} \times (250 - 50) = 0.32$
 Actual length of nozzle (BL)
 = 180 - 0.32 - 15 = 164.68

Unit : mm

	BIS 18	BIS 25	BIS 35	BIS 45
T	14	17.5	23	32
FLT	25	30	40	50
E	15	30	40	45

Unit : mm

Model	ØD	L	Heater	T/C
BIS18 - □□□ - 075	18	75	HTFR15180350	NZTP[IC,CA]100550
BIS18 - □□□ - 085		85	HTFR15180450	NZTP[IC,CA]100650
BIS18 - □□□ - 095		95	HTFR15180550	NZTP[IC,CA]100750
BIS18 - □□□ - 105		105	HTFR15180650	NZTP[IC,CA]100850
BIS18 - □□□ - 115		115	HTFR15180750	NZTP[IC,CA]100950
BIS18 - □□□ - 125		125	HTFR15180850	NZTP[IC,CA]101050
BIS18 - □□□ - 135		135	HTFR15180950	NZTP[IC,CA]101150
BIS18 - □□□ - 145		145	HTFR15181050	NZTP[IC,CA]101250
BIS18 - □□□ - 155		155	HTFR15181150	NZTP[IC,CA]101350
BIS18 - □□□ - 165		165	HTFR15181250	NZTP[IC,CA]101450

Nozzle length(L) MIN 75 ~ MAX 175

Model	ØD	L	Heater	T/C
BIS 25 - □□□ - 090	25	90	HTFR36250430	NZTP[IC,CA]160650
BIS 25 - □□□ - 100		100	HTFR36250530	NZTP[IC,CA]160750
BIS 25 - □□□ - 110		110	HTFR36250630	NZTP[IC,CA]160850
BIS 25 - □□□ - 120		120	HTFR36250730	NZTP[IC,CA]160950
BIS 25 - □□□ - 130		130	HTFR36250830	NZTP[IC,CA]161050
BIS 25 - □□□ - 140		140	HTFR36250930	NZTP[IC,CA]161150
BIS 25 - □□□ - 150		150	HTFR36251030	NZTP[IC,CA]161250
BIS 25 - □□□ - 160		160	HTFR36251130	NZTP[IC,CA]161350
BIS 25 - □□□ - 170		170	HTFR36251230	NZTP[IC,CA]161450
BIS 25 - □□□ - 180		180	HTFR36251330	NZTP[IC,CA]161550

Nozzle length(L) MIN 90 ~ MAX 320

Model	ØD	L	Heater	T/C
BIS 35 - □□□ - 090	35	90	HTFR36350380	NZTP[IC,CA]160550
BIS 35 - □□□ - 100		100	HTFR36350480	NZTP[IC,CA]160650
BIS 35 - □□□ - 110		110	HTFR36350580	NZTP[IC,CA]160750
BIS 35 - □□□ - 120		120	HTFR36350680	NZTP[IC,CA]160850
BIS 35 - □□□ - 130		130	HTFR36350780	NZTP[IC,CA]160950
BIS 35 - □□□ - 140		140	HTFR36350880	NZTP[IC,CA]161050
BIS 35 - □□□ - 150		150	HTFR36350980	NZTP[IC,CA]161150
BIS 35 - □□□ - 160		160	HTFR36351080	NZTP[IC,CA]161250
BIS 35 - □□□ - 170		170	HTFR36351180	NZTP[IC,CA]161350
BIS 35 - □□□ - 180		180	HTFR36351280	NZTP[IC,CA]161450

Nozzle length(L) MIN 90 ~ MAX 380

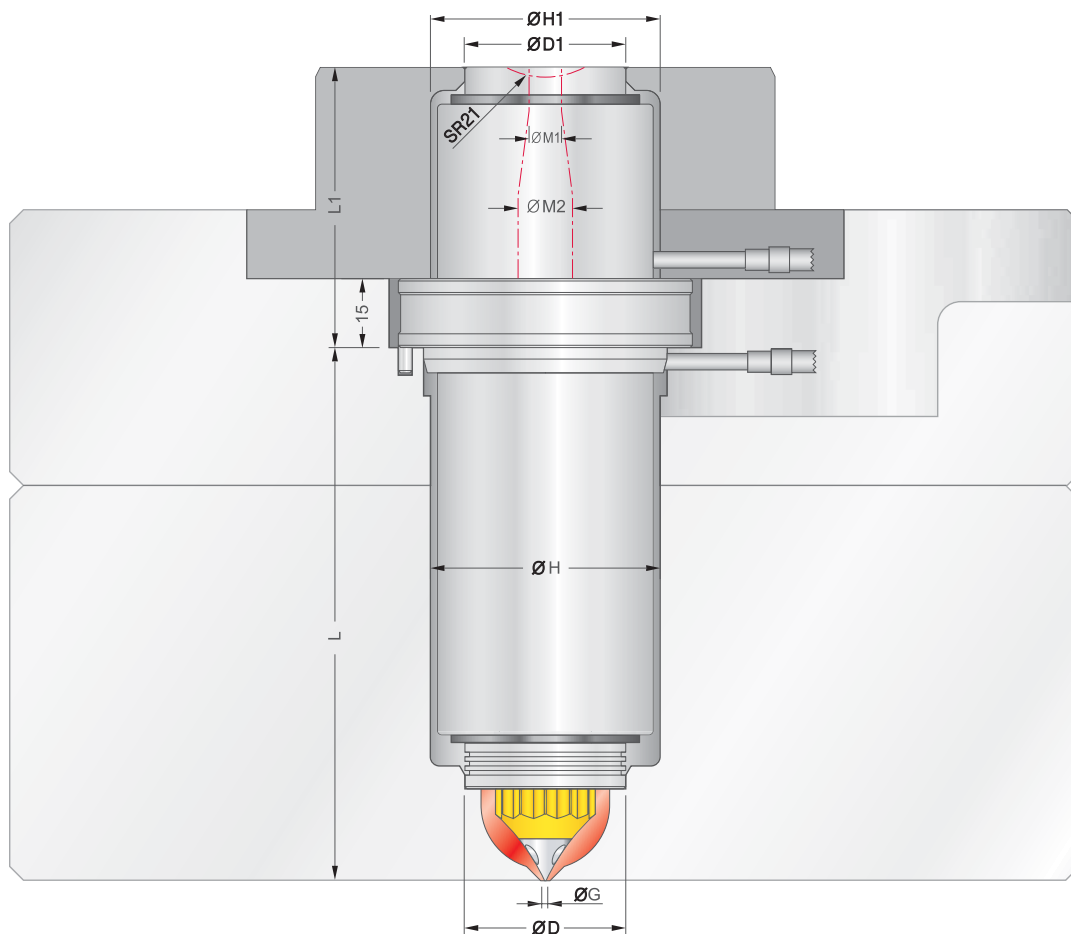
Model	ØD	L	Heater	T/C
BIS 45 - □□□ - 110	45	110	HTFR36450430	NZTP[IC,CA]160550
BIS 45 - □□□ - 120		120	HTFR36450530	NZTP[IC,CA]160650
BIS 45 - □□□ - 130		130	HTFR36450630	NZTP[IC,CA]160750
BIS 45 - □□□ - 140		140	HTFR36450730	NZTP[IC,CA]160850
BIS 45 - □□□ - 150		150	HTFR36450830	NZTP[IC,CA]160950
BIS 45 - □□□ - 160		160	HTFR36450930	NZTP[IC,CA]161050
BIS 45 - □□□ - 170		170	HTFR36451030	NZTP[IC,CA]161150
BIS 45 - □□□ - 180		180	HTFR36451130	NZTP[IC,CA]161250
BIS 45 - □□□ - 190		190	HTFR36451230	NZTP[IC,CA]161350
BIS 45 - □□□ - 200		200	HTFR36451330	NZTP[IC,CA]161450

Nozzle length(L) MIN 110 ~ MAX 330

● Specification of BALA open single long nozzle (BLS)

단 노즐 사양 (BLS)

Specification 사양



- Single Nozzle has 3 standardized sizes and each size has various gate diameters.
- Nozzle size is labelled after the Type Name. (ex. BLS 25 : BALA Long Type Single Nozzle 25), and determines the injection volume of the nozzle.
- 단노즐은 3개의 표준화된 규격과 다양한 형태의 게이트 직경을 갖추고 있습니다.
- 노즐 규격은 Type명 다음에 표기되며, 노즐의 사출량을 결정합니다. (예. BLS 25 : BALA Long Type Single Nozzle 25)

Unit : mm

Division	BLS 18	BLS 25	BLS 35
Model number	BLS-18-□□□-□□□	BLS-25-□□□-□□□	BLS-35-□□□-□□□
System	Open	Open	Open
Injection volume	Up to 120gr	Up to 240gr	Up to 800gr
ØM1	4	5	6
ØM2	6	8	10
L	Refer to 29 page		
L1	55	55	61
ØD	18	25	35
ØD1	25	25	35
ØH	33	45	53
ØH1	40	45	50
ØG	CC, CA, CF, LCA, LCF 0.8 / 1.0 / 1.5 TAC, TLC, TOE 1.5 / 2.0	CC, CA, CF, LCA, LCF 1.0 / 1.5 / 2.0 TAC, TLC, TOE 3.0 / 4.0 / 4.5 / 3.0 / 3.5 / 4.0	CC, CA, CF, LCA, LCF 1.5 / 2.0 / 2.5 TAC, TLC, TOE 4.0 / 5.0 / 6.0

● Model number of BALA open single long nozzle (BLS)

단 노즐 모델명 (BLS)

Nozzle length by heater, T/C code 노즐 길이 및 히터, T/C 코드

	Unit : mm			
			T	
	BLS 18	12		
	BLS 25	15		
	BLS 35	20		

Unit : mm						
Nozzle model	ØD	L	Nozzle body		Head body	
			Heater code	T/C code	Heater code	T/C code
BLS-18-□□□-045	18	45	HTSP14180300	NZTP(CA,IC)100550	HTFR36250320	NZTP(CA,IC)160650
BLS-18-□□□-050	18	50	HTSP14180350	NZTP(CA,IC)100650		
BLS-18-□□□-060	18	60	HTSP14180350	NZTP(CA,IC)100650		
BLS-18-□□□-070	18	70	HTSP14180450	NZTP(CA,IC)100750		
BLS-18-□□□-080	18	80	HTSP14180550	NZTP(CA,IC)100850		
BLS-25-□□□-070	25	70	HTFR36250430	NZTP(CA,IC)160750	HTFR36250320	NZTP(CA,IC)160750
BLS-25-□□□-080	25	80	HTFR36250530	NZTP(CA,IC)160850		
BLS-25-□□□-090	25	90	HTFR36250630	NZTP(CA,IC)160950		
BLS-25-□□□-100	25	100	HTFR36250730	NZTP(CA,IC)161050		
BLS-25-□□□-110	25	110	HTFR36250830	NZTP(CA,IC)161150		
BLS-35-□□□-070	35	70	HTFR36350380	NZTP(CA,IC)160650	HTFR36350380	NZTP(CA,IC)160750
BLS-35-□□□-080	35	80	HTFR36350480	NZTP(CA,IC)160750		
BLS-35-□□□-090	35	90	HTFR36350580	NZTP(CA,IC)160850		
BLS-35-□□□-100	35	100	HTFR36350680	NZTP(CA,IC)160950		
BLS-35-□□□-110	35	110	HTFR36350780	NZTP(CA,IC)161050		

Nozzle length by heater, T/C code 노즐 길이 및 히터, T/C 코드 (TAC, TLC, TOE type)

	Unit : mm				
				T	E
	BLS 18	14	15		
	BLS 25	17.5	30		
	BLS 35	23	40		

Unit : mm						
Nozzle model	ØD	L	Nozzle body		Head body	
			Heater code	T/C code	Heater code	T/C code
BLS-18-□□□-050	18	45	HTSP14180300	NZTP(CA,IC)100650	HTFR36250320	NZTP(CA,IC)160650
BLS-18-□□□-060	18	50	HTSP14180350	NZTP(CA,IC)100650		
BLS-18-□□□-070	18	60	HTSP14180450	NZTP(CA,IC)100750		
BLS-18-□□□-080	18	70	HTSP14180550	NZTP(CA,IC)100850		
BLS-18-□□□-090	18	80	HTSP14180650	NZTP(CA,IC)100950		
BLS-25-□□□-070	25	70	HTFR36250430	NZTP(CA,IC)160750	HTFR36250320	NZTP(CA,IC)160750
BLS-25-□□□-080	25	80	HTFR36250530	NZTP(CA,IC)160850		
BLS-25-□□□-090	25	90	HTFR36250630	NZTP(CA,IC)160950		
BLS-25-□□□-100	25	100	HTFR36250730	NZTP(CA,IC)161050		
BLS-25-□□□-110	25	110	HTFR36250830	NZTP(CA,IC)161150		
BLS-35-□□□-070	35	70	HTFR36350380	NZTP(CA,IC)160650	HTFR36350380	NZTP(CA,IC)160750
BLS-35-□□□-080	35	80	HTFR36350480	NZTP(CA,IC)160750		
BLS-35-□□□-090	35	90	HTFR36350580	NZTP(CA,IC)160850		
BLS-35-□□□-100	35	100	HTFR36350680	NZTP(CA,IC)160950		
BLS-35-□□□-110	35	110	HTFR36350780	NZTP(CA,IC)161050		

● How to read nozzle model

노즐 모델명 보는 법

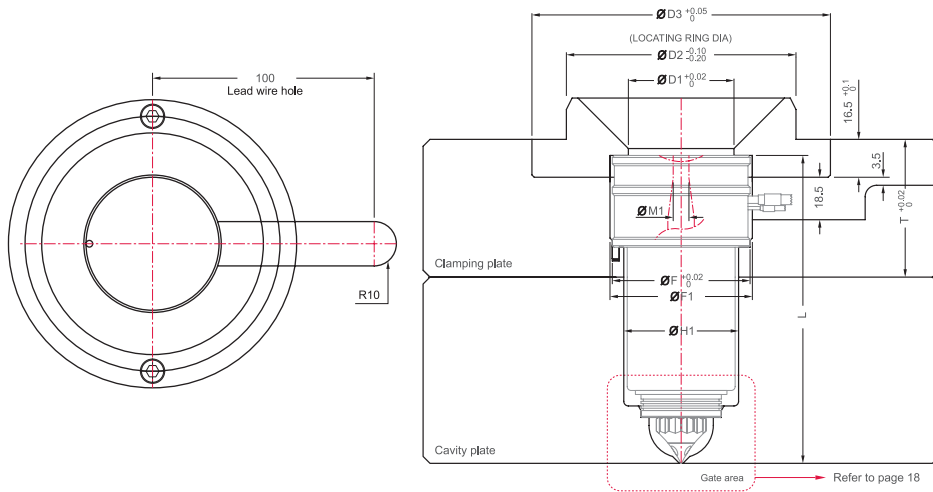
BLS - 25 - LCA - 090

Nozzle length
 Gate bush type - [C][C] : 2 digits in CC, CA, CF
 [L][C][A] : 3 digits in LCA, LCF, TAC, TLC, TOE
 Nozzle size (ØD)
 Nozzle type (BALA single long type)

● Model machining of BALA open single nozzle (BIS, BLS)

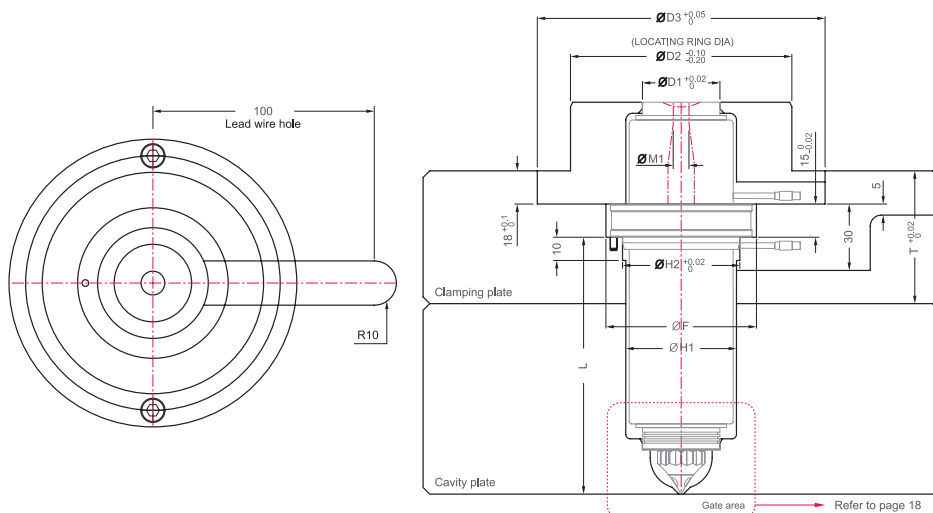
단 노즐 금형 가공도

Mold machining of BIS BIS 금형 가공도



Nozzle model	$\varnothing D1$	$\varnothing D2$	$\varnothing D3$	$\varnothing M1$	$\varnothing H1$	$\varnothing F$	$F1$	T	L
BIS 18	31	100 120	129 149	4	32	38	40	60	75 ~ 175
BIS 25	43	100 120	129 149	5	40	50	52	60	90 ~ 320
BIS 35	52	100 120	129 149	7	50	60	62	60	90 ~ 390
BIS 45	62	100 120	129 149	10	60	70	72	60	110 ~ 450

Mold machining of BLS BLS 금형 가공도



Nozzle model	$\varnothing D1$	$\varnothing D2$	$\varnothing D3$	$\varnothing M1$	$\varnothing H1$	$\varnothing H2$	$\varnothing F$	T	L
BLS 18	25	100 120	129 149	4	32	33	58	40	45 ~ 140
BLS 25	25	100 120	129 149	5	40	45	65	60	70 ~ 160
BLS 35	35	100 120	129 149	7	50	53	68	60	70 ~ 160

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Any question? Access to <http://qna.yudo.com>

