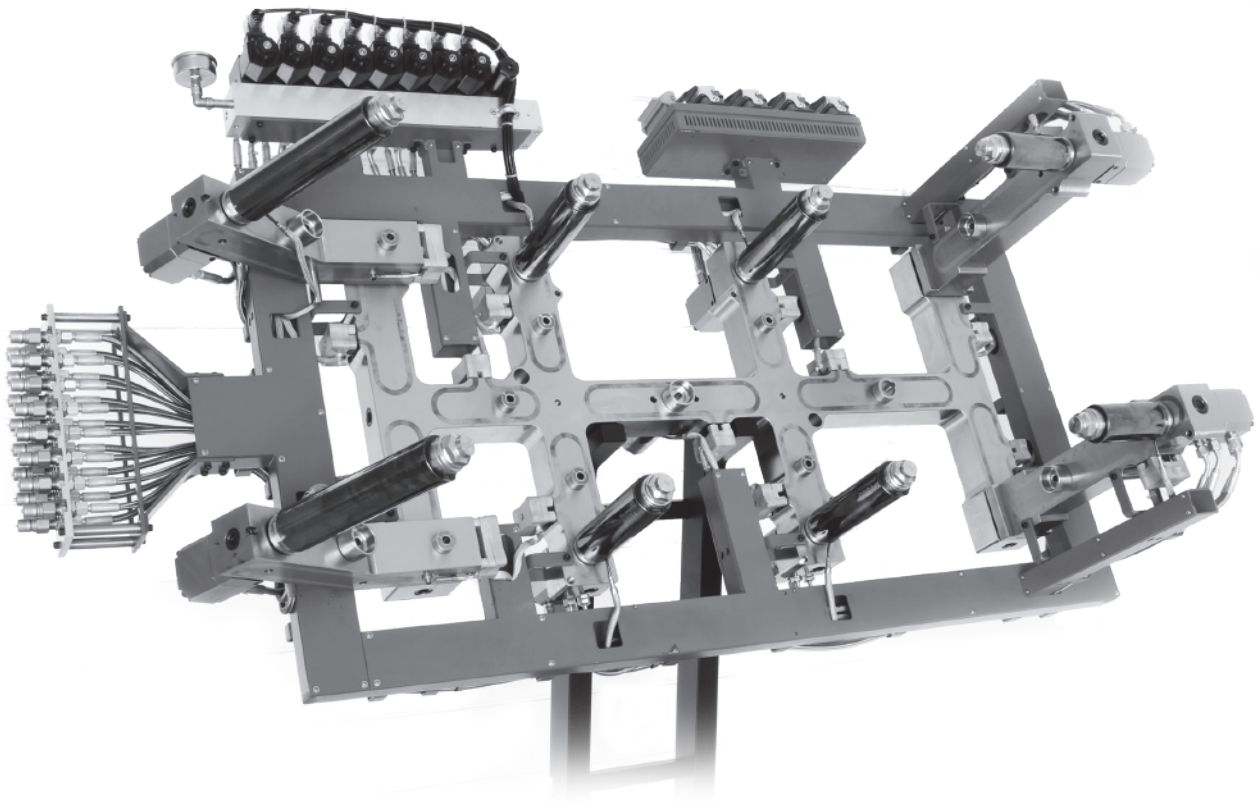


# YUDO®

*Integrated Engineering Solution*



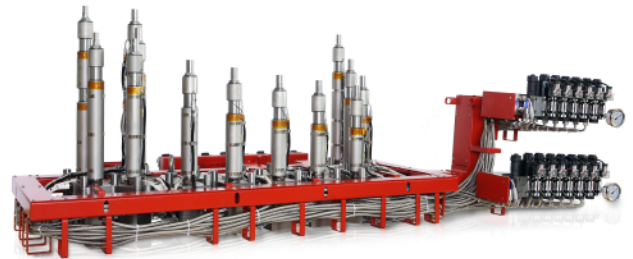
TINA AM Technical Data

# Introduction of TINA AM System

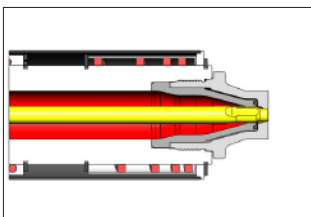
## 系统介绍

- TINA AM System is fully assembled Hot runner system as an Unit with Manifold, Nozzles, Connectors, Valves, Heaters, and Thermocouples.
- Screw - MODU System is economical type of MODU system that well accepted by car industries.
- Nozzles are based on TIAN AM System which is the best of YUDO System.
- Valve system & Open system.
- Pneumatic valve system & Hydraulic valve system with cooling line.
- for Heater lead wire and thermocouple.
- Sequential operation.

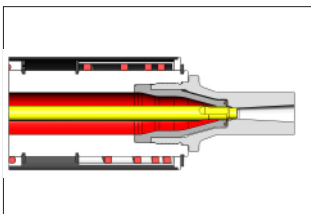
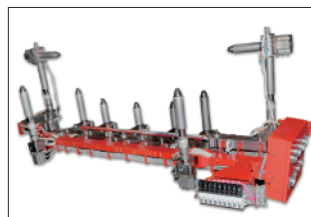
- TINA AM 系统将分流板、热咀、接线盒、阀针、加热器以及感温线组合成一个整体。
- TINA AM 系统容易被汽车工业接受，属于经济型的MODU系统。
- 热咀结构是基于YUDO最好的系统TINA AM 系统。
- 针阀系统&开放系统。



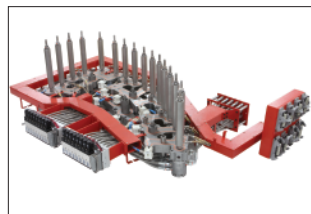
- 气阀系统&油阀系统配备有冷却系统。
- 为加热器、感温线设置有出线管道。
- 连续的操作性。



Bumper ( TINA AM TVA SYSTEM )  
保险杠 ( TINA AM TVA 系统)

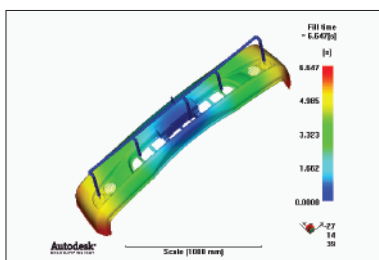


Window decoration ( TINA AM TVL SYSTEM )  
窗饰条 ( TINA AM TVL 系统)

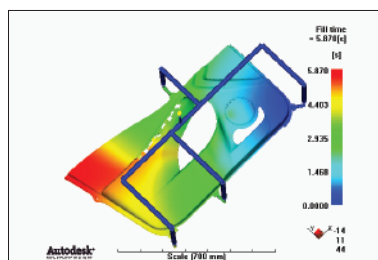


## Stable HRS based on CAE Analyses 通过CAE分析实现稳定的系统

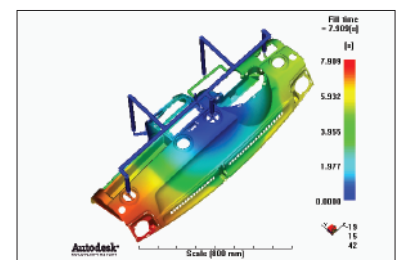
- YUDO design to keep the runner's resin flow conditions as optimum status by CAE analyses of product's special shapes and flow channel structure. And we always try our best to make stable system by performing every analyses including flow pattern, pressure drop, thermal distribution and hardness analysis, all for HRS design and maintenance.
- 柳道对新使用的产品及特殊形状的流道构造进行CAE分析，使流道的流动状态始终保持在最好的状态。通过流动模式，压力强弱，温度分布强度分析，热分析等HRS设计及运作等相关的所有分析，提供稳定的系统。



保险杠 Bumper



门板 Door

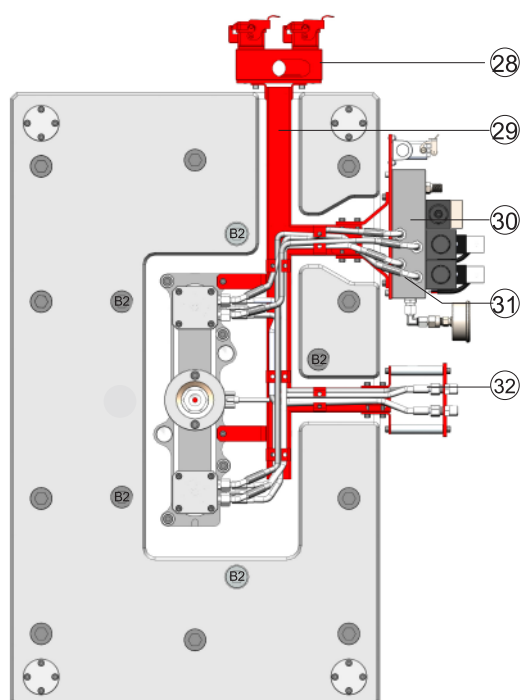
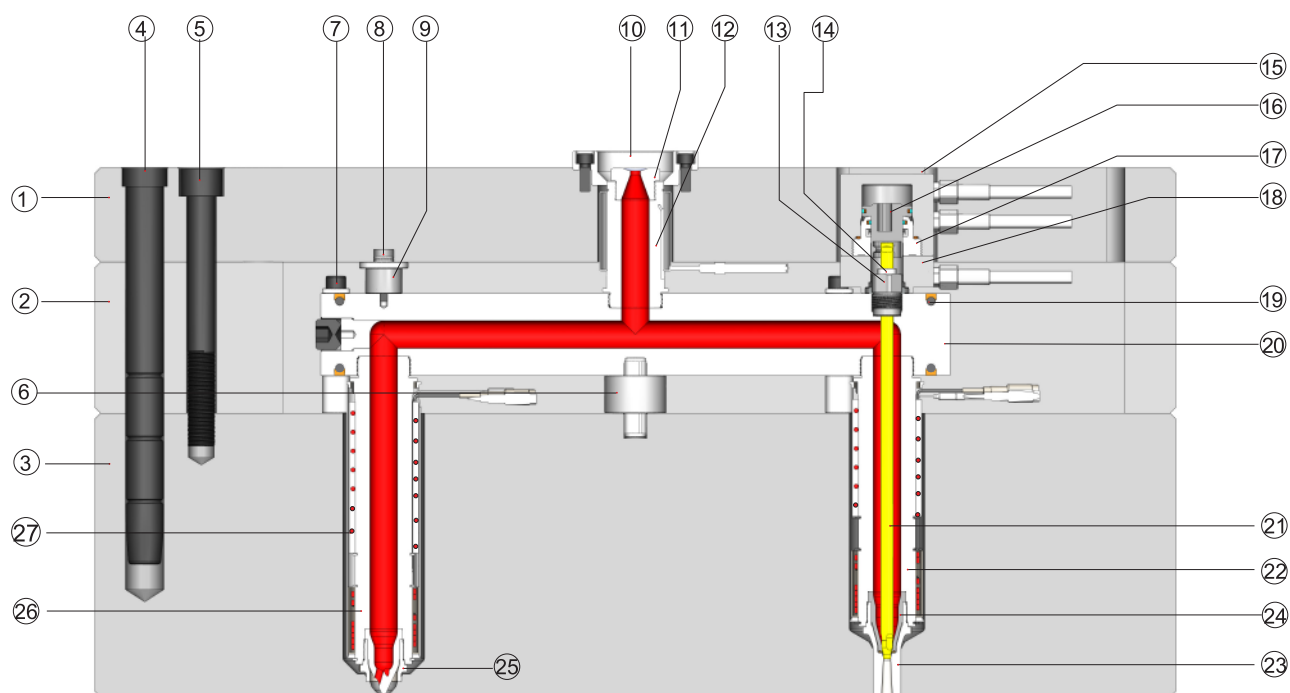


仪表盘 Dashboard

## Terminology of TINA AM System

系统组成配件

Part by name 各部位配件名称



1. Clamping Plate

2. Spacer Plate

3. Cavity Plate

4. Guide post

5. B2 Bolt

6. Center Pin

7. M10 Bolt

8. Oen Disc Pad

9. Manifold Disc

10. Locating Ring

11. Nozzle Locator Cap

12. Nozzle Locator Body

13. Pin Guide Bush Bolt

14. Pin Guide Bush

15. Cylinder Housing

16. Piston

17. Bottom

18. Cylinder Support

19. Sheath Herter

20. Manifold Block

21. Valve Pin

22. Valve Nozzle Body

23. Gate Bush

24. Nozzle Tip

25. Union

26. Open Nozzle Body

27. Heater

28. Connector Box

29. Duct

30. Solenoid

31. Oil pipe

32. cooling water pipe

发热丝

分流板

阀针

针阀式热咀

浇口套

咀尖

压帽

开放式热咀

加热器

接线盒

线架

电磁阀

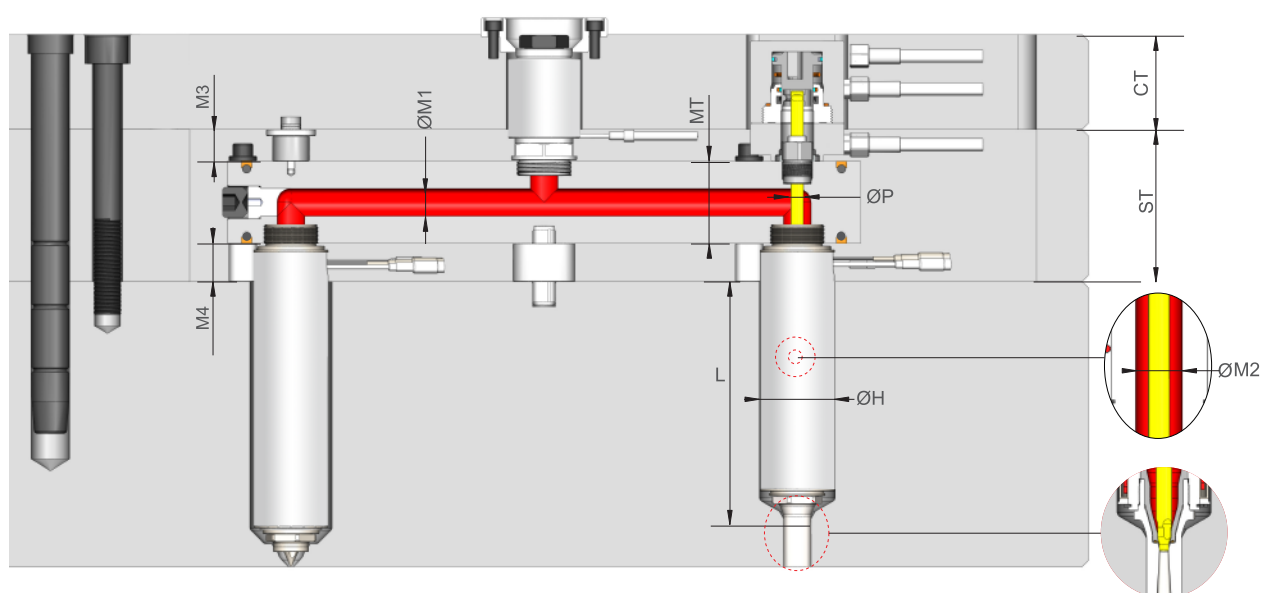
油管

冷却水管

# Specification of TINA AM System

系统说明

## Structure and specification 结构及配置



How to read Nozzle Model  
识别热阻型号名的方法

TINA AM 10-□□□□□□□□  
 (热阻长度) NOZZLE LENGTH(L)  
 (浇口形状) GATE STYLE (TVL/TVL...)  
 (热阻型号) NOZZLE TYPE(10,15,22)  
 SYSTEM (系统)

Unit : mm

Division	TIAN AM 10		TINA AM 15		TINA AM 22	
Model Number	TINA AM -10-□□□-□□□□□		TINA AM -15-□□□□-□□□□□		TINA AM -22-□□□□-□□□□□	
System	Valve	Open	Valve	Open	Valve	Open
Ø M1	Ø 10	Ø 10	Ø 15	Ø 15	Ø 22	Ø 22
Ø M2	Ø 10	Ø 10	Ø 15	Ø 15	Ø 22	Ø 22
M3	25	15	25	15	25	15
M4	30	30	30	30	30	30
CT[min]	75~	40~	75~	40~	75~	40~
MT	55	45	55	48	65	55
ST	110~	90~	110~	93~	120~	100~
L	90~	40~	90~	40~	110~	40~
Ø P	Ø 4	—	Ø 6	—	48	—
Ø H	Ø 45		Ø 55		Ø 65	

# Application note

使用标准

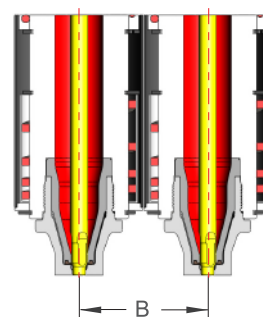
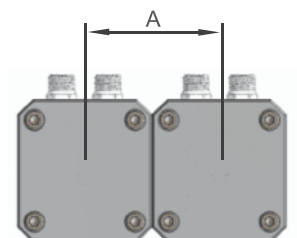
## Size Of Nozzle TINA AM NOZZLE(GATE SIZE) 规格表

Unit : mm

TYPE	SIZE	Valve		Open	
		Channel Dia.	Gate Dia.	Channel Dia.	Gate Dia.
TINA AM	10	Ø10	VV,VC,TVA,TVL: 1.5,2,2.5	Ø10	CC,TLC,TAC,CT-1,1.5,2 TOE,TLC,TAL-2,2.5,3
	15	Ø15	VV,VC,TVA,TVL: 3,3.5,4	Ø15	CC,TLC,TAC,CT-1.5,2,2.5 TOE,TLC,TAL-3,4,4.5
	22	Ø22	VV,VC,TVA,TVL: 5,6,7	Ø22	CC,TLC,TAC,CT-2,3,4 TOE,TLC,TAL-4,5,6

Unit: mm

NOZZLE MODEL	VALVE		OPEN
	Cylinder	A	
TINA AM 10	PWP60, PWH40	85/75	50
TINA AM 15	PWP60/80, PWH40	100/110/75	60
TINA AM 22	PWP80/90, PWH40	85/100/75	70



## Injection volume by nozzle size 热阻规格决定注塑量

- 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 representatives or agencies for an actual application.
- 注塑量由使用的塑料的特性与产品厚度，注塑速度，浇口的直径决定。
- 系统的各规格的性能及使用请参考如下内容。
- 在使用实际时请与本公司商讨。

Unit: gram

SIZE	GATE SYSTEM	VISCOSITY			PRODUCT THICKNESS		MATERIALS	
		HIGH (Low MI)	MEDIUM	LOW (High MI)	THIN (<2mm)	THICK (>2mm)	ENGINEERING	GENERAL
10	OPEN	~60	~100	~200	~100	~200	~60	~100
	VALVE	~70	~120	~240	~120	~240	~70	~120
15	OPEN	~300	~500	~800	~500	~800	~300	~500
	VALVE	~350	~600	~1000	~600	~1000	~350	~600
22	OPEN	300~	500~	800~	500~	800~	300~	500~
	VALVE	350~	600~	1000~	600~	1000~	350~	600~

## Material compatibility

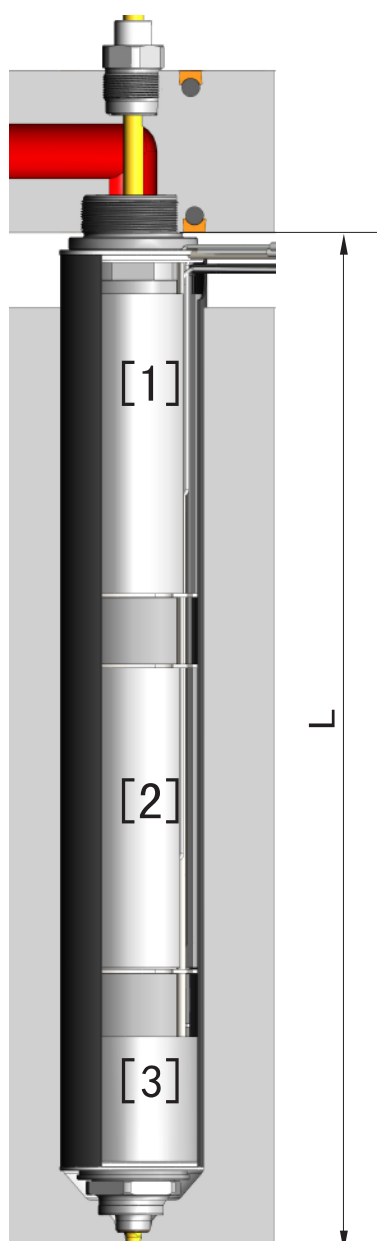
### 材料适用特性

## Material compatibility 材料的适合性

[illegible]

## Long Size Nozzle(TINA AM10,15,22 )

长热嘴规格 (TINA AM10,15,22 )



TINA AM 10

L	Heater 1	T/C 1	Heater 2	T/C 2	Heater 3	T/C 3
77~86.99	HTFR36250430	HZTP[CA,IC]160950	—	—	—	—
.....	.....	.....	—	—	—	—
127~136.99	HTFR36250930	HZTP[CA,IC]161450	—	—	—	—
.....	.....	.....	—	—	—	—
187~194.99	HTFR36251530	HZTP[CA,IC]162050	—	—	—	—
195~204.99	HTFRAL250730	HZTP[CA,IC]160950	—	—	HTGT45270053	HZTP[CA,IC]162050
.....	.....	.....	—	—	.....	.....
255~264.99	HTFRAL251330	HZTP[CA,IC]161250	—	—	HTGT45270053	HZTP[CA,IC]162650
.....	.....	.....	—	—	.....	.....
345~364.99	HTFRAL252130	HZTP[CA,IC]161750	—	—	HTGT45370053	HZTP[CA,IC]163350
453~444.99	HTFRAL250730	HZTP[CA,IC]160950	HTSDAL251330	HZTP[CA,IC]162350	HTGT45370053	HZTP[CA,IC]164050
.....	.....	.....	.....	.....	.....	.....
435~444.99	HTFRAL251130	HZTP[CA,IC]161150	HTSDAL251730	HZTP[CA,IC]162950	HTGT45470053	HZTP[CA,IC]164550
.....	.....	.....	.....	.....	.....	.....
495.99~505	HTFRAL251730	HZTP[CA,IC]161550	HTSDAL251330	HZTP[CA,IC]163550	HTGT45470053	HZTP[CA,IC]165050

TINA AM 15

L	Heater 1	T/C 1	Heater 2	T/C 2	Heater 3	T/C 3
99~108.99	HTFR36250480	HZTP[CA,IC]160550	—	—	—	—
.....	.....	.....	—	—	—	—
169~178.99	HTFR36351180	HZTP[CA,IC]161250	—	—	—	—
.....	.....	.....	—	—	—	—
229~238.99	HTFR36351780	HZTP[CA,IC]161850	—	—	—	—
239~248.99	HTFRAL351080	HZTP[CA,IC]161050	—	—	HTGT35270048	HZTP[CA,IC]162550
.....	.....	.....	—	—	.....	.....
339~348.99	HTFRAL352080	HZTP[CA,IC]161650	—	—	HTGT35370048	HZTP[CA,IC]163550
.....	.....	.....	—	—	.....	.....
409~418.99	HTFRAL352680	HZTP[CA,IC]161950	—	—	HTGT35370048	HZTP[CA,IC]164050
419~428.99	HTFRAL351080	HZTP[CA,IC]161050	HTSDAL351480	HZTP[CA,IC]162750	HTGT35470048	HZTP[CA,IC]164550
.....	.....	.....	.....	.....	.....	.....
619~628.99	HTFRAL352080	HZTP[CA,IC]161650	HTSDAL352480	HZTP[CA,IC]164550	HTGT35670048	HZTP[CA,IC]166550
.....	.....	.....	.....	.....	.....	.....
679.99~689	HTFRAL352680	HZTP[CA,IC]162050	HTSDAL352480	HZTP[CA,IC]165050	HTGT35670048	HZTP[CA,IC]167050

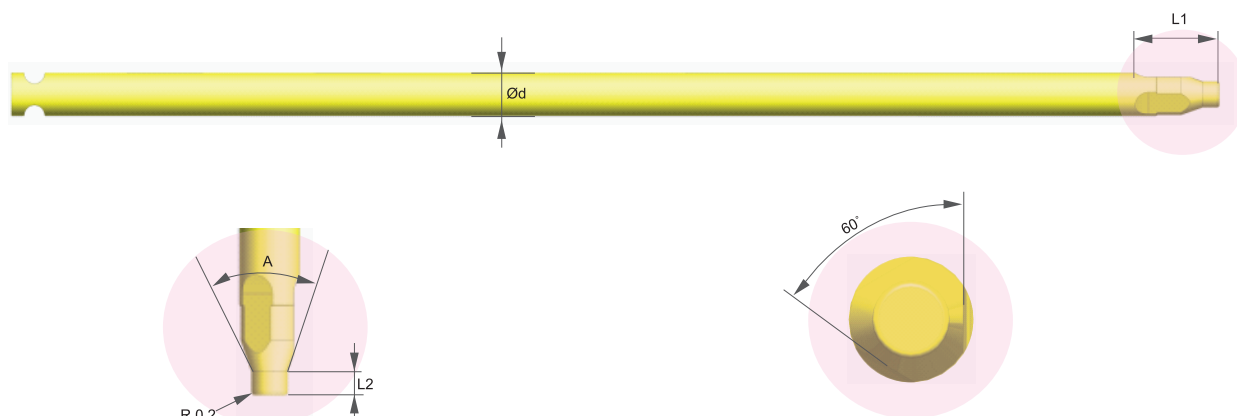
TINA AM 22

L	Heater 1	T/C 1	Heater 2	T/C 2	Heater 3	T/C 3
100~109.99	HTFR36450530	HZTP[CA,IC]160550	—	—	—	—
.....	.....	.....	—	—	—	—
160~169.99	HTFR36351130	HZTP[CA,IC]161250	—	—	—	—
.....	.....	.....	—	—	—	—
220~224.99	HTFR36351730	HZTP[CA,IC]162850	—	—	—	—
225~234.99	HTFRAL450930	HZTP[CA,IC]160950	—	—	HTGT45270053	HZTP[CA,IC]162450
.....	.....	.....	—	—	.....	.....
345~354.99	HTFRAL452130	HZTP[CA,IC]161250	—	—	HTGT45370053	HZTP[CA,IC]164050
.....	.....	.....	—	—	.....	.....
395~404.99	HTFRAL452530	HZTP[CA,IC]161750	—	—	HTGT45370053	HZTP[CA,IC]164550
415~424.99	HTFRAL450930	HZTP[CA,IC]160950	HTSDAL451530	HZTP[CA,IC]162950	HTGT45370053	HZTP[CA,IC]164550
.....	.....	.....	.....	.....	.....	.....
735~744.99	HTFRAL452530	HZTP[CA,IC]161150	HTSDAL453130	HZTP[CA,IC]162250	HTGT45770053	HZTP[CA,IC]168050
.....	.....	.....	.....	.....	.....	.....
785.99~795	HTFRAL453130	HZTP[CA,IC]161550	HTSDAL453130	HZTP[CA,IC]165750	HTGT45770053	HZTP[CA,IC]168550

# Pin Specification of TINA AM Valve & ID Card

系统阀针说明&ID卡

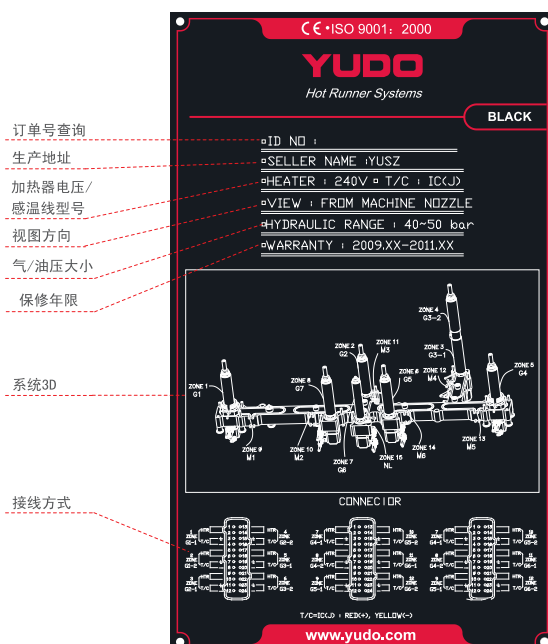
## Pin Specification of TINA AM Valve AM系统阀针说明



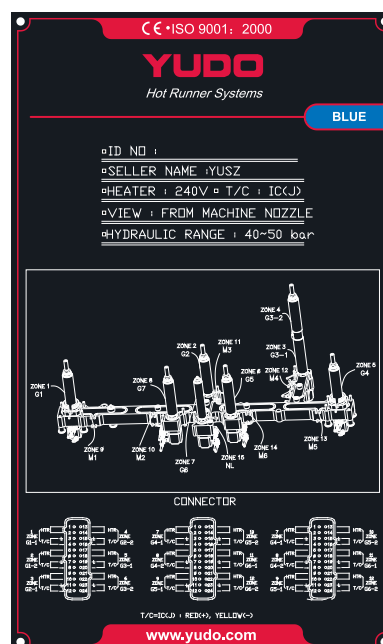
NOZZLE MOLD	GATE Ø	Ød	L1	L2	A
TINA AM 10	1.5,2,2.5	4	15	2	48
TINA AM15	3,3.5,4	6	20	3	50
TINA AM 22	5,6,7	8	20	3.8	50

## ID card 使用说明

### Black Card



### Blue Card



## Blue Card与 Black Card的区别:

Blue Card:支付国际维护费用可以享受海外维护服务。

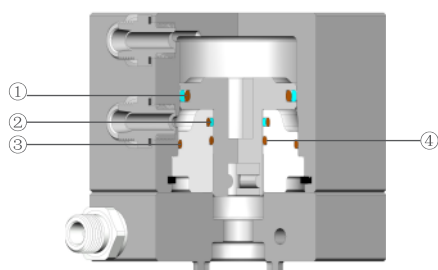
Black Card:在国内可以享受维护服务。



# Pneumatic Cylinder of TINA AM MODU System

## 气缸说明

Structure of Cylinder&O-Ring Code    缸体结构&密封圈编号



### PWP60

1	GS55044-600    ACRRAV352250
2	GH55045-250    ACRRAV261220
3	ACRRAV261400
4	ACRRAV261200

### PWP80

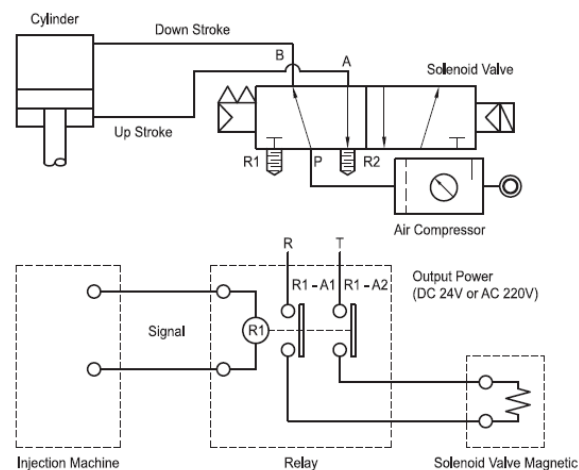
1	GS55046-800    ACRRAV352310
2	GH55045-250    ACRRAV261220
3	ACRRAV261510
4	ACRRAV261200

### PWP90

1	GS55046-900    ACRRAV352350
2	GH55045-250    ACRRAV261220
3	ACRRAV261520
4	ACRRAV261200

## Pneumatic Circuit    气压回路

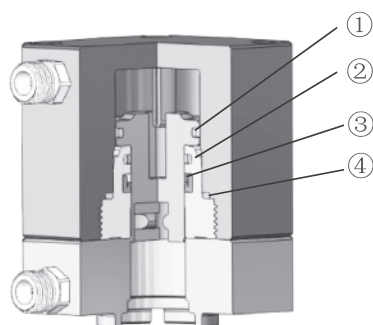
- Solenoid Valve for valve gate hot runner system (2-Position Way).
- A Relay must be Installed between Injection Machine and Solenoid Valve for Valve Gate Hot runner system.
- Output power must be same as the voltage for Solenoid Valve.
- Pneumatic Solenoid Valve Input voltage:DC24V or AC220(YUDO STD).  
Recommendable Pressure:8-10 bar.
- 针阀浇口热流道系统用的电磁阀。
- 在注塑机与电磁阀之间务必设置继电器。
- 注塑信号的输出电压务必与电磁阀磁力输入电压一致。
- 气压电磁阀输入电压：DC24V or AC220(YUDO STD),  
推荐压力：8-10 bar。



# Hydraulic Cylinder of TINA AM MODU System

## 油缸说明

Structure of Cylinder&O-Ring Code      缸体结构&密封圈编号

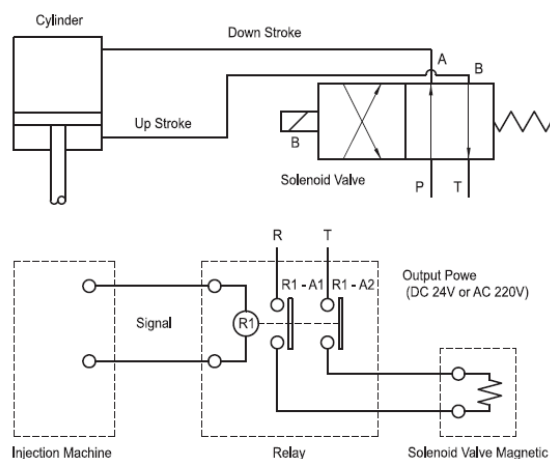
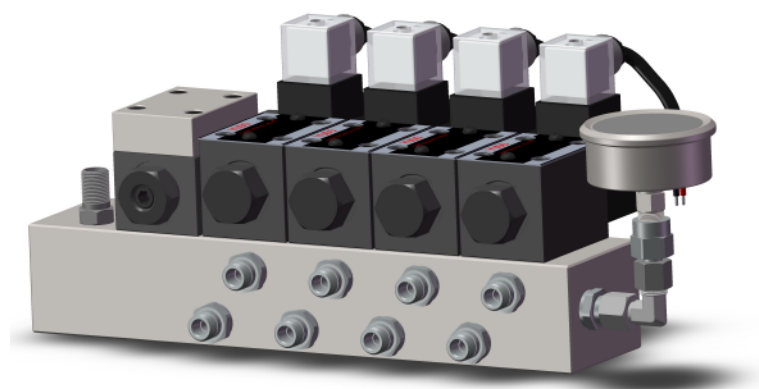


### PWH40

1	G S55046 - 0400	A CRRAV261240
2	G H55045 - 250	ACRRAV261220
3	UF100250	
4	A CRRAV261310	

## Hydraulic Circuit    油压回路

- Solenoid Valve for valve gate Hot Runner system(2-Position Way)
- The Relay must be installed between Injection Machine and Solenoid Valve for Valve Gate hot runner system.
- Relay working volt must be same as Injection Machine signal vantage.
- Hydraulic Solenoid Valve input voltage:DC24V(YUDO STD)or AC220
- Sequence controller for Hydraulic solenoid valve has fixed voltage on manufacturing ,and it can't be changed after operation .
- Hydraulic pressure into the cylinder can be controlled by Relief valve (Recommendable Pressure:~50bar)
- 针阀浇口热流道系统用的电磁阀。
- 电磁阀的磁力输入电压为AC220V时，在注塑机与电磁阀之间务必设置继电器。
- 继电器工作电压必须和注塑机信号电压一致。
- 油压电磁阀输入电压：DC24V(YUDO STD)or AC220。
- 制作油压电磁阀时序控制器时，需固定输出电压。
- 从油缸流入油的压力可通过减压阀来调节。（推荐压力:~50bar）



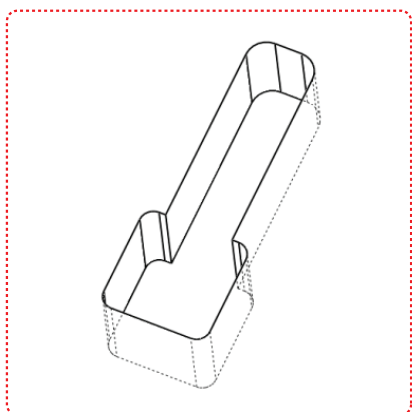
## Mold Machining of TINA AM System

系统模具加工

Machining details at each part 模具加工详细说明

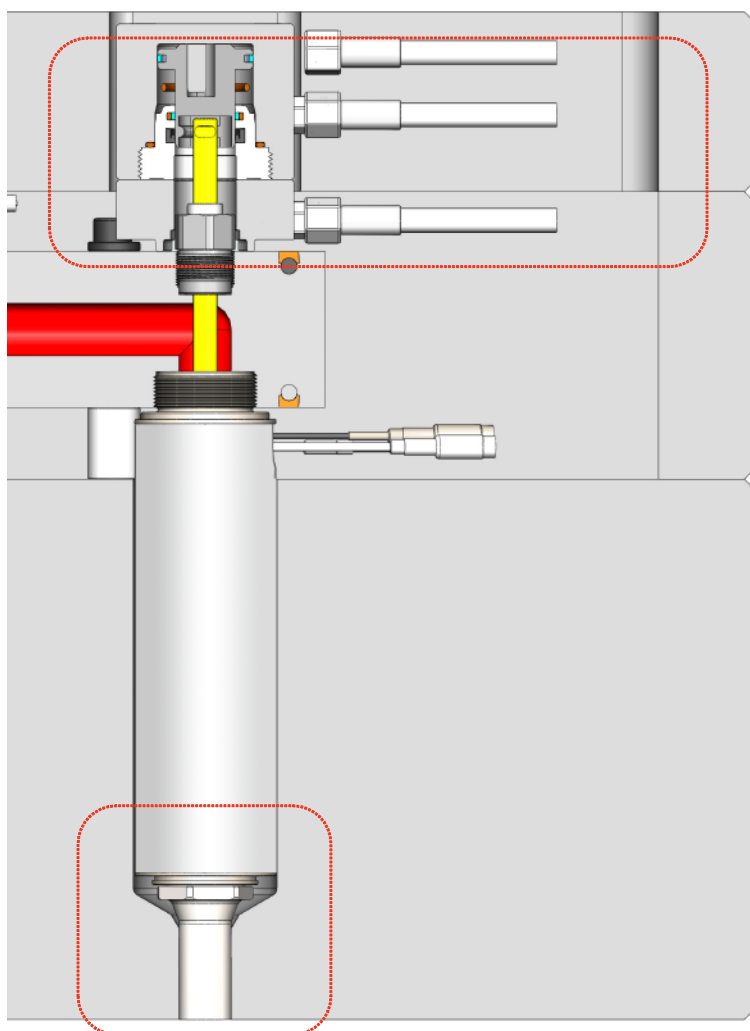
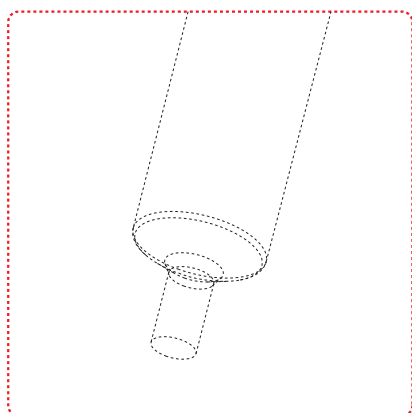
- Cylinder Area (Clamping Plate)

缸体区域（上盖板）



- Gate Area (Cavity Core)

浇口区域（型腔板）

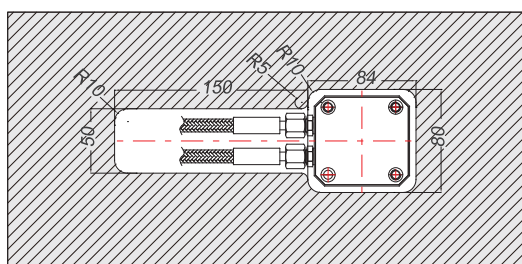


# Hydraulic Cylinder of TINA AM MODU System

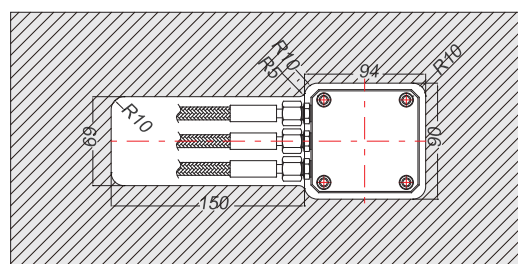
油缸说明

Structure of Cylinder&O-Ring Code    缸体结构&密封圈编号

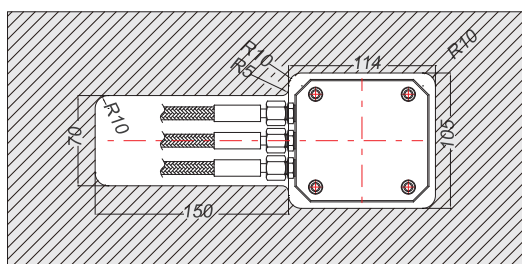
PWH40 CYLINDER



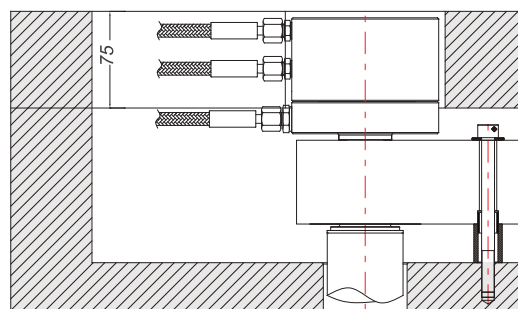
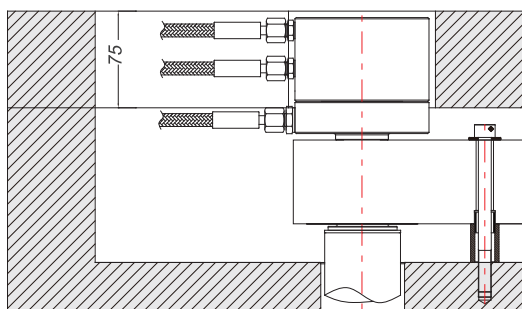
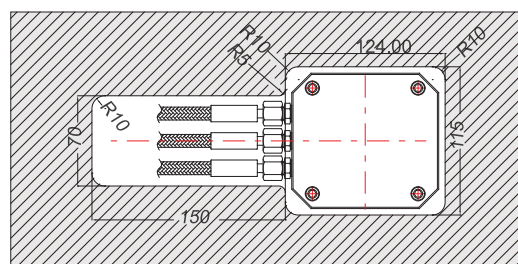
PWP60 CYLINDER



PWP 80 CYLINDER



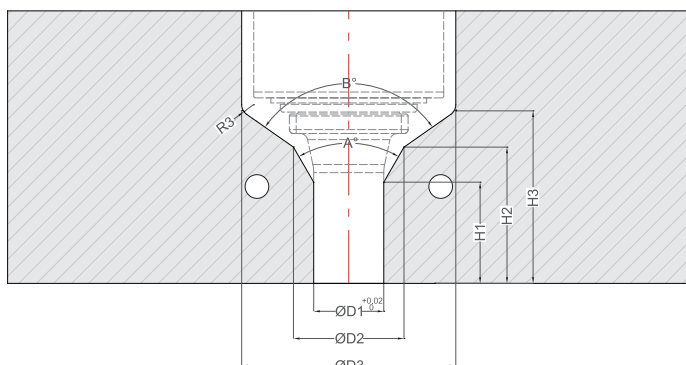
PWP 90 CYLINDER



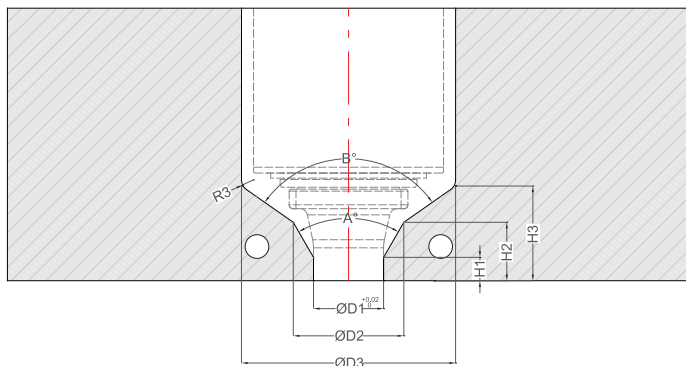
## GATE AREA MACHING

## 浇口区域模具加工

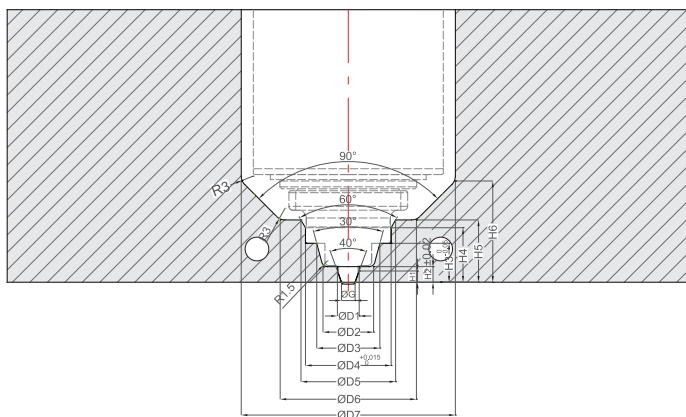
TVL



TVA



W



Unit:mm

System	D1	D2	D3	H1	H2	H3	A	B
TINA GP10	15	19.62	45	26	30	38.89	60	110
TINA GP15	18	28.39	55	26	35	44.32	60	110
TINA GP22	22	28.58	65	38	43.7	54.21	60	120

Unit:mm

System	D1	D2	D3	H1	H2	H3	A	B
TINA GP 10	15	19.62	45	6	10	18.89	60	110
TINA GP 15	18	28.39	55	6	15	24.32	60	110
TINA GP 22	22	28.58	65	8	13.7	24.21	60	120

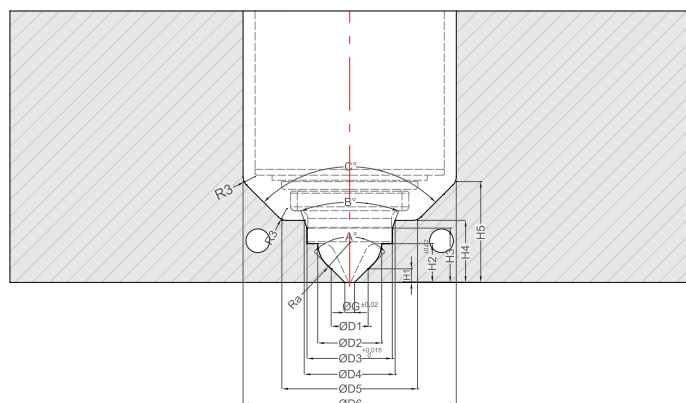
Unit:mm

System	G	D1	D2	D3	D4	D5	D6	D7	H1	H2	H3	H4	H5	H6
TINA GP 10	1,5								1,51					
	2,0	3,6	10,5	12,64	15	16,15	25	40	2,2	3	7	10	11	21
	2,5								2,58					
TINA GP 15	3,0								2,2					
	3,5	5,6	13	16,22	22	24,31	35	55	2,88	4	10	14	16	26
	4,0								3,57					
TINA GP 22	5,0								5,0					
	5,0	7,6	14,98	18,75	28	30,31	42	65	5,0	5	12	16	18	29,5
	6,0								6,0					

## GATE AREA MACHIING

浇口区域模具加工

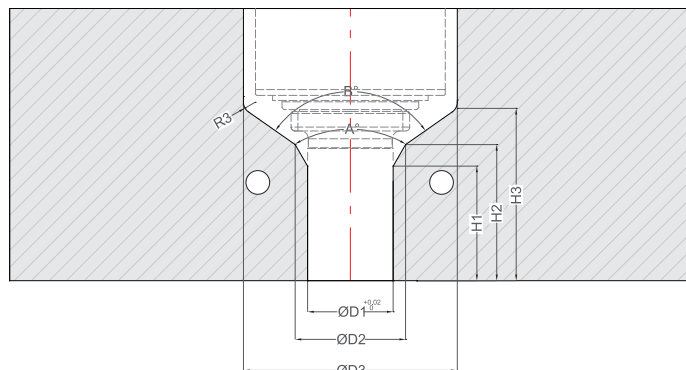
### CC/CT



Unit:mm

System	G	D1	D2	D3	D4	D5	D6	H1	H2	H3	H4	H5	A	B	C	a
TINA GP10	1.0	4.23						1.92								
	1.5	5.95	11	15	16.15	25	45	2.11	7	10	11	21	80	60	90	5.5
	2.0	8.62						2.4								
TINA GP15	1.5	7.11						2.81								
	2.0	8.18	16.5	22	23.46	35	55	3.08	10	14	16	26	90	40	90	8.25
	2.5	9.65						3.37								
TINA GP22	2.0	8.87						3.43								
	3.0	15.88	21.79	28	30.31	42	65	3.94	12	16	18	29.5	90	60	90	11
	3.5	17.38						4.34								
	4.0	14.18						5.09								

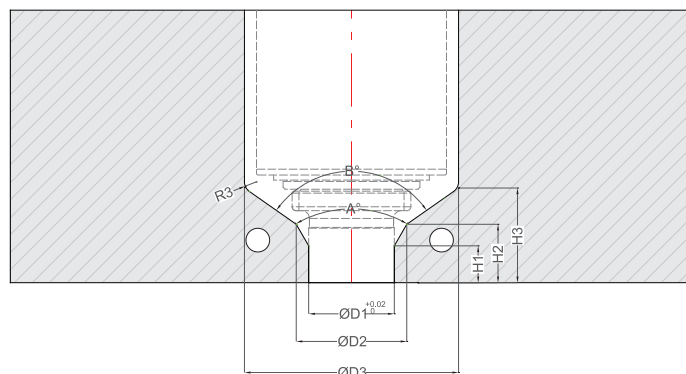
### TLC/TOE



Unit:mm

System	D1	D2	D3	H1	H2	H3	A	B
TINA GP10	15	19.62	45	26	30	38.89	60	110
TINA GP15	22	28.39	55	29.46	35	44.32	60	110
TINA GP22	25	33.08	65	38	45	54.21	60	120

### TAC



Unit:mm

System	D1	D2	D3	H1	H2	H3	A	B
TINA GP10	15	19.62	45	6	10	18.89	60	110
TINA GP15	22	28.39	55	9.46	15	24.32	60	110
TINA GP22	25	33.08	65	8	15	24.21	60	120