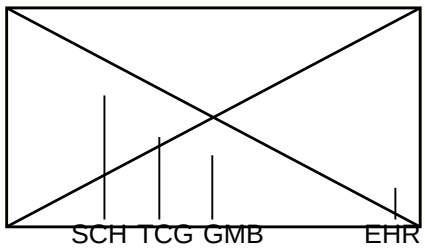
The Hot-One System

Standard Hot-One system

Gate Mate 4™ nozzles

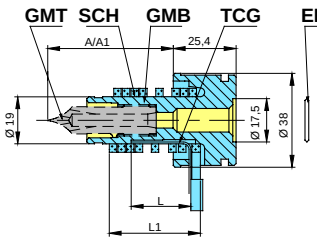
Types **- GMB**

The Gate Mate 4™ nozzle is used under a hot manifold and is ideal for fast-cycling multi-cavity molds and thin walled parts. Its compact design permits centerline-to-centerline distances for use in smaller molds, or increased cavitation in larger molds. Thermocouple placement provides better heater control and the overall nozzle design gives improved thermal insulation.



Heater, thermocouple and tip are both replaceable. The Gate Mate 4™ is available in a wide variety of lengths and can be fitted with five different tip styles, allowing a great flexibility in applications, with most types of plastic materials and a broad range in molding weight.

GMB Gate Mate 4™



Note: Dim A1 refers to the Thru hole tip.
Tip to be ordered separately. (*dim. at room temperature)

REF.	A*	A1*	L	L1
GMB 0150 EX	50,8	49,8	25,0	36,5
GMB 0151 EX	63,5	62,5	37,5	49,0
GMB 0152 EX	76,2	75,2	50,0	62,0
GMB 0153 EX	88,9	87,9	63,0	74,5
GMB 0154 EX	101,6	100,6	75,5	87,5
GMB 0155 EX	127,0	126,0	101,0	113,0
GMB 0156 EX	152,4	151,4	136,5	138,0

SUB-ASSEMBLY consisting of :				
REF. Sub-Assembly	Body	Seal ring	Square coil heater	TC type 'J'
GMB 0150 EX	◆	EHR 0155	SCH 0060	TCG 0060
GMB 0151 EX	◆		SCH 0061	TCG 0061
GMB 0152 EX	◆		SCH 0062	TCG 0062
GMB 0153 EX	◆		SCH 0063	TCG 0063
GMB 0154 EX	◆		SCH 0064	TCG 0064
GMB 0155 EX	◆		SCH 0065	TCG 0065
GMB 0156 EX	◆		SCH 0066	TCG 0066

Tips for Gate Mate 4™ nozzles **- GMT**

Standard

REF.	H	Ø
GMT 2	44	0,61

Used with general purpose materials.
Standard tip is made of copper alloy.

Hard wear

REF.	H	Ø
GMT 0300	44	0,61

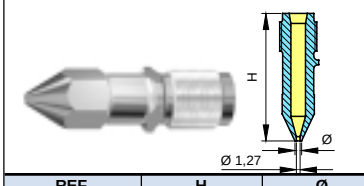
Used with abrasive materials.
Hard wear tip is made of carbide.

Super sharp

REF.	H	Ø
GMT 0301	44	0,25

Used with small gates.
Super sharp tip is made of copper alloy.

Thru hole



REF.	H	Ø
GMT 0302	43	2,29

Used to eliminate potential flow lines.
Thru hole tip is made of copper alloy.

No hole

REF.	H	Ø
GMT 0303	44	0,61

Used to align the flow lines.
No hole tip is made of copper alloy.

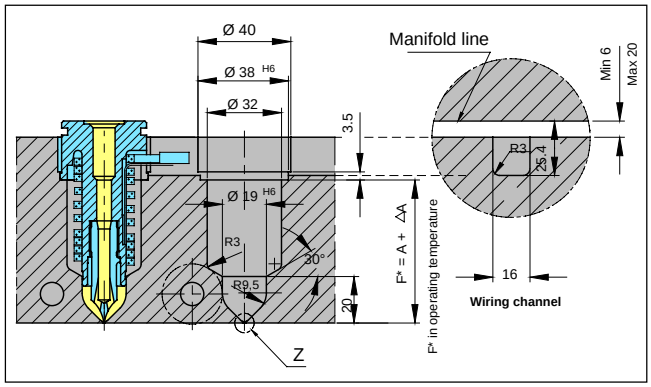
How to order

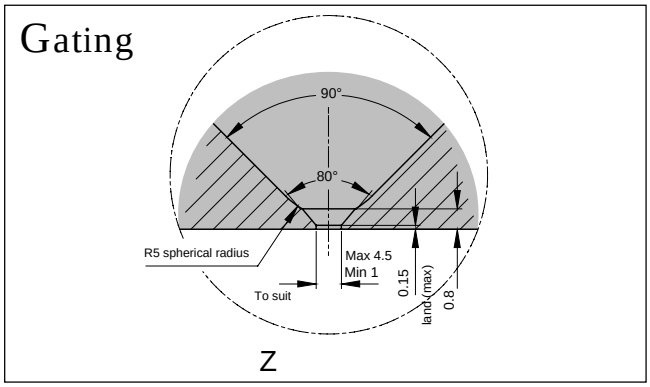
To order a complete Gate Mate 4™ GMB nozzle:

1. Select one of the available Sub-Assembly reference numbers.
2. Select the reference number of the corresponding tip.
3. Both reference numbers as listed under 1. and 2. are required to get the right delivery.

Standard Hot-One system

Installation Instructions - Gate Mate 4™ nozzle **- GMB**





Fitting instructions

1. Machine the nozzle's seat directly into the mold for best results.
2. For best gate appearance (lowest gate vestige), design tip to be ,0 to 0,13 mm back from the cavity at room temperature. Maintain a minimum clearance of 0,25 mm around the tip through the gate in the "hot" position. To achieve best material flow, position tip up to 0,5 mm maximum back from cavity. This position will result in a higher gate vestige.
3. Provide maximum water cooling in cavity insert around gate.
4. Machine seat area following dimensions carefully. Hold the 19^{H6} diameter, as this is a seal-off dimension.
5. Ensure minimal thermal contact between nozzle and mold, especially under nozzle shoulder.
6. Route wires through wire channel in retainer plate.
7. Provide a gate dimple on core/cavity opposite gate, this will allow for best material flow.

REF.	A	A1
GMB 0150 EX	50,8	49,8
GMB 0151 EX	63,5	62,5
GMB 0152 EX	76,2	75,2
GMB 0153 EX	88,9	87,9
GMB 0154 EX	101,6	100,6
GMB 0155 EX	127,0	126,0
GMB 0156 EX	152,4	151,4

Dim. A1 refers to the thru hole tip.
IMPORTANT: Use also "A" value for the installation of thru hole tips.

Note:
The expansion factor must be taken into consideration prior to machining for, and installing nozzle.
$\Delta A = A \times \alpha_c \times 10^{-6} \times \Delta T$
$\alpha_c = 16,8 - 0,026 \times A$
ΔT = nozzle set point - 20°C

Example:
Given a 127 mm A dimension, with a nozzle setpoint temperature of 260 °C.
$\Delta A = 127 \times (16,8 - 0,026 \times 127) \times 10^{-6} \times (260 - 20\ °C) = 0,41$ mm
Thus F* = 127 + 0,41 ≅ 127,41 mm

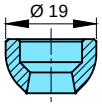
Please note that the above information is given as an example and not valid for GMT 0300. Use half the value for carbide tips. Variations may occur based on mold configurations and cooling factor. In some instances, it may be necessary to obtain an empirical factor.

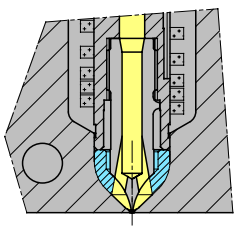
Gate shell insulator **- GSI**

It fills the space near the gate in Gate Mate 4™ type applications. This avoids stagnation of the injected plastic material near the gate, and makes color changes easier. The material used is virgin Polyimide, selected for its unique mechanical, thermal and chemical resistance. Its stability in long periods of time and its low thermal conductivity make it an ideal choice. Moreover, the slightly elastic behaviour of virgin Polyimide ensures a perfect sealing of the gate shell space. The Gate shell insulator is particularly suitable when injecting plastic materials that degrade easily, either short or long term. In many cases, the frozen layer of the processed resin will be eliminated completely so that no stagnation will occur.

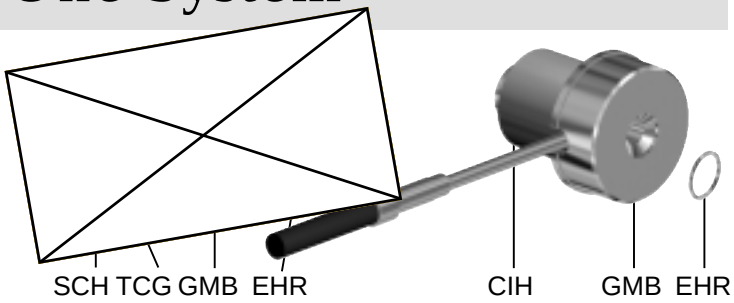
REF.
GSI 0001

Installation





The Hot-One System

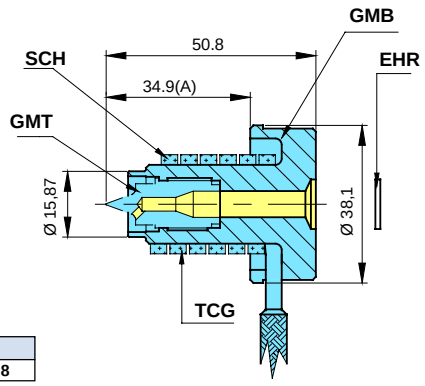


Standard Hot-One system

Mini Gate Mate Nozzles

Types - **GMB**

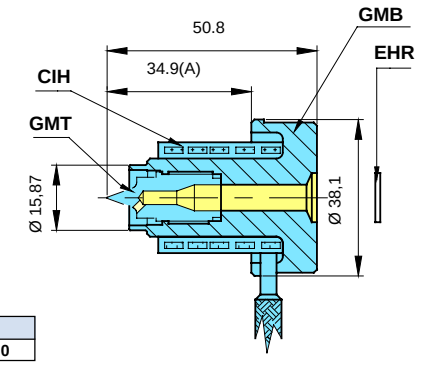
Mini Gate Mate with Square coil heater



REF.
GMB 0108

ASSEMBLY consisting of :					
REF. Assembly	Body	Seal ring	Square coil heater	TC type 'J'	Tip
GMB 0108	◆	EHR 0155	SCH 0004	TCG 0100	GMT 0100

Mini Gate Mate with Cast-in heater

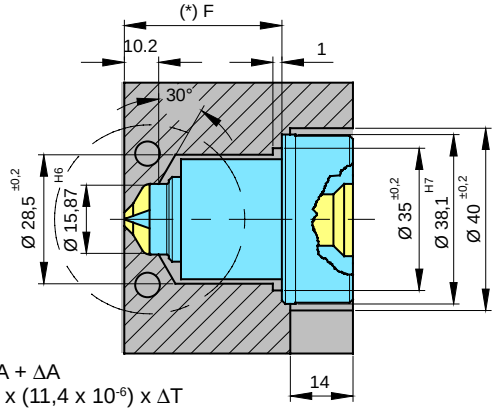


REF.
GMB 0100

ASSEMBLY consisting of :				
REF. Assembly	Body	Seal ring	Cast-in heater with TC type 'J'	Tip
GMB 0100	◆	EHR 0155	CIH 0100	GMT 0100

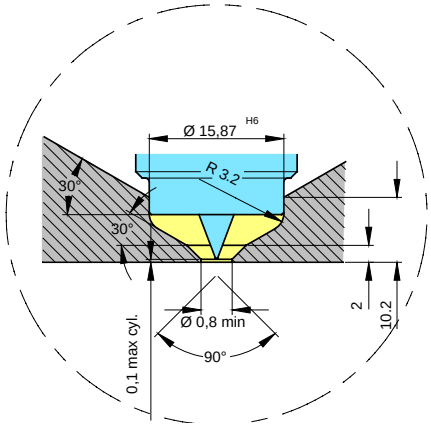
Remark: Tip is not recommended for abrasive materials.
For applications involving highly abrasive engineering grade resins, contact ***D-M-E***.

Installation Instructions



(*)F = A + ΔA
ΔA = A x (11,4 x 10^{-6}) x ΔT
ΔT = T max °C - 20 °C

Gating



Standard Hot-One system

Nozzles

Spare Parts **- EHA - CIA - GMB**

		Spare parts for nozzles					
	Quick Selection Chart Hot-One Nozzles	Seal ring	Square coil heater + TC type 'J'	Cast-in heater + TC type 'J'	Square coil heater without TC	Thermo-couple	Tip
	REF. EHA	REF. EHR	REF. SCH	REF. CIH	REF. SCH	REF. TCG	REF. GMT
Conventional nozzles Series 250	EHA 0001 EX	EHR 0154	SCH 0081				
	EHA 0002 EX		SCH 0082				
	EHA 0003 EX		SCH 0083				
	EHA 0004 EX		SCH 0084				
	EHA 0005 EX		SCH 0085				
	EHA 0006 EX		SCH 0086				
	EHA 0007 EX		SCH 0087				
Conventional nozzles Series 375	EHA 0008 EX	EHR 0155	SCH 0088				
	EHA 0009 EX		SCH 0089				
	EHA 0010 EX		SCH 0090				
	EHA 0011 EX		SCH 0091				
	EHA 0012 EX		SCH 0092				
	EHA 0013 EX		SCH 0093				
	EHA 0014 EX		SCH 0094				
	EHA 0015 EX		SCH 0095				
Conventional nozzles Series 625	EHA 0016 EX	EHR 0156	SCH 0096				
	EHA 0017 EX		SCH 0097				
	EHA 0018 EX		SCH 0098				
	EHA 0019 EX		SCH 0099				
	EHA 0020 EX		SCH 0100				
	EHA 0021 EX		SCH 0101				
	EHA 0022 EX		SCH 0102				
	CIA	EHR	SCH	CIH	SCH	TCG	GMT
High performance nozzles Series 250	CIA 0001 EX	EHR 0154		CIH 0081 EX			
	CIA 0002 EX			CIH 0082 EX			
	CIA 0003 EX			CIH 0083 EX			
	CIA 0004 EX			CIH 0084 EX			
	CIA 0005 EX			CIH 0085 EX			
	CIA 0006 EX			CIH 0086 EX			
	CIA 0007 EX			CIH 0087 EX			
High performance nozzles Series 375	CIA 0008 EX	EHR 0155		CIH 0088 EX			
	CIA 0009 EX			CIH 0089 EX			
	CIA 0010 EX			CIH 0090 EX			
	CIA 0011 EX			CIH 0091 EX			
	CIA 0012 EX			CIH 0092 EX			
	CIA 0013 EX			CIH 0093 EX			
	CIA 0014 EX			CIH 0094 EX			
	CIA 0015 EX			CIH 0095 EX			
	GMB	EHR	SCH	CIH	SCH	TCG	GMT
Gate Mate 4™	GMB 0150 EX	EHR 0155			SCH 0060	TCG 0060	
	GMB 0151 EX				SCH 0061	TCG 0061	
	GMB 0152 EX				SCH 0062	TCG 0062	
	GMB 0153 EX				SCH 0063	TCG 0063	
	GMB 0154 EX				SCH 0064	TCG 0064	
	GMB 0155 EX				SCH 0065	TCG 0065	
	GMB 0156 EX				SCH 0066	TCG 0066	
	GMB	EHR	SCH	CIH	SCH	TCG	GMT
Mini Gate Mate	GMB 0108	EHR 0155			SCH 0004	TCG 0100	GMT 0100
	GMB 0100			CIH 0100			

To be ordered separately				
Sprue gate EHT	Extended sprue gate EHT	Ring gate EHT	Point gate EHT	
Standard GMT	Hard wear GMT	Super sharp GMT	Thru hole GMT	No hole GMT
REF. EHT	REF. EHT	REF. EHT	REF. EHT	REF. GMT
EHT 0010 EX EHT 0011 EX EHT 0012 EX	EHT 0013 EX EHT 0014 EX EHT 0015 EX	EHT 1001 EX EHT 1002 EX EHT 1003 EX EHT 1004 EX	EHT 0005 EX EHT 0041 EX	
EHT 0016 EX EHT 0017 EX EHT 0018 EX	EHT 0019 EX EHT 0020 EX EHT 0021 EX	EHT 1006 EX EHT 1007 EX EHT 1008 EX EHT 1009 EX EHT 1037 EX EHT 1038 EX	EHT 0039 EX EHT 0042 EX	
EHT 0022 EX	EHT 0023 EX	EHT 1040 EX		
Sprue gate EHT	Ext. sprue gate EHT	Ring gate EHT	Point gate EHT	
EHT 0010 EX EHT 0011 EX EHT 0012 EX	EHT 0013 EX EHT 0014 EX EHT 0015 EX	EHT 1001 EX EHT 1002 EX EHT 1003 EX EHT 1004 EX	EHT 0005 EX EHT 0041 EX	
EHT 0016 EX EHT 0017 EX EHT 0018 EX	EHT 0019 EX EHT 0020 EX EHT 0021 EX	EHT 1006 EX EHT 1007 EX EHT 1008 EX EHT 1009 EX EHT 1037 EX EHT 1038 EX	EHT 0039 EX EHT 0042 EX	
Standard GMT	Hard wear GMT	Super sharp GMT	Thru hole GMT	No hole GMT
GMT 2	GMT 0300	GMT 0301	GMT 0302	GMT 0303

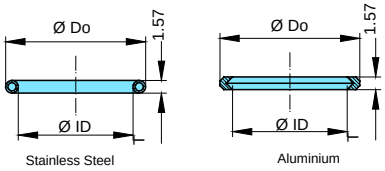
Standard Hot-One system

Nozzles

Spare Parts - **EHA - CIA - GMB**

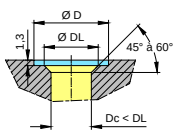
EHR

Seal ring



REF.	Dc nom.	ID	Do	D	DL max.	Mat.
EHR 0154	6,30	11,10	14,25	14,35	11,10	Aluminium
EHR 0155	9,50	14,27	17,42	17,55	12,70	
EHR 0156	22,20	23,80	26,97	27,08	23,80	
EHR 0160	12,70	17,45	20,62	20,80	16,00	
EHR 0162	16,00	19,05	22,22	22,37	17,50	
EHR 1145	4,00	6,70	9,50	9,55	5,20	Stainless Steel
EHR 1150	5,25	9,56	12,70	12,75	8,00	
EHR 1154	8,00	11,10	14,25	14,35	9,50	
EHR 1155	9,50	14,27	17,42	17,55	12,70	
EHR 1156	18,00	23,80	26,97	27,08	23,80	
EHR 1160	12,70	17,45	20,62	20,80	16,00	
EHR 1162	16,00	19,05	22,22	22,37	17,50	
EHR 1165	17,50	21,00	24,14	24,20	18,00	
EHR 1168	22,20	26,97	30,18	30,25	25,40	

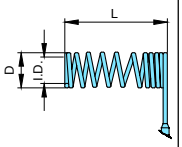
Installation



SCH

Square coil heater with thermocouple type 'J' for EHA

REF.	For	L	ID	D	Watt 230V	Series
SCH 0081	EHA 0001 EX	51,00	15,37	21,00	275	250
SCH 0082	EHA 0002 EX	63,50			320	
SCH 0083	EHA 0003 EX	76,00			370	
SCH 0084	EHA 0004 EX	89,00			390	
SCH 0085	EHA 0005 EX	101,50			460	
SCH 0086	EHA 0006 EX	127,00			460	
SCH 0087	EHA 0007 EX	152,50			500	
SCH 0088	EHA 0008 EX	54,00	21,72	27,00	370	375
SCH 0089	EHA 0009 EX	66,50			415	
SCH 0090	EHA 0010 EX	79,50			500	
SCH 0091	EHA 0011 EX	92,00			640	
SCH 0092	EHA 0012 EX	105,00			735	
SCH 0093	EHA 0013 EX	130,00			825	
SCH 0094	EHA 0014 EX	156,50			920	
SCH 0095	EHA 0015 EX	181,00			1000	
SCH 0096	EHA 0016 EX	101,50	37,47	43,00	920	625
SCH 0097	EHA 0017 EX	127,00			950	
SCH 0098	EHA 0018 EX	152,50			1000	
SCH 0099	EHA 0019 EX	178,00			1000	
SCH 0100	EHA 0020 EX	203,00			1100	
SCH 0101	EHA 0021 EX	228,50			1100	
SCH 0102	EHA 0022 EX	254,00			1100	

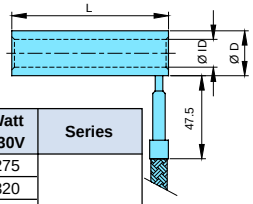


Length of wires: 850 mm
Black wire 230 V
Black wire 230 V
White wire + } TC
Red wire - } type 'J'

CIH

Cast-in heater with thermocouple type 'J' for CIA & GMB

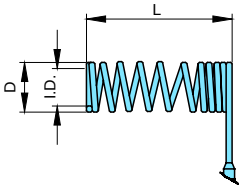
Length of wires 850 mm
Black wire 230 V
Black wire 230 V
White wire + } TC type 'J'
Red wire - }



REF.	For	L	ID	D	Watt 230V	Series
CIH 0081	CIA 0001 EX	52,37	15,85	26,97	275	250
CIH 0082	CIA 0002 EX	65,07			320	
CIH 0083	CIA 0003 EX	77,77			370	
CIH 0084	CIA 0004 EX	90,47			390	
CIH 0085	CIA 0005 EX	103,17			460	
CIH 0086	CIA 0006 EX	128,57			460	
CIH 0087	CIA 0007 EX	153,97			500	
CIH 0088	CIA 0008 EX	55,42	22,20	33,32	370	375
CIH 0089	CIA 0009 EX	68,12			415	
CIH 0090	CIA 0010 EX	80,82			500	
CIH 0091	CIA 0011 EX	93,52			640	
CIH 0092	CIA 0012 EX	106,20			735	
CIH 0093	CIA 0013 EX	131,62			825	
CIH 0094	CIA 0014 EX	157,02			920	
CIH 0095	CIA 0015 EX	182,42			1000	
CIH 0100	GMB 0100	30,00	19,05	27,00	230	Mini Gate Mate

SCH

Square coil heater without thermocouple for GMB

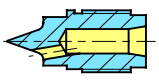


Length of wires 850 mm
Black wire 230 V
Black wire 230 V
White wire + } TC type 'J'
Red wire - }

REF.	L	D	ID	Watt 230V	For
SCH 0060	36,50	25,90	19,05	230	GMB 0150 EX
SCH 0061	49,00			275	GMB 0151 EX
SCH 0062	62,00			320	GMB 0152 EX
SCH 0063	74,50			370	GMB 0153 EX
SCH 0064	87,50			390	GMB 0154 EX
SCH 0065	113,00			460	GMB 0155 EX
SCH 0066	138,00			460	GMB 0156 EX
SCH 0004	30,00	24,00	18,54	230	Mini Gate Mate

GMT

Tip for Mini Gate Mate

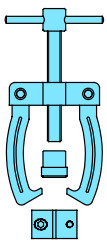


Tip is not recommended for abrasive materials

REF.	For
GMT 0100	GMB 0108
	GMB 0100

CIH

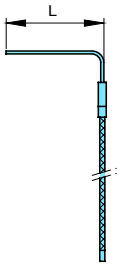
Removal tool
for Cast-in heaters



REF.
CIH 9000

TCG

Thermocouple



REF.	L	For
TCG 0060	25,00	GMB 0150 EX
TCG 0061	37,50	GMB 0151 EX
TCG 0062	50,00	GMB 0152 EX
TCG 0063	63,00	GMB 0153 EX
TCG 0064	75,50	GMB 0154 EX
TCG 0065	101,00	GMB 0155 EX
TCG 0066	136,50	GMB 0156 EX
TCG 0100	25,20	GMB 0108

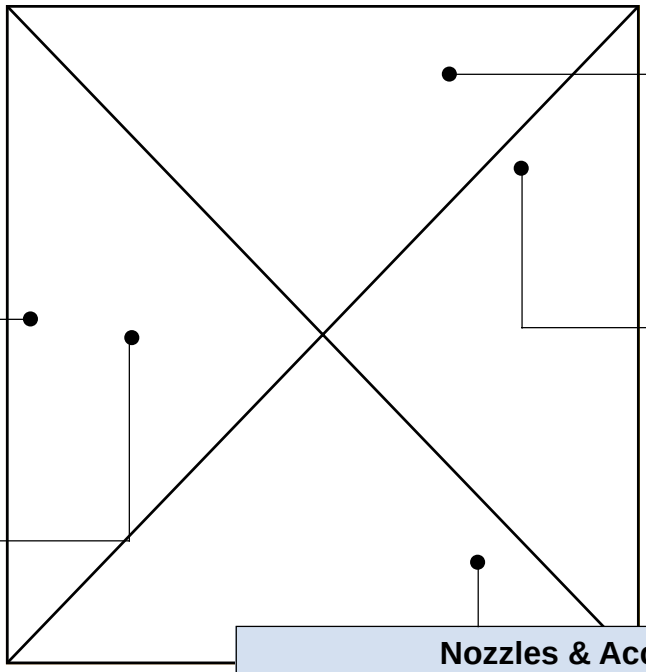
White wire +
Red wire -

The Hot-One System

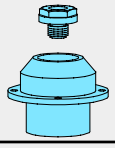
The Hot-One concept

Micro system

The benefit of the Micro Hot-One system can be subscribed to the implementation of a new and revolutionary generation of heating elements, developed and patented by ***D-M-E***.
These insulated and cast-in heating elements feature a special multi-layer construction and reduce heat loss to the mold by up to 60 %.
Because of the flat temperature profile and fast reaction to temperature fluctuations, the Micro Hot-One system is most suitable for materials that are difficult to process.
A nozzle diameter of 17 mm and minimal heat loss to the mold allow for center-to-center distances below 20 mm without accumulation of heat.
The air insulation between heating element and mold can be limited to 0.3 - 0.5 mm.
Because of the small dimension and geometry of the orifice diameter, color and material change are realized very quickly.
Shot weights between 0.5 g and 12.0 g in single or multi-cavity molds are possible.
The consequent usage of special titanium alloys for all system components in contact with the mold helps with the heat regulation of this Hot-One system.



Manifold Ancillaries
Heated nozzle adapters



EHN
EHL
p. 66

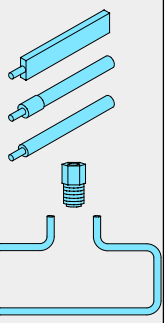
HR
DR
DI
WTO
BHA
p. 67

Manifold Ancillaries
End caps

EHM
GZ
EEP
EDR
p. 71

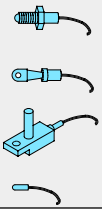
EHM
EEP
p. 71

Manifold Ancillaries
Cartridge heaters



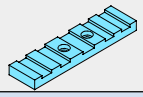
CHR
CHS
ECH
EHP
Tubular
p. 68/70

Thermocouples (no view)



ETC
ETC
ETC
TCM
p.71/72

Manifold Ancillaries
Riser pads



ERP
p. 72

Spacer rings (no view)

ESR
p. 72

Support blocks (no view)

ECB
p. 72

Nozzles & Accessories

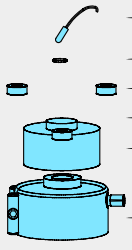
MEP

DEP
MHD
MDS
p. 42

MSP

MSR
DSP
MHD
MDS
p. 43

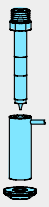
MGS



TCM
EHR
ECB
WTO
MGS
BHF

MEP
MEO
p. 44/45

MEO



DEO
MHD
MDS
p. 42

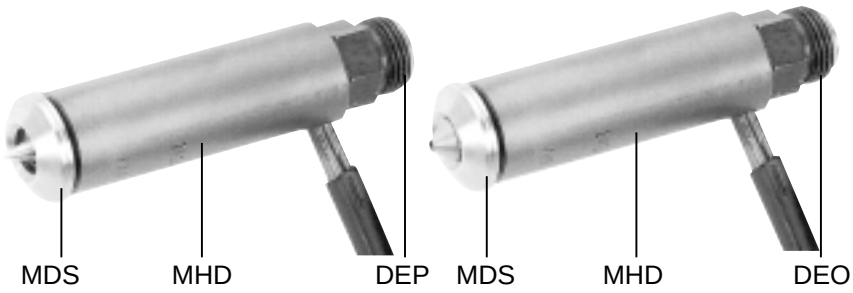
MSO

MSR
DSO
MHD
MDS
p. 43

The Hot-One System

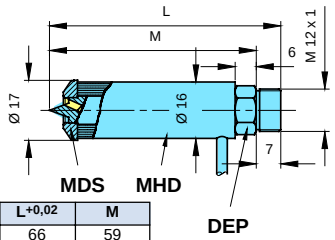
Micro Hot-One system
Screw head nozzles

Types **- Point gate - MEP**
- Thru hole - MEO



MEP

Point gate type

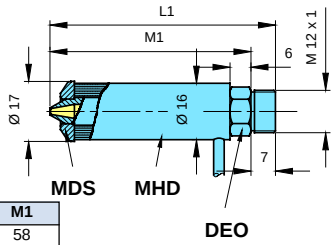


REF.	REF.	L+0,02	M
MEP 0060	MEP 1060	66	59
MEP 0070	MEP 1070	76	69
MEP 0080	MEP 1080	86	79

ASSEMBLY consisting of :				
REF. Assembly	Body	Flange	Cast-in heater + TC type 'J'	Mat.
MEP 0060	DEP 0060	MDS 0001	MHD 0044	Standard
MEP 0070	DEP 0070		MHD 0054	
MEP 0080	DEP 0080		MHD 0064	
MEP 1060	DEP 1060	MDS 0001	MHD 0044	Wear resistant
MEP 1070	DEP 1070		MHD 0054	
MEP 1080	DEP 1080		MHD 0064	

MEO

Thru hole type

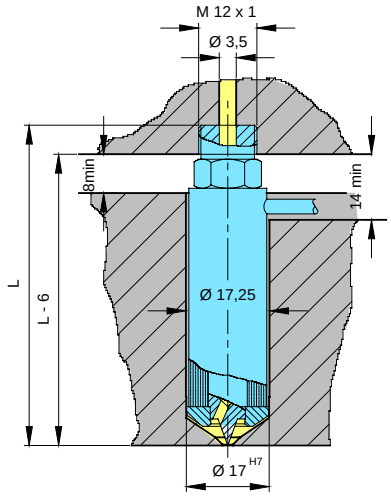


REF.	L1+0,02	M1
MEO 0060	65	58
MEO 0070	75	68
MEO 0080	85	78

ASSEMBLY consisting of :				
REF. Assembly	Body	Flange	Cast-in heater + TC type 'J'	Mat.
MEO 0060	DEO 0060	MDS 0001	MHD 0044	Standard
MEO 0070	DEO 0070		MHD 0054	
MEO 0080	DEO 0080		MHD 0064	

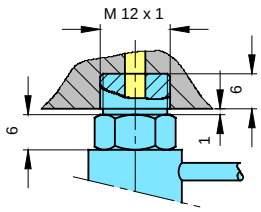
Installation Instructions

Point gate type



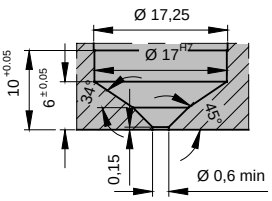
REF.	REF.	L
MEP 0060	MEP 1060	66
MEP 0070	MEP 1070	76
MEP 0080	MEP 1080	86

Screw head details

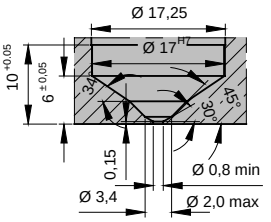


Gating

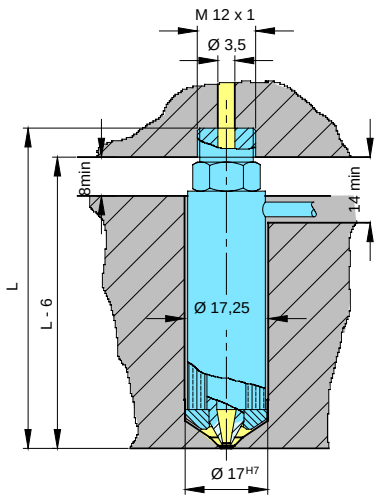
Point gate



Thru hole



Thru hole type



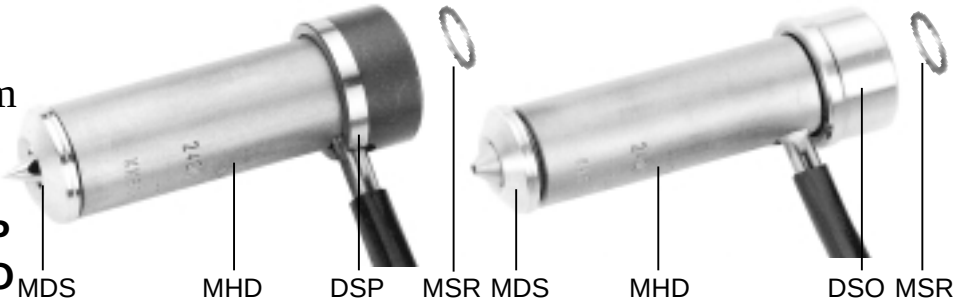
REF.	L
MEO 0060	66
MEO 0070	76
MEO 0080	86

The Hot-One System

Micro Hot-One system

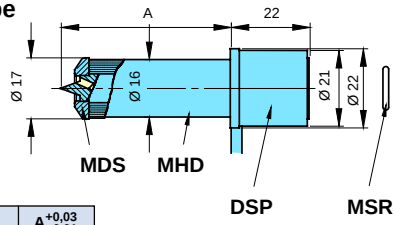
Flat head nozzles

Types **- Point gate - MSP**
- Thru hole - MSO



MSP

Point gate type

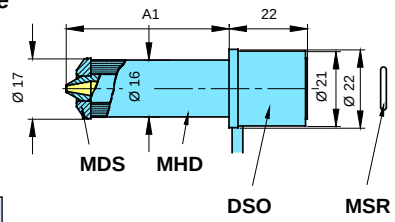


REF.	REF.	$A^{+0,03}_{-0,01}$
MSP 0060	MSP 1060	47,5
MSP 0070	MSP 1070	57,5
MSP 0080	MSP 1080	67,5

ASSEMBLY consisting of :					
REF. Assembly	Body	Flange	Cast-in heater + TC type 'J'	Seal ring	Mat.
MSP 0060	DSP 0060	MDS 0001	MHD 0044	MSR 6408	Standard
MSP 0070	DSP 0070		MHD 0054		
MSP 0080	DSP 0080		MHD 0064		
MSP 1060	DSP 1060	MDS 0001	MHD 0044	MSR 6408	Wear resistant
MSP 1070	DSP 1070		MHD 0054		
MSP 1080	DSP 1080		MHD 0064		

MSO

Thru hole type

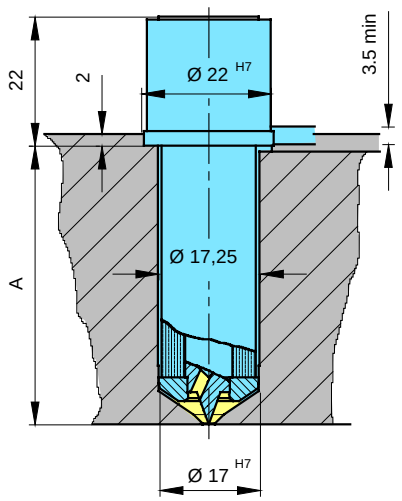


REF.	$A1^{+0,03}_{-0,01}$
MSO 0060	46,5
MSO 0070	56,5
MSO 0080	66,5

ASSEMBLY consisting of :					
REF. Assembly	Body	Flange	Cast-in heater + TC type 'J'	Seal ring	Mat.
MSO 0060	DSO 0060	MDS 0001	MHD 0044	MSR 6408	Standard
MSO 0070	DSO 0070		MHD 0054		
MSO 0080	DSO 0080		MHD 0064		

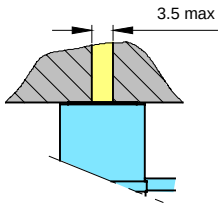
Installation Instructions

Point gate type



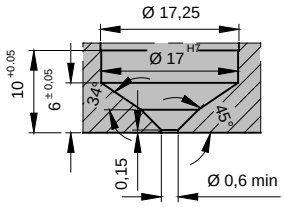
REF.	REF.	A
MSP 0060	MSP 1060	47,5
MSP 0070	MSP 1070	57,5
MSP 0080	MSP 1080	67,5

Flat head details

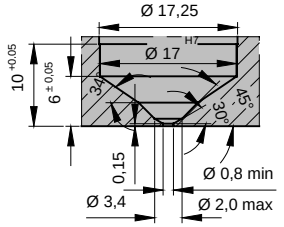


Gating

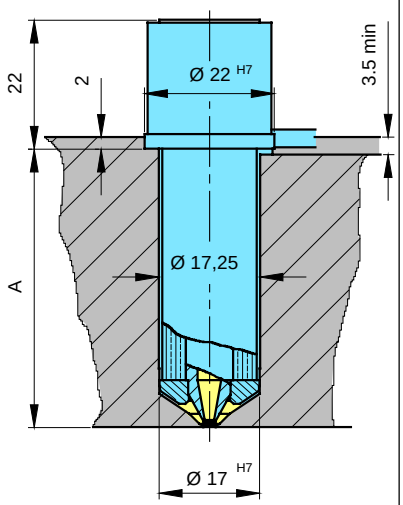
Point gate



Thru hole



Thru hole type



REF.	A
MSO 0060	47,5
MSO 0070	57,5
MSO 0080	67,5

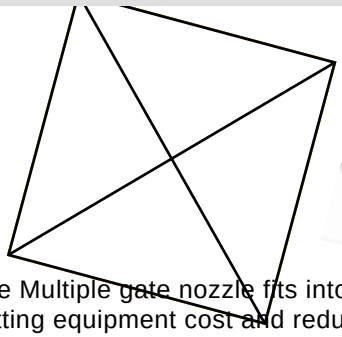
The Hot-One System

Micro Hot-One system

Multiple gate nozzles

Types - **MGS**

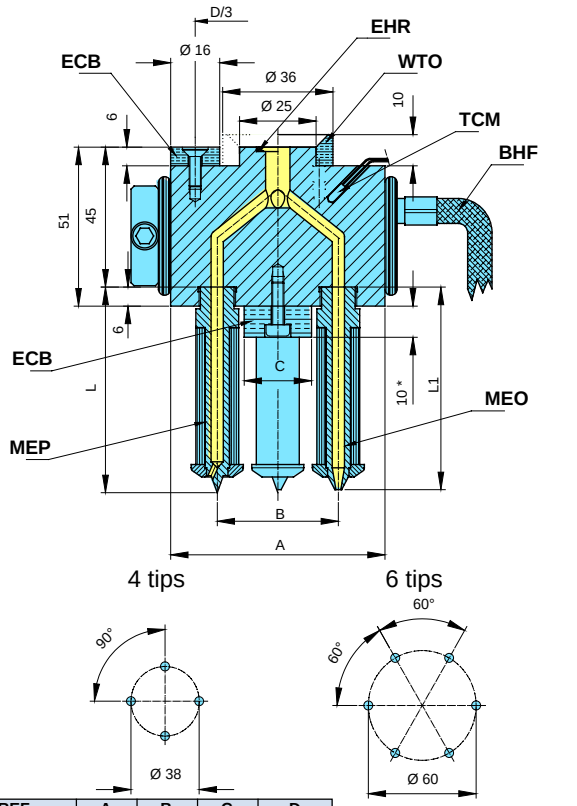
The Multiple gate nozzle developed by ***D-M-E*** increases the potential number of cavities for a mold by allowing up to six cavities per nozzle. It provides precise temperature control resulting in an excellent temperature balance between the individual gates.



The Multiple gate nozzle fits into a small mold base, cutting equipment cost and reducing the size of the injection machine required. The nozzle tips are made of a wear resistant material that provides high thermal conductivity and long service life.

MGS

Multiple gate nozzles



REF.	A	B	C	D
MGS 3802	70	38	20	54/3
MGS 3804	70	38	20	54/3
MGS 6003	90	60	40	72/3
MGS 6006	90	60	40	72/3

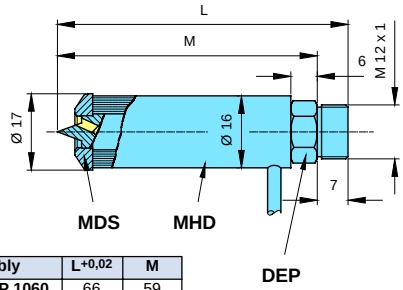
* min. 6 mm

SUB-ASSEMBLY consisting of :							
REF. Sub-Assembly	Body	Support blocks	Support blocks	Insula-ting ring	Seal ring	Band heater	TC Type 'J'
MGS 3802	◆	ECB 0501	ECB 0500	WTO 3000	EHR 1150	BHF 3870	TCM 0003
MGS 3804	◆						
MGS 6003	◆	ECB 0502				BHF 3890	
MGS 6006	◆						

Tips for Multiple gate nozzles

MEP

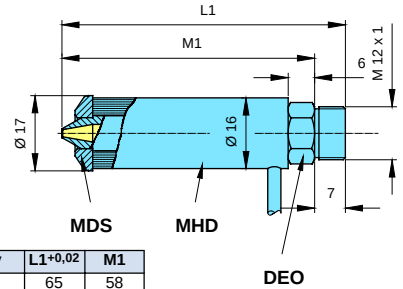
Screw head nozzle - point gate type



REF. Assembly		L+0,02	M
MEP 0060	MEP 1060	66	59
MEP 0070	MEP 1070	76	69
MEP 0080	MEP 1080	86	79

MEO

Screw head nozzle - thru hole type



REF. Assembly	L1+0,02	M1
MEO 0060	65	58
MEO 0070	75	68
MEO 0080	85	78

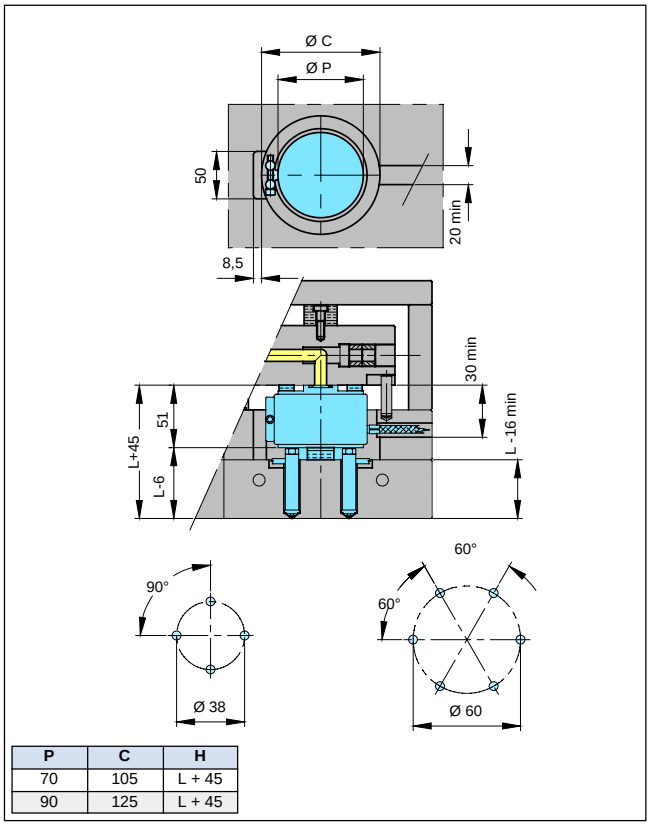
How to order

To order a complete Multiple gate nozzle:
1. Select one of the available Sub-Assembly reference numbers.
2. Select the reference number of the corresponding Point gate or Thru hole tip of the Screw head type.
3. Both reference numbers as listed under 1. and 2. are required to get the right delivery.

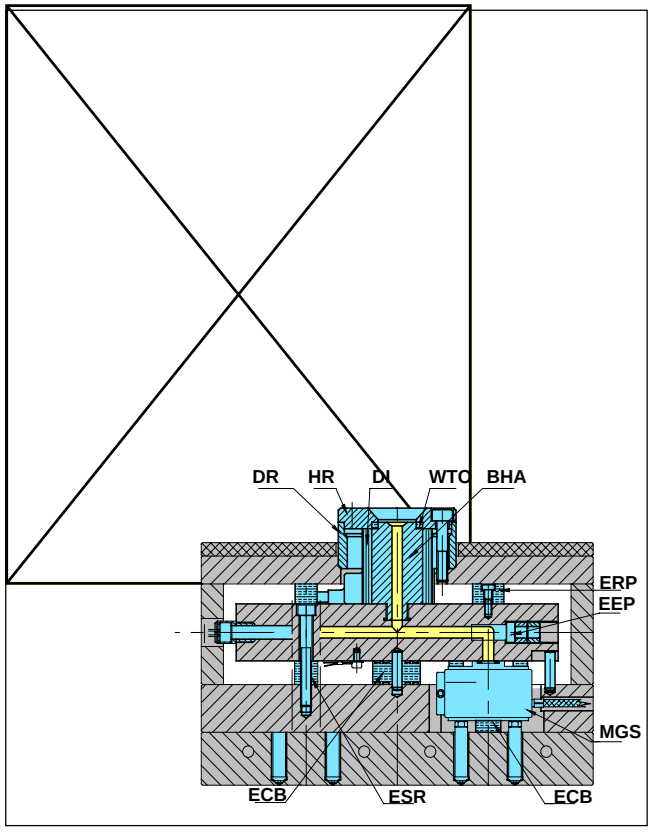
Remarks: For single application, use the insulating ring WTO 3000. Radius to be made by customer. For applications under a manifold, use the seal ring EHR 1150.

Micro Hot-One system

Installation Instructions - Multiple gate nozzles **- MGS**

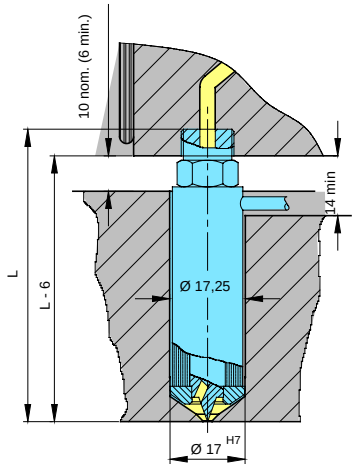


P	C	H
70	105	L + 45
90	125	L + 45



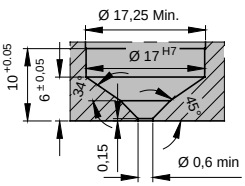
Installation Instructions - Tips for Multiple gate nozzles **- MEP - MEO**

Screw head nozzles
Point gate type

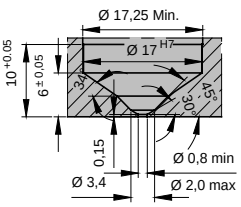


REF.	REF.	L
MEP 0060	MEP 1060	66
MEP 0070	MEP 1070	76
MEP 0080	MEP 1080	86

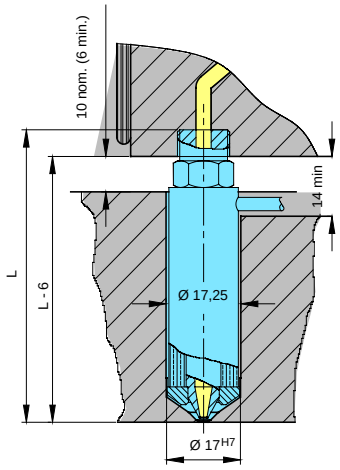
Screw head nozzles
Gating
Point gate



Thru hole



Screw head nozzles
Thru hole type



REF.	L
MEO 0060	66
MEO 0070	76
MEO 0080	86

Micro Hot-One system

Nozzles

Spare Parts **- MEP - MEO - MSP - MSO - MGS**

	Quick Selection Chart Micro Hot-One Nozzles	Spare parts for nozzles						To be ordered separately
		Body DEP DEO DSP DSO	Cast-in heater TC type 'J'	Flange	Seal ring	Material		Spacer ring
	REF.	REF. MEP	REF. DEP	REF. MHD	REF. MDS	REF. MSR	REF. Mat.	REF. ASF
Screw head nozzles Point gate type		MEP 0060	DEP 0060	MHD 0044	MDS 0001		Standard	
		MEP 0070	DEP 0070	MHD 0054				
		MEP 0080	DEP 0080	MHD 0064				
		MEP 1060	DEP 1060	MHD 0044	MDS 0001		Wear resistant	
		MEP 1070	DEP 1070	MHD 0054				
		MEP 1080	DEP 1080	MHD 0064				
		MEO	DEO	MHD	MDS	MSR	Mat.	ASF
Screw head nozzles Thru hole type		MEO 0060	DEO 0060	MHD 0044	MDS 0001		Standard	
		MEO 0070	DEO 0070	MHD 0054				
		MEO 0080	DEO 0080	MHD 0064				
		MSP	DSP	MHD	MDS	MSR	Mat.	ASF
Flat head nozzles Point gate type		MSP 0060	DSP 0060	MHD 0044	MDS 0001	MSR 6408	Standard	ASF 0218
		MSP 0070	DSP 0070	MHD 0054				
		MSP 0080	DSP 0080	MHD 0064				
		MSP 1060	DSP 1060	MHD 0044	MDS 0001	MSR 6408	Wear resistant	ASF 0218
		MSP 1070	DSP 1070	MHD 0054				
		MSP 1080	DSP 1080	MHD 0064				
		MSO	DSO	MHD	MDS	MSR	Mat.	ASF
Flat head nozzles Thru hole type		MSO 0060	DSO 0060	MHD 0044	MDS 0001	MSR 6408	Standard	ASF 0218
		MSO 0070	DSO 0070	MHD 0054				
		MSO 0080	DSO 0080	MHD 0064				

	Spare parts for nozzles							To be ordered separately
	Body	Insulating ring	Support block (lower)	Support block (upper)	Band heater	Thermo-couple Type 'J'	Seal ring	Nozzle Assembly MEP MEO
	REF. MGS	REF.	REF. WTO	REF. ECB	REF. ECB	REF. BHF	REF. TCM	REF. EHR	REF. MEP
Multiple gate nozzles	MGS 3802	◆	WTO 3000	ECB 0501	ECB 0500	BHF 3870	TCM 0003	EHR 1150	MEP 0060
	MGS 3804	◆		ECB 0501		BHF 3870			MEP 0070
	MGS 6003	◆		ECB 0502		BHF 3890			MEP 0080
	MGS 6006	◆		ECB 0502		BHF 3890			MEP 1060
									MEP 1070
									MEP 1080
									MEO
									MEO 0060
									MEO 0070
									MEO 0080

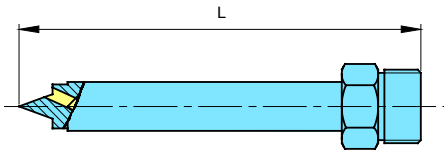
Micro Hot-One system

Nozzles

Spare Parts - MEP - MEO - MSP - MSO - MGS

DEP

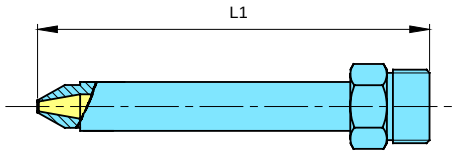
Body-Screw head nozzle, point gate type



REF.	$L^{+0,02}$	For	Mat.
DEP 0060	66	MEP 0060	Standard
DEP 0070	76	MEP 0070	
DEP 0080	86	MEP 0080	
DEP 1060	66	MEP 1060	Wear resistant
DEP 1070	76	MEP 1070	
DEP 1080	86	MEP 1080	

DEO

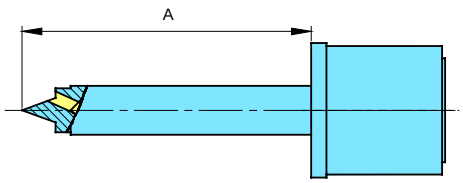
Body-Screw head nozzle, thru hole type



REF.	$L1^{+0,02}$	For
DEO 0060	65	MEO 0060
DEO 0070	75	MEO 0070
DEO 0080	85	MEO 0080

DSP

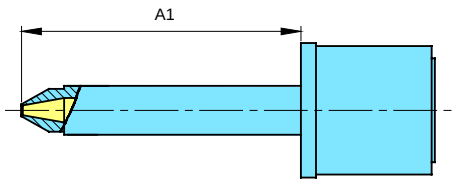
Body-Flat head nozzle, point gate type



REF.	$A^{+0,03}_{-0,01}$	For	Mat.
DSP 0060	47,5	MSP 0060	Standard
DSP 0070	57,5	MSP 0070	
DSP 0080	67,5	MSP 0080	
DSP 1060	47,5	MSP 1060	Wear resistant
DSP 1070	57,5	MSP 1070	
DSP 1080	67,5	MSP 1080	

DSO

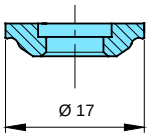
Body-Flat head nozzle, thru hole type



REF.	$A1^{+0,03}_{-0,01}$	For
DSO 0060	46,5	MSO 0060
DSO 0070	56,5	MSO 0070
DSO 0080	66,5	MSO 0080

MDS

Flange

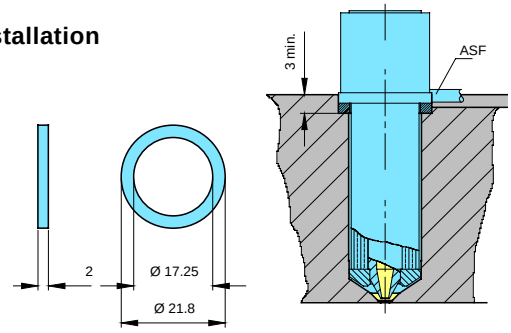


REF.	For
MDS 0001	MSP - MSO
	MEP - MEO

ASF

Spacer ring for Flat head nozzles

Installation



REF.	For
ASF 0218	MSP - MSO

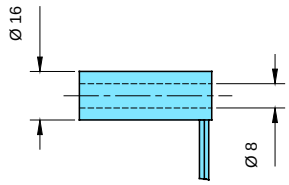
Micro Hot-One system

Nozzles

Spare Parts **- MEP - MEO - MSP - MSO - MGS**

MHD

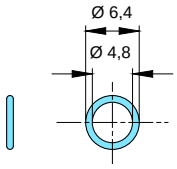
Cast-in heater with thermocouple type 'J'



REF.	Watt 230 V	For MSP MEP	For MSP - MSO MEP - MEO
MHD 0044	175	1060	0060
MHD 0054	190	1070	0070
MHD 0064	200	1080	0080

MSR

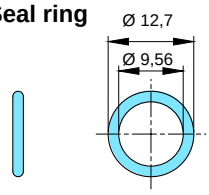
Seal ring



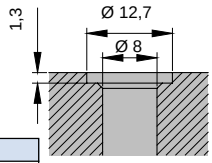
REF.	For
MSR 6408	MSP - MSO

EHR

Seal ring



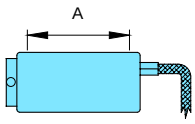
Installation



REF.
EHR 1150

BHF

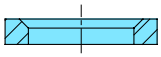
Band heater



REF.	Ø A	Watt 230 V
BHF 3870	70	780
BHF 3890	90	1100

WTO

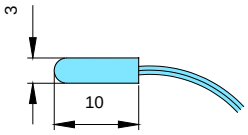
Insulating ring



REF.
WTO 3000

TCM

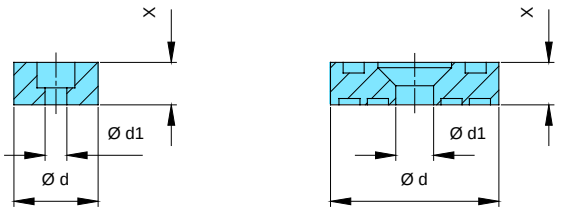
Cylindrical Thermocouple



REF.
TCM 0003

ECB

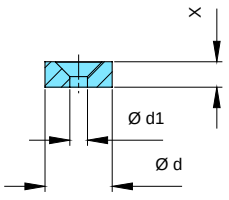
Support block (lower)



REF.	X	d	d1	Mat.
ECB 0501	10	20	5,2	Titanium
ECB 0502	10	40	8,2	

ECB

Support block (upper)



REF.	X	d	d1	Mat.
ECB 0500	6	16	4,2	Titanium

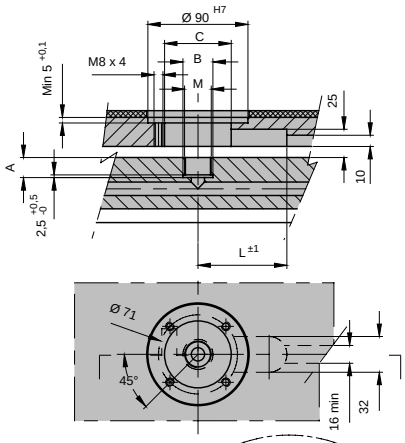
Standard Hot-One system

Machining Instructions

Manifold, Nozzle plate, Mold plate gate machining dimensions for:

Conventional and High performance Hot-One nozzles, Gate Mate 4™, Mini Gate Mate.

Machining dimensions for heated adapter



Locating rings EHL

REF.	Ø F	Ø G	Ø H	Ø J
EHL 0252 EX	101,5	84,1	75	64
EHL 0253 EX	139,7	118	100	95

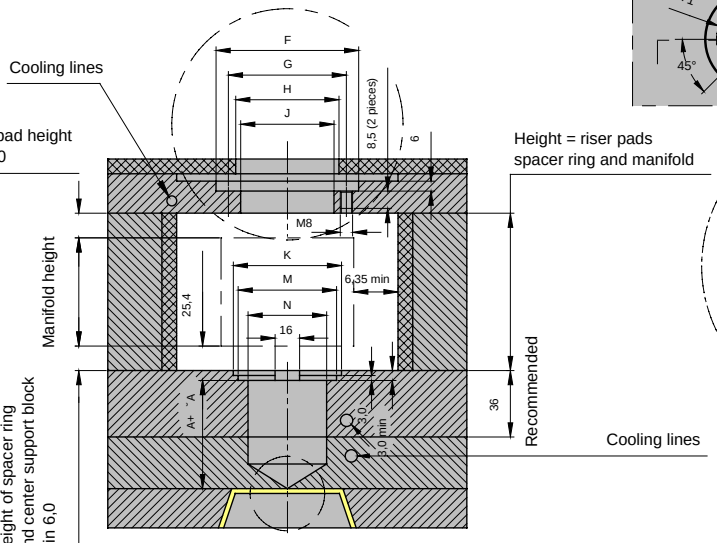
Heated adapters

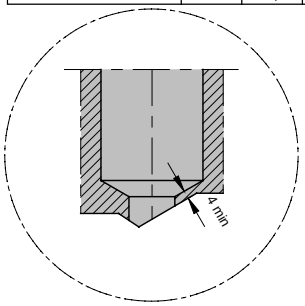
	BHA-M20	BHA-M24
M	20 x 1,5	24 x 1,5
A±0,02	14,8	18
ØB±0,2	24	27
ØC±0,5	50	60
L±1min	75	80

Nozzles

REF.	K	ØM	ØN
250	40	38	30
375	52	50	41
625	78	76	54
Gate Mate 4™	40	38	32
Mini Gate Mate	40	38,1	28,5

Machining dimensions for locating ring EHL

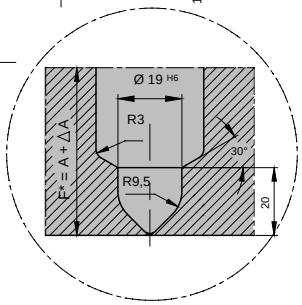




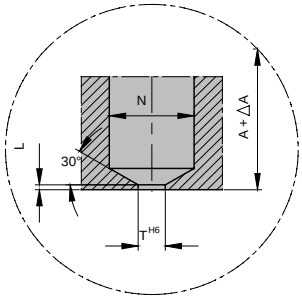
Conventional and High performance nozzle

Extended sprue gate

$\Delta A = A \times (11,4 \times 10^{-6}) \times \Delta T$
(ΔT = T max . °C - 20 °C)



Gate Mate 4™

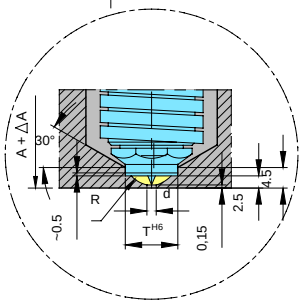


Conventional and High performance nozzle

Sprue and Ring gate

$\Delta A = A \times (11,4 \times 10^{-6}) \times \Delta T$
(ΔT = T max . °C - 20 °C)

REF.	N	L	T
250	30	2	12,5
375	40	2	19
625	54	4	25

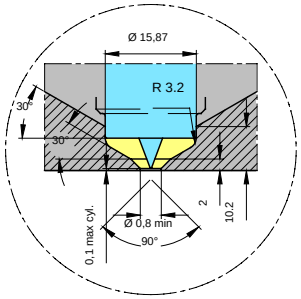


Conventional and High performance nozzle

Point gate

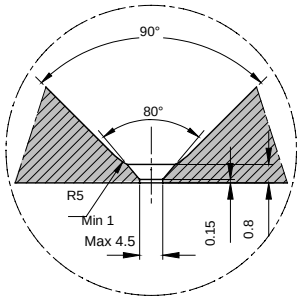
$\Delta A = A \times (11,4 \times 10^{-6}) \times \Delta T$
(ΔT = T max . °C - 20 °C)

REF.	Ø d	ØT	R
250	1,5-3,0	9,5	3,2
375	2,0-4,0	12,5	4,7



Mini Gate Mate

$\Delta A = A \times (11,4 \times 10^{-6}) \times \Delta t$
(ΔT = T max °C - 20°C)



Gate Mate 4™

$\Delta A = A \times \alpha_c \times 10^{-6} \times \Delta T$
($\alpha_c = 16,8 - 0,026 \times A$)
(ΔT = nozzle set point - 20°C)
(not valid for GMT 0300)

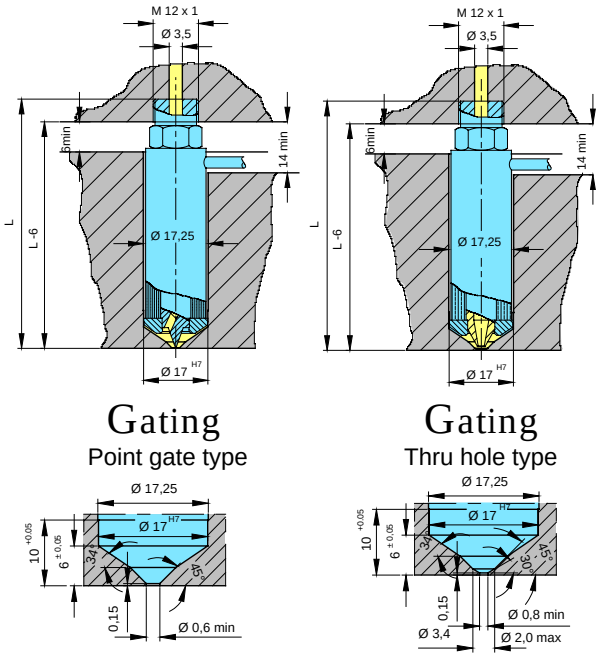
REF.	A
GMB 0150 EX	50,8
GMB 0151 EX	63,5
GMB 0152 EX	76,2
GMB 0153 EX	88,9
GMB 0154 EX	101,6
GMB 0155 EX	127,0
GMB 0156 EX	152,4

The Hot-One System

Micro Hot-One system
Machining Instructions

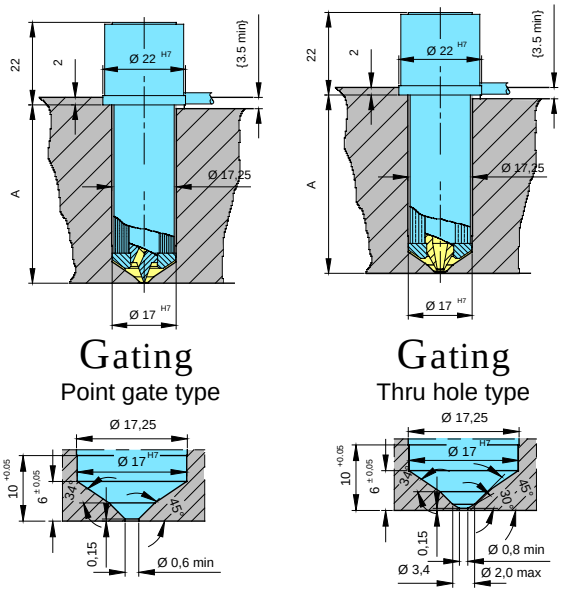
Manifold, Nozzle plate, Mold plate gate machining dimensions for:
Micro Hot-One nozzles and Multiple gate nozzles.

Micro Hot-One nozzles
Screw head style



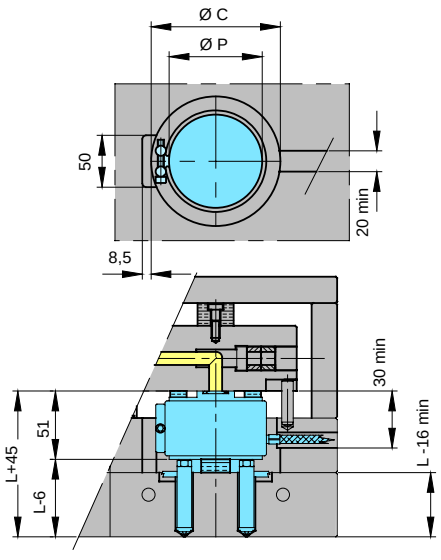
REF.	REF.	REF.	L
MEP 0060	MEP 1060	MEO 0060	66
MEP 0070	MEP 1070	MEO 0070	76
MEP 0080	MEP 1080	MEO 0080	86

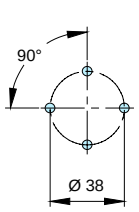
Micro Hot-One nozzles
Flat head style

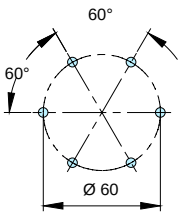


REF.	REF.	REF.	A
MSP 0060	MSP 1060	MSO 0060	47,5
MSP 0070	MSP 1070	MSO 0070	57,5
MSP 0080	MSP 1080	MSO 0080	67,5

Multiple gate nozzles with Screw head nozzles







P	C	H
70	105	L + 45
90	125	L + 45

The Hot-One System

The Hot-One concept

Osco® Valve Gate system

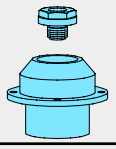
The Osco® Valve Gate system from ***D-M-E*** represents the ultimate in part cosmetics, knit line control and part quality over the widest spectrum of applications including large, multi-gated parts and family molds with unbalanced flow.

This superiority can be attributed to the floating hydraulic cylinder/valve pin assembly which provides positive indivual gate shut-off

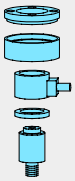
The key to the system's operation is the method to open and close each gate. In the opening cycle, delay timers activated by the machine's high-pressure clamp circuit allow injection pressure to build. At a determined time, hydraulic cylinders retract the valve piston/pin assembly at each gate, permitting material to flow into the mold cavity at an increased velocity. Secondary individual timers positively close each gate after the proper pre-set fill time, eliminating overpacking while allowing other gates to remain open until their optimum fill time is reached.

Two nozzle styles are available: the Full-Body nozzle is suggested when a circular nozzle mark is allowed, the Bodyless nozzle offers impeccable cosmetics, feeding directly into the part.

Manifold Ancillaries
Heated nozzle adapters

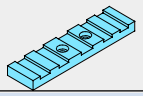


EHN
EHL
p. 66



HR
DR
DI
WTO
BHA
p. 67

Manifold Ancillaries
Riser pads (no view)



ERP
p. 72

Spacer rings

ESR
p. 72

Support blocks

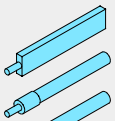
ECB
p. 72

Manifold Ancillaries
End caps

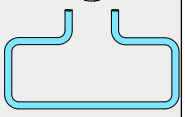
EHM
GZ
EEP
EDR
p. 73

EHM
EEP
p. 73

Manifold Ancillaries
Cartridge heaters

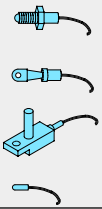


CHR
CHS
ECH
EHP



Tubular
p. 68/70

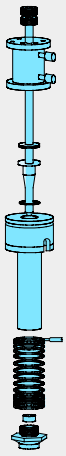
Thermocouples (no view)



ETC
ETC
ETC
TCM
p.71/72

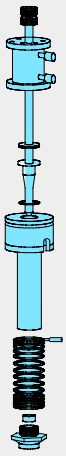
Nozzles & Accessories
Osco® Valve Gate

FBV



VG-VPR
VG-HCA
VG
PBR
PB
EHR
FBV
SCH
PG
VG-FBT
p. 52/53

BLV

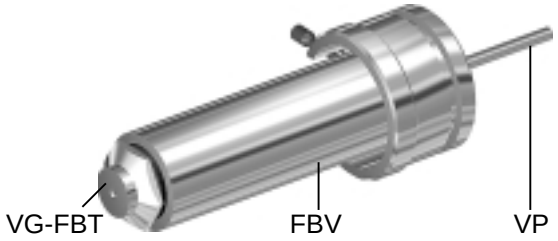


VG-VPR
VG-HCA
VP
PBR
PB
EHR
BLV
SCH
PG
VG-BLT
p. 54/55

The Hot-One System

OSCO® Valve Gate system

Full-Body nozzles - **FBV**

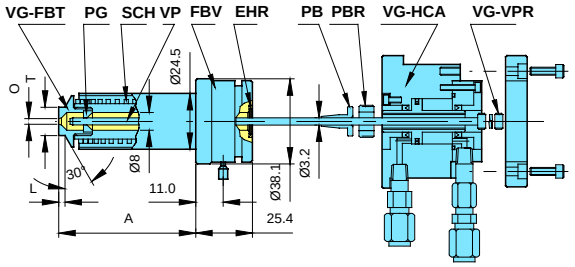


The Full-Body Valve Gate nozzle is designed to feed the part or runner and is ideal for use where the nozzle circular mark is allowed. It is supplied with a thermocouple controlled spiral heater that distributes heat throughout the nozzle uniformly.

The unique removable tip construction provides maximum flexibility. There is no need to replace the whole unit, yet it has longer life than conventional floating pin units, which causes misaligned pin/orifice engagement.

FBV

Series 50



REF.	A	REF.	A
FBV 520	50,80	FBV 540	101,60
FBV 525	63,50	FBV 550	127,00
FBV 530	76,20	FBV 560	152,40
FBV 535	88,90		

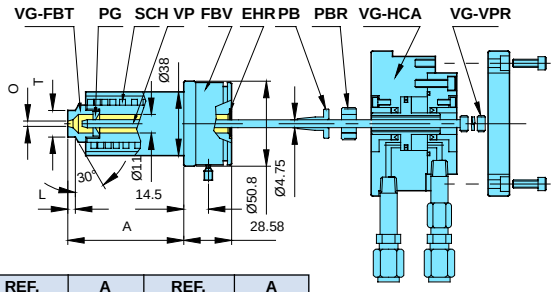
T	L	O
9,52	2,29	min. 1,27 max. 2,03
12,70	3,17	
19,05	4,95	

ASSEMBLY consisting of :

REF. Assembly	Body	Seal ring	Square coil heater with TC type 'J'	Pin guide	Valve pin	Valve pin retainer	Full-Body tip	Pin bushing retainer	Manifold pin bushing	Hydraulic cylinder
FBV 520	◆	EHR 0154	SCH 0081	PG 50	VP 50x14	VG 50-VPR	VG 50-FBT	PBR 50	PB 50	VG 50-HCA
FBV 525	◆		SCH 0082							
FBV 530	◆		SCH 0083							
FBV 535	◆		SCH 0084							
FBV 540	◆		SCH 0085							
FBV 550	◆		SCH 0086							
FBV 560	◆		SCH 0087							

FBV

Series 100



REF.	A	REF.	A
FBV 1020	50,80	FBV 1040	101,60
FBV 1025	63,50	FBV 1050	127,00
FBV 1030	76,20	FBV 1060	152,40
FBV 1035	88,90	FBV 1070	177,8

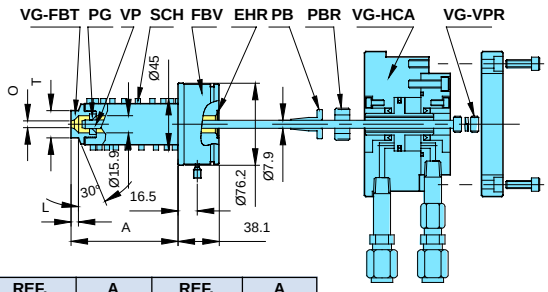
T	L	O
12,70	3,17	min. 2,03 max.3,81
19,05	4,95	
25,40	9,11	

ASSEMBLY consisting of :

REF. Assembly	Body	Seal ring	Square coil heater with TC type 'J'	Pin guide	Valve pin	Valve pin retainer	Full-Body tip	Pin bushing retainer	Manifold pin bushing	Hydraulic cylinder
FBV 1020	◆	EHR 0155	SCH 0088	PG 100	VP 100x14	VG 100-VPR	VG 100-FBT	PBR 100	PB 100	VG 100-HCA
FBV 1025	◆		SCH 0089							
FBV 1030	◆		SCH 0090							
FBV 1035	◆		SCH 0091							
FBV 1040	◆		SCH 0092							
FBV 1050	◆		SCH 0093							
FBV 1060	◆		SCH 0094							
FBV 1070	◆		SCH 0095							

FBV

Series 200



REF.	A	REF.	A
FBV 2040	101,60	FBV 2080	203,20
FBV 2050	127,00	FBV 2090	228,60
FBV 2060	152,40	FBV 2100	254,00
FBV 2070	177,80		

T	L	O
12,70	3,17	min. 3,81 max. 6,35
19,05	4,75	
25,40	9,11	

ASSEMBLY consisting of :

REF. Assembly	Body	Seal ring	Square coil heater with TC type 'J'	Pin guide	Valve pin	Valve pin retainer	Full-Body tip	Pin bushing retainer	Manifold pin bushing	Hydraulic cylinder
FBV 2040	◆	EHR 0156	SCH 0096	PG 200	VP 200x14	VG 200-VPR	VG 200-FBT	PBR 200	PB 200	VG 200-HCA
FBV 2050	◆		SCH 0097							
FBV 2060	◆		SCH 0098							
FBV 2070	◆		SCH 0099							
FBV 2080	◆		SCH 0100							
FBV 2090	◆		SCH 0101							
FBV 2100	◆		SCH 0102							

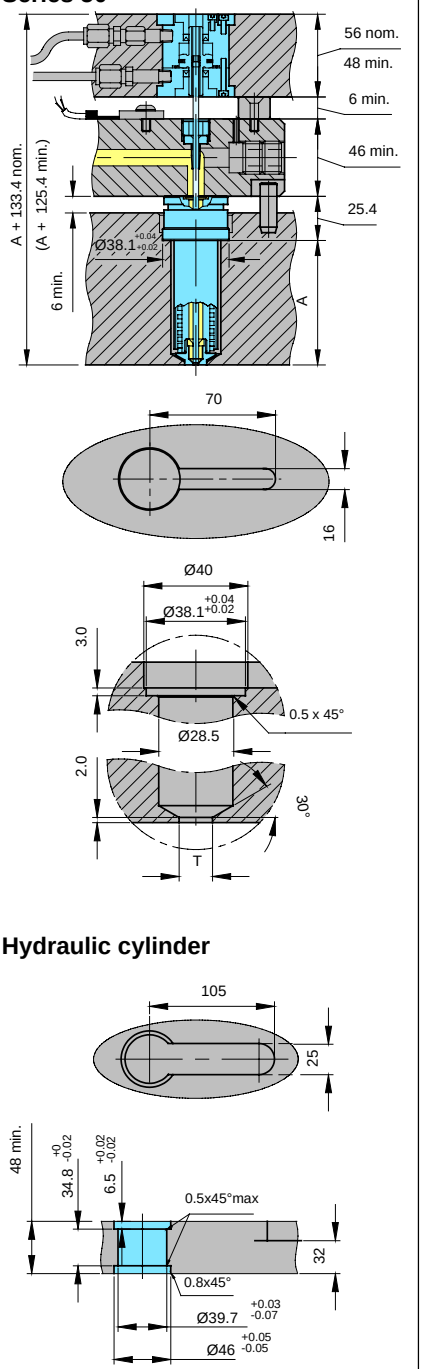
The Hot-One System

Osco® Valve Gate system

Installation Instructions - Full-Body nozzles **- FBV**

FBV

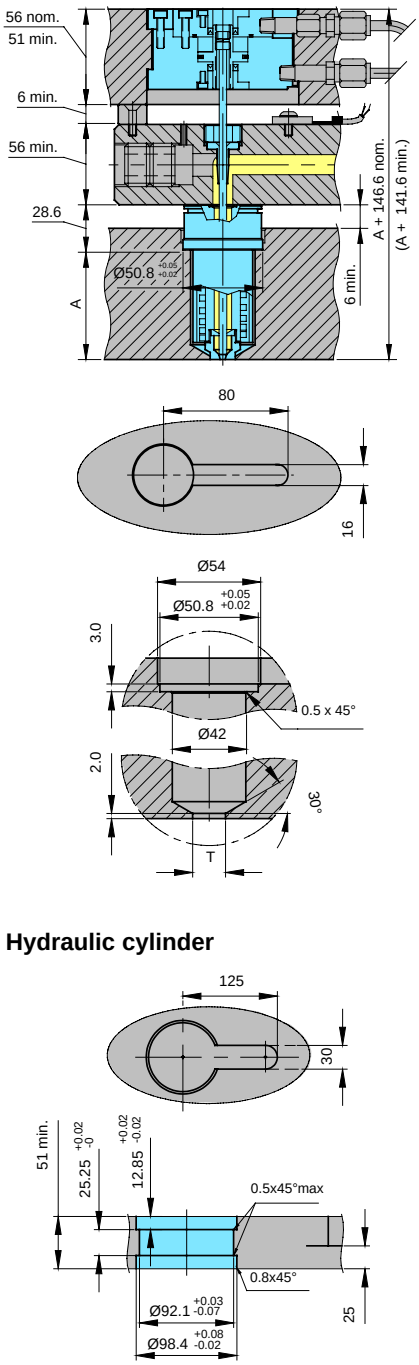
Series 50



Hydraulic cylinder

FBV

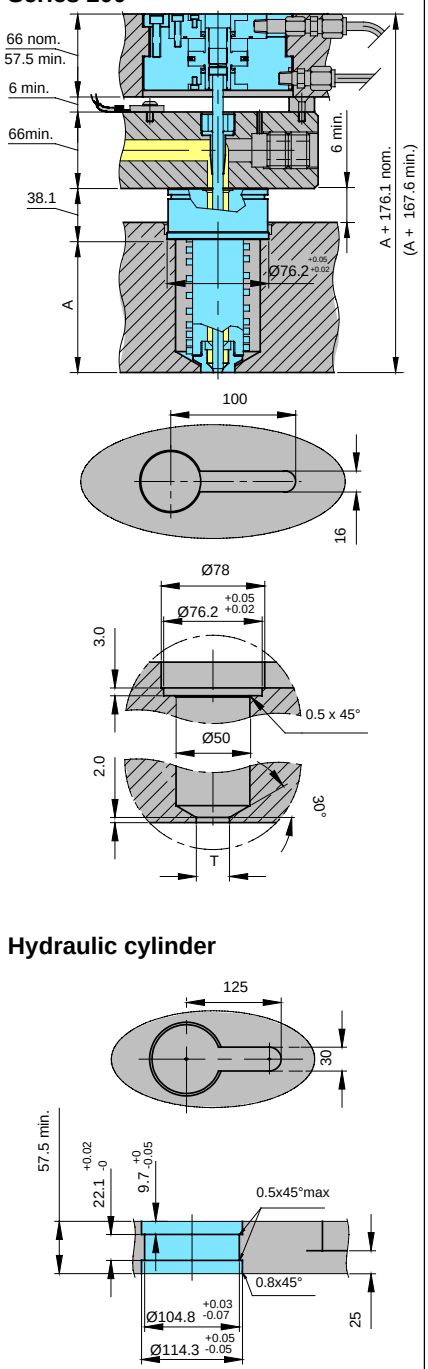
Series 100



Hydraulic cylinder

FBV

Series 200



Hydraulic cylinder

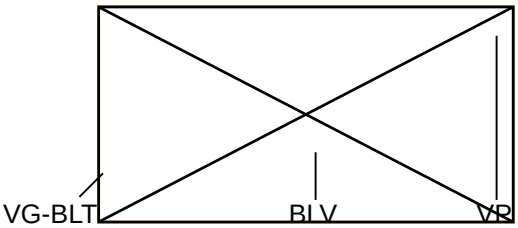
How to order

To order a complete Osco® Valve Gate nozzle:

1. Select one of the available reference numbers of the Osco® Valve Gate nozzles - Full-Body type.
2. Specify the T-diameter of the tip.
3. Specify the O-diameter, which can be of any size between min. and max.

OSCO® Valve Gate system

Bodyless nozzles - **BLV**

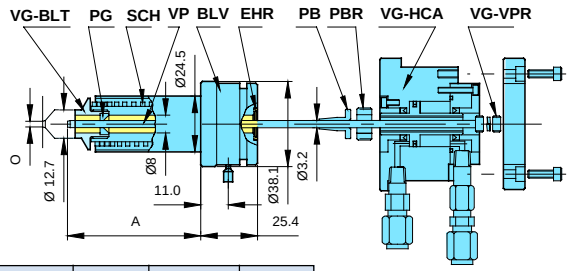


The Bodyless type nozzle is designed to feed directly into the molded part and to be used where the typical circular mark of the conventional nozzle is not allowed. It is supplied with a thermocouple controlled spiral heater that distributes heat throughout the nozzle uniformly.

The nozzle is equipped with a pin guide to assure concentricity within the valve pin and the tapered opening, eliminating the typical wear at the opening. No need for hardened cavity steel.

BLV

Series 50



REF.	A	REF.	A
BLV 520	50,80	BLV 540	101,60
BLV 525	63,50	BLV 550	127,00
BLV 530	76,20	BLV 560	152,40
BLV 535	88,90		

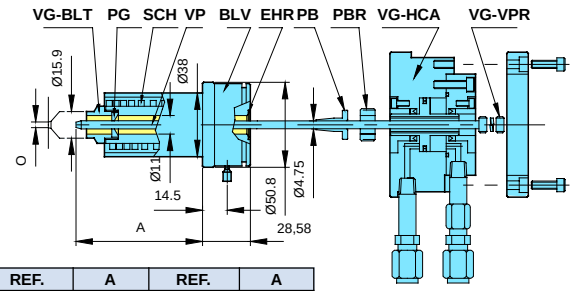
O
min. 1,27 max. 2,03

ASSEMBLY consisting of :

REF. Assembly	Body	Seal ring	Square coil heater with TC type'J'	Pin guide	Valve pin	Valve pin retainer	Bodyless tip	Pin bushing retainer	Manifold pin bushing	Hydraulic cylinder
BLV 520	◆	EHR 0154	SCH 0081	PG 50	VP 50x14	VG 50-VPR	VG 50-BLT	PBR 50	PB 50	VG 50-HCA
BLV 525	◆		SCH 0082							
BLV 530	◆		SCH 0083							
BLV 535	◆		SCH 0084							
BLV 540	◆		SCH 0085							
BLV 550	◆		SCH 0086							
BLV 560	◆		SCH 0087							

BLV

Series 100



REF.	A	REF.	A
BLV 1020	50,80	BLV 1040	101,60
BLV 1025	63,50	BLV 1050	127,00
BLV 1030	76,20	BLV 1060	152,40
BLV 1035	88,90	BLV 1070	177,80

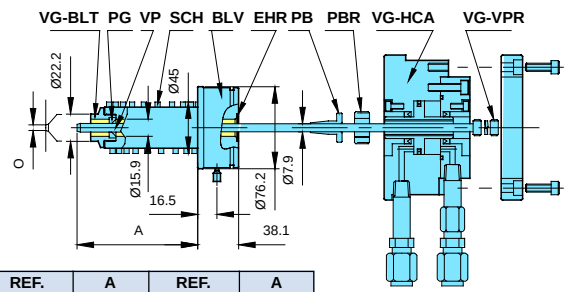
O
min. 2,03 max.3,81

ASSEMBLY consisting of :

REF. Assembly	Body	Seal ring	Square coil heater with TC type'J'	Pin guide	Valve pin	Valve pin retainer	Bodyless tip	Pin bushing retainer	Manifold pin bushing	Hydraulic cylinder
BLV 1020	◆	EHR 0155	SCH 0088	PG 100	VP 100x14	VG 100-VPR	VG 100-BLT	PBR 100	PB 100	VG 100-HCA
BLV 1025	◆		SCH 0089							
BLV 1030	◆		SCH 0090							
BLV 1035	◆		SCH 0091							
BLV 1040	◆		SCH 0092							
BLV 1050	◆		SCH 0093							
BLV 1060	◆		SCH 0094							
BLV 1070	◆		SCH 0095							

BLV

Series 200



REF.	A	REF.	A
BLV 2040	101,60	BLV 2080	203,20
BLV 2050	127,00	BLV 2090	228,60
BLV 2060	152,40	BLV 2100	254,00
BLV 2070	177,80		

O
min. 3,81 max. 6,35

ASSEMBLY consisting of :

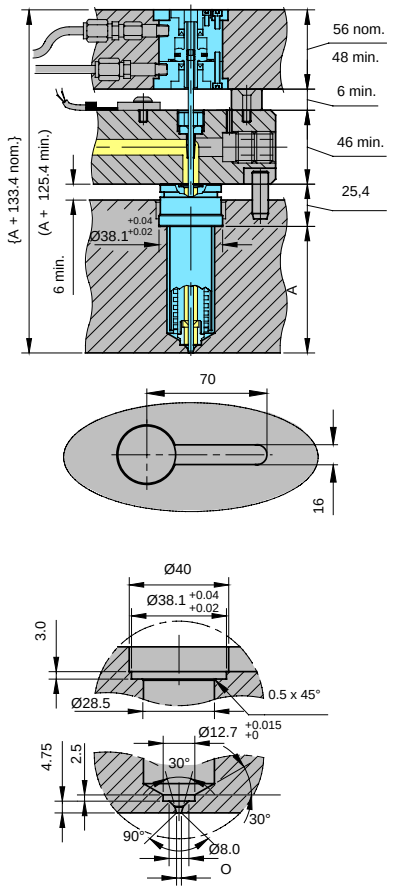
REF. Assembly	Body	Seal ring	Square coil heater with TC type'J'	Pin guide	Valve pin	Valve pin retainer	Bodyless tip	Pin bushing retainer	Manifold pin bushing	Hydraulic cylinder
BLV 2040	◆	EHR 0156	SCH 0096	PG 200	VP 200x14	VG 200-VPR	VG 200-BLT	PBR 200	PB 200	VG 200-HCA
BLV 2050	◆		SCH 0097							
BLV 2060	◆		SCH 0098							
BLV 2070	◆		SCH 0099							
BLV 2080	◆		SCH 0100							
BLV 2090	◆		SCH 0101							
BLV 2100	◆		SCH 0102							

Osco® Valve Gate system

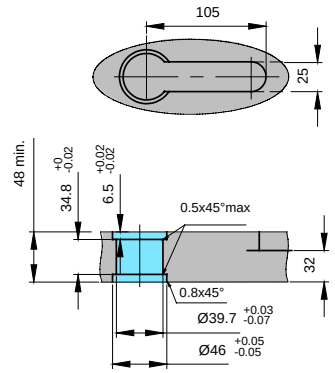
Installation Instructions - Bodyless nozzles **- BLV**

BLV

Series 50

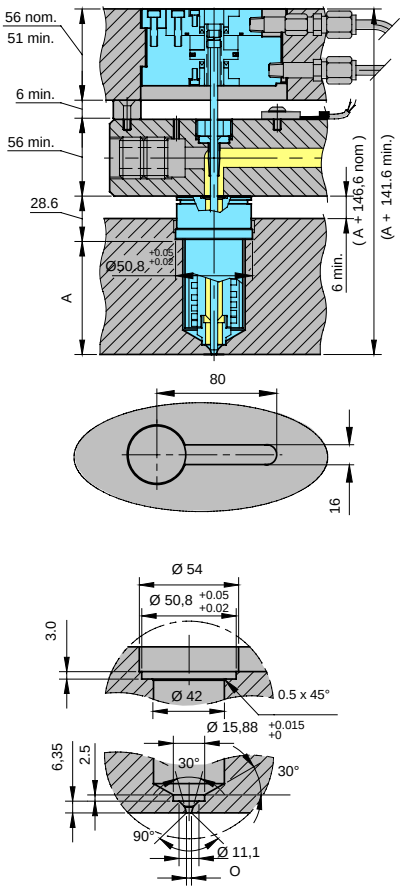


Hydraulic cylinder

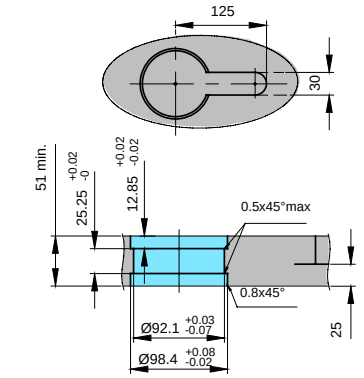


BLV

Series 100

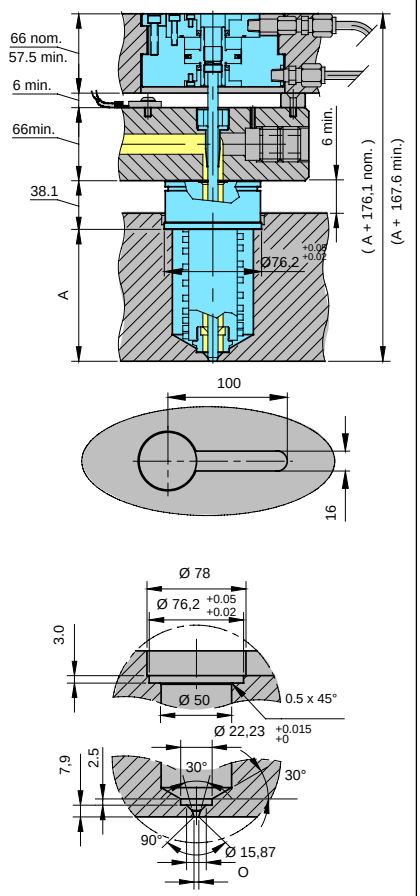


Hydraulic cylinder

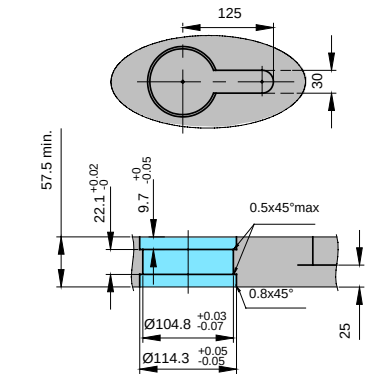


BLV

Series 200



Hydraulic cylinder



How to order

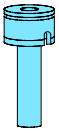
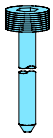
To order a complete Osco® Valve Gate nozzle:

1. Select one of the reference numbers of the Osco® Valve Gate nozzles - Bodyless type.
2. Specify the O-diameter, which can be of any size between min. and max.

Osco® Valve Gate system

Nozzles

Spare Parts **- FBV - BLV**

	Quick Selection Chart	Body 	Seal ring	Square coil heater + TC type 'J' 	Pin guide 	Valve pin 	Valve pin retainer 	Full-Body tip 	Bodyless tip 	Pin bushing retainer 	Manifold pin bushing 	Hydraulic cylinder 
		REF.	REF.	REF.	REF.	REF.	REF.	REF.	REF.	REF.	REF.	REF.
	Full-Body	FBV	EHR	SCH	PG	VP	VG-VPR	VG-FBT	VG-BLT	PBR	PB	VG-HCA
Series 50	FBV 520	◆	EHR 0154	SCH 0081	PG 50	VP 50X14	VG 50-VPR	VG 50-FBT		PBR 50	PB 50	VG 50-HCA
	FBV 525	◆		SCH 0082								
	FBV 530	◆		SCH 0083								
	FBV 535	◆		SCH 0084								
	FBV 540	◆		SCH 0085								
	FBV 550	◆		SCH 0086								
	FBV 560	◆		SCH 0087								
Series 100	FBV 1020	◆	EHR 0155	SCH 0088	PG 100	VP 100X14	VP 100-VPR	VG 100-FBT		PBR 100	PB 100	VG 100-HCA
	FBV 1025	◆		SCH 0089								
	FBV 1030	◆		SCH 0090								
	FBV 1035	◆		SCH 0091								
	FBV 1040	◆		SCH 0092								
	FBV 1050	◆		SCH 0093								
	FBV 1060	◆		SCH 0094								
	FBV 1070	◆		SCH 0095								
Series 200	FBV 2040	◆	EHR 0156	SCH 0096	PG 200	VP 200X14	VG 200-VPR	VG 200-FBT		PBR 200	PB 200	VG 200-HCA
	FBV 2050	◆		SCH 0097								
	FBV 2060	◆		SCH 0098								
	FBV 2070	◆		SCH 0099								
	FBV 2080	◆		SCH 0100								
	FBV 2090	◆		SCH 0101								
	FBV 2100	◆		SCH 0102								
	Bodyless	BLV	EHR	SCH	PG	VP	VP-VPR		VG-BLT	PBR	PB	VG-HCA
Series 50	BLV 520	◆	EHR 0154	SCH 0081	PG 50	VP 50X14	VP 50-VPR		VG 50-BLT	PBR 50	PB 50	VG 50-HCA
	BLV 525	◆		SCH 0082								
	BLV 530	◆		SCH 0083								
	BLV 535	◆		SCH 0084								
	BLV 540	◆		SCH 0085								
	BLV 550	◆		SCH 0086								
	BLV 560	◆		SCH 0087								
Series 100	BLV 1020	◆	EHR 0155	SCH 0088	PG 100	VP 100X14	VP 100-VPR		VG 100-BLT	PBR 100	PB 100	VG 100-HCA
	BLV 1025	◆		SCH 0089								
	BLV 1030	◆		SCH 0090								
	BLV 1035	◆		SCH 0091								
	BLV 1040	◆		SCH 0092								
	BLV 1050	◆		SCH 0093								
	BLV 1060	◆		SCH 0094								
	BLV 1070	◆		SCH 0095								
Series 200	BLV 2040	◆	EHR 0156	SCH 0096	PG 200	VP 200X14	VP 200-VPR		VG 200-BLT	PBR 200	PB 200	VG 200-HCA
	BLV 2050	◆		SCH 0097								
	BLV 2060	◆		SCH 0098								
	BLV 2070	◆		SCH 0099								
	BLV 2080	◆		SCH 0100								
	BLV 2090	◆		SCH 0101								
	BLV 2100	◆		SCH 0102								

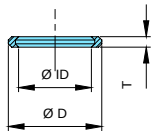
Osco® Valve Gate system

Nozzles

Spare Parts - **FBV - BLV**

EHR

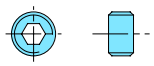
Seal ring



REF.	D	ID	T	Series
EHR 0154	14,25	11,10	1,57	50
EHR 0155	17,42	14,72	1,57	100
EHR 0156	26,97	23,80	1,57	200

VG - VPR

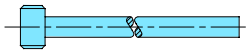
Valve pin retainer



REF	Series
VG 50-VPR	50
VG 100-VPR	100
VG 200-VPR	200

VP

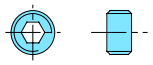
Valve pin



REF	Series
VP 50x14	50
VP 100x14	100
VP 200x14	200

PBR

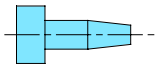
Pin bushing retainer



REF	Series
PBR 50	50
PBR 100	100
PBR 200	200

PB

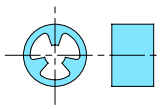
Manifold pin bushing



REF	Series
PB 50	50
PB 100	100
PB 200	200

PG

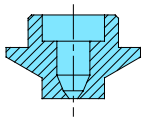
Pin guide



REF	Series
PG 50	50
PG 100	100
PG 200	200

VG - FBT

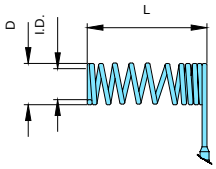
Full-Body tip



REF	Series
VG 50-FBT	50
VG 100-FBT	100
VG 200-FBT	200

SCH

Square coil heater + TC type 'J'

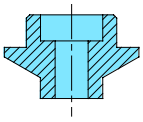


Length of wires: 850 mm
Black wire 230 V
Black wire 230 V
White wire + } TC
Red wire - } type "J"

REF.	For FBV/BLV	L	ID	D	Watt 230V
SCH 0081	520	50,80	15,37	20,70	275
SCH 0082	525	63,50			320
SCH 0083	530	76,20			370
SCH 0084	535	88,90			390
SCH 0085	540	101,60			460
SCH 0086	550	127,00			460
SCH 0087	560	152,40			500
SCH 0088	1020	53,97	21,72	27,05	370
SCH 0089	1025	66,68			415
SCH 0090	1030	79,38			500
SCH 0091	1035	92,07			640
SCH 0092	1040	104,77			735
SCH 0093	1050	130,17			825
SCH 0094	1060	156,58			920
SCH 0095	1070	180,99			1000
SCH 0096	2040	101,60	37,47	42,80	920
SCH 0097	2050	127,00			950
SCH 0098	2060	152,40			1000
SCH 0099	2070	177,80			1000
SCH 0100	2080	203,20			1100
SCH 0101	2090	228,60			1100
SCH 0102	2100	254,00			1100

VG-BLT

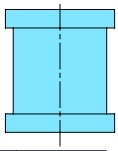
Bodyless tip



REF	Series
VG 50-BLT	50
VG 100-BLT	100
VG 200-BLT	200

VG - HCA

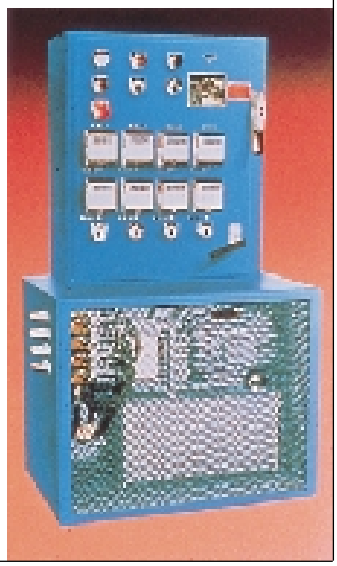
Hydraulic cylinder



REF	Series
VG 50-HCA	50
VG 100-HCA	100
VG 200-HCA	200

HCU

Hydraulic control unit



For more information,
please contact ***D-M-E***

The Hot-One System

The Hot-One Manifold

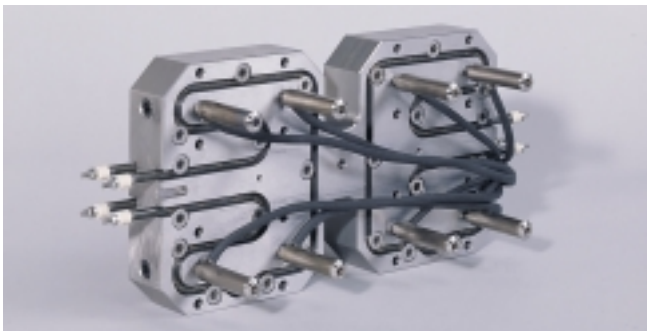
Balanced flow pattern

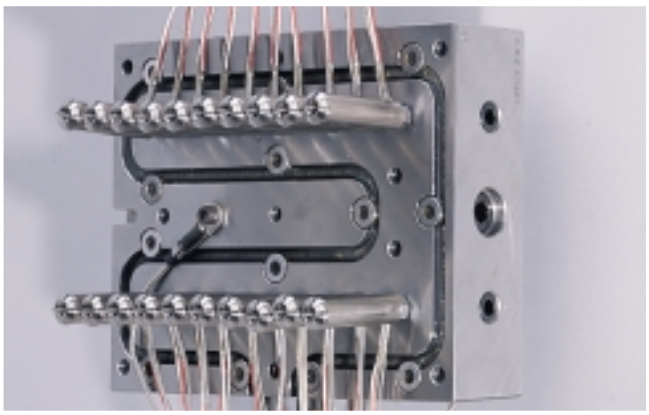
To ensure an equal fill of all cavities, ***D-M-E***'s hot-runner specialists design most manifolds so that each melt channel has the same flow length and pressure drop from the machine nozzle to the gate.

This ensures natural rheologically balanced flow channels producing the lowest shear stress which results in maximum productivity and molded product integrity.

D-M-E manifolds are compact and can make use of tubular heaters featuring a uniform temperature profile along their length.

Each manifold is finished to specific internal diameter requirements based on shot size, resin type, and pitch. This allows the manifold to more accurately perform to your specific application.



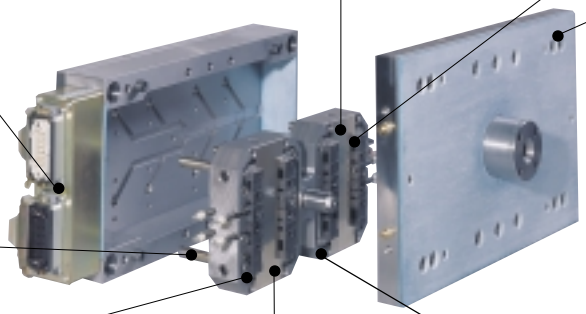


Terminal mounting boxes:
provide the easiest and most economical method of mounting power and thermocouple connectors on the mold. Each box is pre-cut and drilled for quick mounting of the connector to the box, and box to the mold.
Available in 15 and 30 Amp. version for 5, 8 and 12 zone main frames. Connectors to be ordered separately.

Thermocouples:
thermocouples are of the J-type and designed to respond fast to the slightest temperature fluctuation. They are also strategically located to achieve the best temperature control. The number of thermocouples and thus of control zones will depend on the shape and on the total installed power, keeping in mind the maximum current allowed per zone (15 A or 30 A depending on the control modules) and an even distribution of the load per phase.

Support blocks:
support blocks and riser pads are supplied at choice in steel for easy machining or in titanium for better insulation and temperature uniformity.

Nozzles:
a large array of sizes and designs, with many different gating types, different materials and heater styles. With the modular concept "sub-assembly plus tip", hundreds of combinations are possible, and all kinds of thermoplastic materials have been successfully injected.



Insulating plate:
for reduced heat losses. Asbestos-free, high hot compressive strength and longer life.

D-M-E provides upon request the fully machined manifold plate(s), top clamp plate and risers with the required pockets, water lines, wire channels, and asbestos-free insulating board.

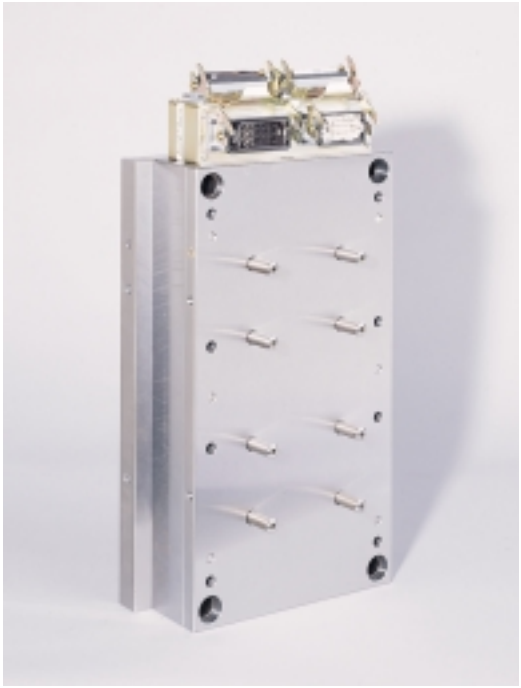
Tubular heaters:
pressed into place in a precisely machined groove on both faces of the manifold, for uniform temperature, fast warm-up with moderate specific power for improved economy and long heater life. The heater groove is kept shallow to allow an excellent heat distribution combined with a reduced manifold height. Moreover, the tubular heater is accurately shaped according to the contour of the manifold.

Reflector plates:
reflector plates are used on manifolds fitted with tubular heaters to reduce heat losses and provide a more uniform temperature whilst avoiding the costly operation of casting the heaters in the grooves. Also, replacement is easier in the rare event of heater failure.

Manifolds:
quality tool steel adapted to the application, with balanced flows as required. Streamlined melt channels with carefully machined bends in the end plugs. Two types of heaters are available; cartridge or tubular, for increased design flexibility, and optimal performance.

The Hot-One System

The Hot-One Manifold



Package systems

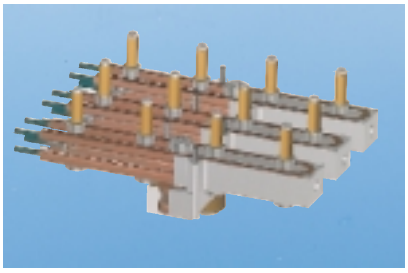
D-M-E supplies complete or *package manifold systems* including all manifold components as well as fully machined top clamp and manifold plates.

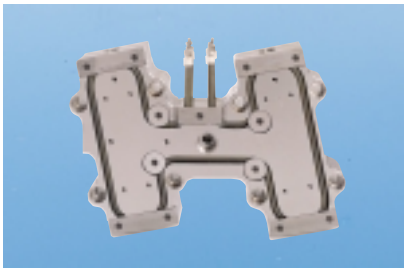
D-M-E's package systems are fully assembled and have been electrically and mechanically tested to ensure perfect operation.

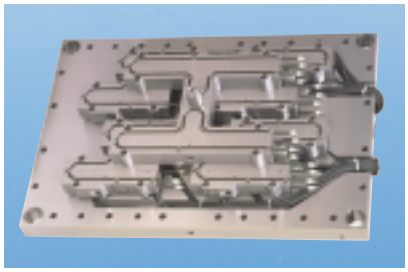
Standard manifolds

A wide range of standard manifold configurations is available.

Manifold recommendations and guidelines







Guidelines for the use of a manifold block

To ensure success of each runnerless application, it is important that mold designers take the following factors into consideration:

1. Selection of proper steel for the nozzle gate area.

2. Proper machining of gate detail to supplied print. (p. 49/ 50)

3. Proper cooling of the gate area to ensure proper gate vestige and to minimize drool or stringing of the material.

4. Adequate cooling in the nozzle plate, manifold retainer plate and/or support blocks (used to enclose the system), and the top clamp plate.

5. Use of the proper number and size assembly screws.

6. Allowance for adequate system cold clearance to permit later thermal expansion.

Prior to system assembly, we strongly suggest you complete the following checks and establish the procedures that will facilitate proper system assembly :

1. Check the parts list to ensure that all components are of the proper part numbers, and that correct quantities are supplied.

2. Check all supplied heaters for proper resistance in ohms (Ω) and for good resistance to ground conditions by doing the following:

a. Refer to table supplied in the design package for each heater used in your system.

b. Note the resistance.

c. Measure each corresponding heater's resistance and determine if they are equivalent.

Guidelines for the use of a manifold block

(Insufficient resistance to ground is defined as a reading to ground of 200.000 Ω or less.)

d. Heater resistance should be ± 10 % of listed rating.

e. The electrical resistance is calculated as follows:

$$R = \frac{U^2}{P}$$

R = electrical resistance in Ω (ohm)
U = electrical tension in V (Volt)
P = electrical power in W (Watt)

3. Manifold:
Confirm that the nozzle locations are correct. Use the supplied manifold drawing to establish the shape of the clearance pocket needed in the manifold retainer plate.

Nozzle Plate

Note the dowel pin locations on your ***D-M-E*** supplied print and transfer this information to your nozzle plate design.
Provide the adequate number and size water lines around nozzle locations and under the manifold shape.
Confirm the nozzle plate thickness is as specified on the supplied drawings. *This dimension is important because a change in plate thickness will affect the total stack up of the system and alter the machining dimensions of the nozzle counterbore (C-Bore).*
Note the nozzle C-Bore depth and transfer this value to your design. The nozzle plate should be specified in ***D-M-E*** steel 3 or an equivalent. Provide a wire channel to protect and properly route wiring to the terminal box.
Do not run wire channels under the manifold, because manifold temperatures may cause wire damage.

Note:
To prevent rotation during installation, key the nozzles before starting. This procedure will facilitate tip removal for replacement or clearing of foreign material from the nozzle tips once the system is assembled. If the cavity contour is machined onto an extended length sprue gate-style tip, the nozzles have to be keyed to prevent rotation.
We also recommend that all systems incorporate the use of wire channels to properly route, as well as protect, system wiring.

Manifold Retainer Plate

The manifold retainer plate should encompass the entire manifold. Provide adequate number and size water lines around manifold pocket. The supplied drawing should be used to establish proper clearance around the manifold. Again, proper clearance is critical. Location of the terminal mounting box must be determined. Attach the terminal mounting box to the mold following the directions given in the ***D-M-E 2000*** catalog, page 8d-17.
A slot (vent) should be cut from the clearance pocket located toward the bottom side of the manifold retainer plate. (Recommended size: 1.5 mm deep and 25 mm wide.)

The manifold retainer plate should be specified in ***D-M-E*** steel 3 or equivalent. Finally, if necessary, provide proper clearance for nozzle heater leads in the underside of the manifold retainer plate.

Top Clamp Plate

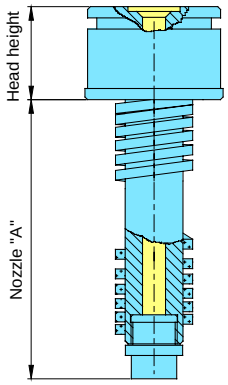
Identify locations of upper support pads on the ***D-M-E*** supplied print and transfer this information to your top clamp plate design. These support pads will be mounted to the underside of the top clamp plate. Provide adequate number and size water lines over the manifold shape. Transfer the matching machining dimension for the locating ring pocket from the supplied prints. The top clamp plate should be specified ***D-M-E*** steel 1 or equivalent.

Nozzle Measurements

Follow the steps and procedure outlined on the following pages to ensure proper system assembly.

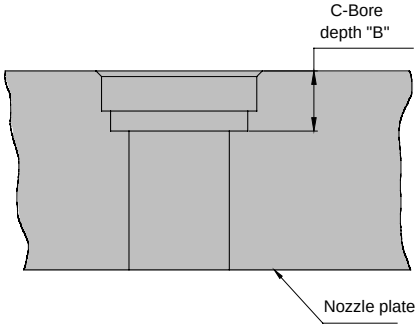
1. Check the head height of all nozzles being used**.**

2. Check the "**A**" dimension of the nozzle assemblies to ensure this dimension is within specification and to establish a base for all other dimensions. (*Figure* 1)



(Figure 1)

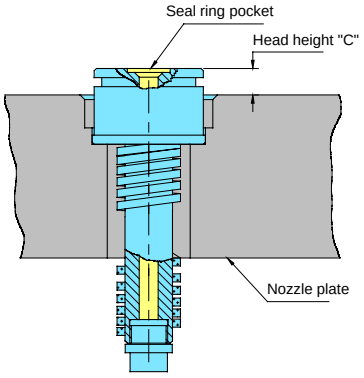
3. Counterbore Depth Measurement :
Inspect the nozzle plate that will house the nozzle bodies for flatness. Ensure the wire channels are free of any burrs and that all directional changes incorporate generous radii. All nozzle head counterbore depths (*Figure 2*) are to be +0.025 to 0.000 mm from the design dimension. Measure the counterbore in three locations to ensure flatness.



(Figure 2)

Guidelines for the use of a manifold block

4. Head Height :
Install the nozzles into their respective counterbores. Do not install the nozzle seal rings at this time. Check the height from the top of the nozzle head to the plate in which the nozzles are installed. (*Figure 3*)



(Figure 3)

Grinding Support Pads :

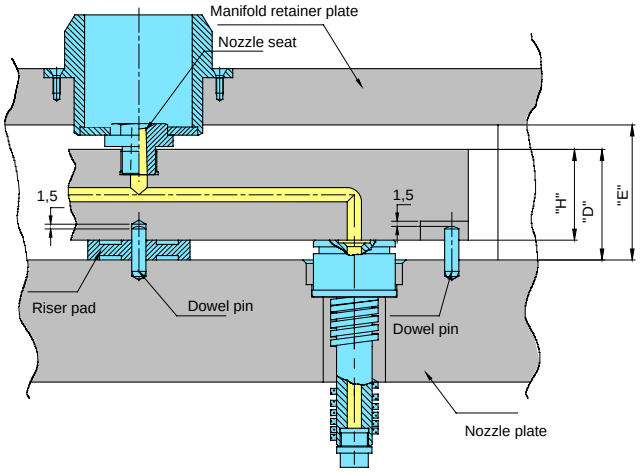
Note:
Mark the nozzle bodies on their outer diameter with the location in which they will be installed.
Pay particular attention to systems that utilize different length nozzles. On multi-cavity molds, the marked number will normally reflect the cavity number, which in turn will match the temperature control zone number. Each nozzle counterbore should be numbered with its appropriate location. Use the “U” corner as a location reference.
With each manifold and component system, ***D-M-E*** supplies a wiring diagram indicating probable locations. If the supplied diagram does not suit your needs, it is important that the diagram be remarked or a new diagram be made.
A copy of the revised wiring diagram should be forwarded to ***D-M-E*** ’s Applications Engineering Department to keep the system file current. This will facilitate troubleshooting any problems that might arise at a later time.

5. If needed, size the manifold center support to a dimension of +0.000 to -0.025 mm to the height of the nozzle heads found in Step 4. Grind both sides of the center support pad to ensure parallelism.
(Please note: The support pads are manufactured from a non-magnetic material. Fabricate a fixture plate to the grinder.)

6. Properly position the manifold using two dowel pins. The first dowel will be located at the center of the manifold. Install this dowel through the center support pad. The second dowel location normally will be positioned at one of the manifold ends.
The end location will be machined in the form of a slot, which will allow for expansion of the manifold when it reaches operating temperature. The length of these dowel pins should be 1.5 mm less than the combined depths of their installation holes in the nozzle (or “**A**”) plate and the manifold, plus the height of the center support pad determined in Step 6. The 1.5 mm dimension ensures that the dowels do not hold the manifold off the nozzles.
The use and proper location of these dowels is important to ensure nozzle drop locations line up accurately with the nozzle flow channel holes. Install dowel pins and check that their height meets the above criteria.

7. Check the manifold thickness (dimension **“H”**). Do not include the reflector plates in this measurement.)
Next, test-fit the manifold block over the nozzles and dowel pins, making sure that the manifold lies flat across the nozzles with no rocking motion.

8. Establish the “**D**” dimension by adding the average “**C**” dimension to the “**H**” manifold thickness.



(*Figure 4*)

9. Before installing the manifold retainer plate, check the thickness of the retainer plate (dimension “**E**”).
Carefully install the manifold retainer plate taking care not to pinch any wiring. Check for proper clearance around the perimeter of the manifold to the manifold retainer plate, and also around the manifold heater termination areas.

Note:
It may be necessary to machine clearance slots in the manifold retainer plate to clear the nozzle heater leads.

10. Size and install the upper support pads into the underside of the top clamp plate. (Please note: The upper support pads are manufactured from a non-magnetic material. Fabricate a fixture to the grinder to hold the support pad.) This dimension will be the difference between the “**E**” dimension minus the “**D**” dimension minus cold clearance.

Guidelines for the use of a manifold block

Note:
Use the following formula to determine cold clearance:
[" H" x (T° processing in °C - 20) x 11,5 x 10^{-6} - 0,076] x 46 mm
"H"

"H" = the manifold thickness.
Do not include reflector plates in this measurement.

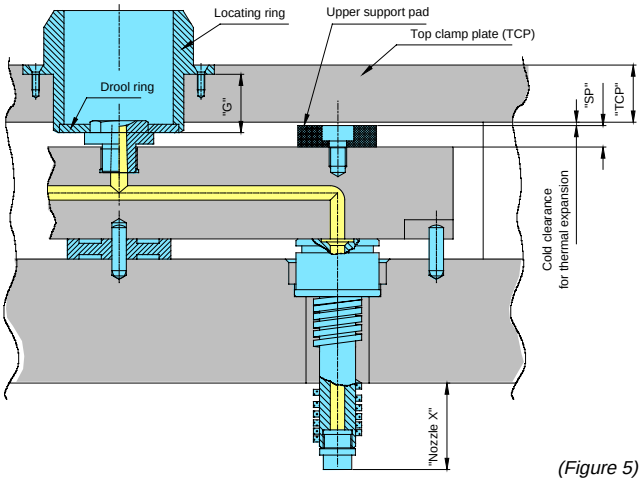
11. Test-fit the top clamp plate to check interference between upper support pads and any manifold components or wiring. Check the Nozzle "**X**" dimension (*Figure 5*). This dimension should fall within ± 0.025 mm of each other. Remove the top clamp plate and inspect the manifold area. Remove the retainer plate and set it aside temporarily.

12. Next remove the manifold, taking care to protect wiring, and prepare to install seal rings into the head of the nozzles. Check to see that all nozzles and their locations are properly marked. Mark all nozzles, power and thermocouple leads to ensure proper connection into the system terminal box. At this time, it is possible to wire-up the nozzle assemblies to the power and thermocouple connectors.

13. Clean seal ring counterbores, install seal rings, and then carefully install the manifold into position without displacing the seal rings from their locations.
It is now time to wire-up the power and thermocouple leads to the proper connectors.
Clean and install the manifold retainer plate.
Do not pinch wiring.
Clean and install the top clamp plate. Then torque down the bolts that tie the top clamp plate to the nozzle plate using the torque values specified on the system design drawing.

14. Determine the locating ring cut-off dimension "**G**" (*Figure 5*). If a drool ring is used, measure down from the surface of the locating ring flange to the nozzle seat flange on which the drool ring rests. Subtract 0.25 mm to determine dimension "**G**". Machine the locating ring skirt length to this dimension. Finally, install the drool ring and locating ring onto the top clamp plate. If the locating ring rests directly on the manifold, please refer to page 66.

15. Final assembly:
Carefully assemble the top clamp plate. Use caution to avoid pinching any of the system wiring. Install all assembly screws and torque down as required. Recheck all wiring for continuity. Bench test the unit.



(Figure 5)

Guidelines for the use of a manifold block

Wiring Guidelines

1. Ground connection :
   A ground connection must exist between the runnerless molding system (mold base) and the temperature control system. This is accomplished via the mold power cable, which contains a ground wire (green or green/yellow) provided on the connector.
   To prevent electrical shock and ensure personal safety, the grounding wire should be connected to the mold base or the terminal box itself.
2. Power and thermocouple connector placement :
   Do not place the mold's power or thermocouple plugs in any area where they will be exposed to extreme temperature or humidity.
3. Confirm zone numbering with respect to cavity numbers.
4. *Wire channels :*
   Use wire channels to ensure that wiring for nozzle and manifold (including thermocouples) is routed away from the manifold. Use retainer clips to hold the wiring in the channels to prevent wires from being cut or pinched during final assembly.
5. Recheck resistances of heaters and T/Cs. Compare to previous results. If values are different, trouble-shoot the system. Compare these values to those provided on your design.
6. Adding additional wire to nozzle heater lead:
   If additional lead length is required, use the same type of wire and use crimp contacts.
7. Adding additional wire to thermocouple leads:
   If additional lead length is required, use only type "J" thermocouple wire (positive (+) white, negative (-) red).

   Note:
   In the event that multiple zones are ganged together to minimize the required number of control zones, it will be necessary to use one pair of thermocouple wires per ganged set of nozzles. Run other thermocouple leads into the therminal box, insulating and identifying each for use as spares if required at a later date.

Perform the following checks before installing the runnerless molding system into the press :

1. With the system properly grounded, execute an electrical check of each control zone for both power and thermocouple connections. Check the heater leads for continuity. The resistance checked to ground of all heater leads must be greater than 200.000 Ω (200 K Ω).
2. Check each thermocouple circuit for continuity. It is also important to check for continuity between thermocouples and heater elements. There should be no circuit between the heater element and the thermocouple.
3. Bench test the unit with the temperature controller set at 150 °C. Ensure all heaters come up to the desired set point. If desired set point is not reached, trouble shoot the system.
4. When the mold is installed in the press and all water connections are made, plug the power and thermocouple cables into the mold terminal box.

   Note:
   Confirm the mainframe is off before making connections to the mold.
5. Set the temperature controller to the correct processing temperature for the material being molded.

   Note:
   Allow all heaters to go through a moisture dryout process.
6. Bring the system up to the correct processing temperature. Turn on mold water (cooling) and close the mold. Extremely cold water is not necessary. Water temperature of 40 °C should keep the "**A**" side of the mold from expanding at a different rate than the "**B**" side of the mold.
7. When the runnerless molding system has reached set point and is normalized, the temperature controllers will show a green light in the center of the deviation light display.
8. Make sure that the machine nozzle orifice is as large as, but not larger than, the nozzle seat orifice on the manifold.
   This will allow maximum throughput to the runnerless molding system and the mold cavities.
9. Be certain that the nozzle radius on the machine barrel matches the nozzle seat radius on the manifold to prevent drooling. This should ensure a leak-proof seal.
10. Purge the barrel to ensure stable material enters the manifold.
11. Move the machine nozzle into position against the manifold nozzle seat.

Manifold Filling Procedures :

1. Ensure that the machine's nozzle tip is properly seated on the manifold nozzle seat.
2. Set machine back pressure to 20 to 35 bars.
3. Run the extruder until material flows through all nozzle orifices (gates). Run for an additional 5-15 sec. Then clear gates and all mold surfaces of material. If the machine nozzle will not stay against tool, see ***Notes*** following these instructions.
4. Move the sled back and decrease back pressure to normal setting.
5. Set decompression/suck back at a minimum of 12 mm to control drool.
6. Set molding parameters.
7. Move sled forward.
8. Start the molding process.
9. Check the system for leaks.

The Hot-One System

Guidelines for the use of a manifold block

Notes & General Comments :
- If the system will not start up, throttle down or shut off water to the "**A**" plate. Water to the nozzle plate should remain on.

- If the machine will not extrude with the tool open, close the tool, jog the screw forward, open the tool, close the tool, and jog the screw forward again.

- If the machine nozzle will not stay against nozzle, proceed with caution. Set injection forward pressure to 10 bars. Set injection speed to slow, making sure the system is up to temperature. Move the sled into the tool and cautiously jog injection forward until material flows through gates. If necessary, raise the injection pressure in steps up to, but not exceeding 35 bars. Clear gates and all mold surfaces of material. Finally, start the molding process.

- Never inject plastic through the hot runner system with the mold open.

Important:
Please treat these suggestions as guidelines only.
Always follow standard moldmaking industry practices to ensure the proper function of the mold and runnerless system.

CAUTIONS !

Make sure you wear proper safety equipment such as gloves and face shield at all times.

Never use a torch to open frozen-off gates. This may damage tips, gate detail, or the mold itself.

If you insert anything into the gate or tip to clear it, you must first back the machine nozzle away from the tool.
Check for drool out the back of the manifold before you start. Drool here will indicate little or no pressure in the manifold.

Never inject any runnerless molding system with high injection pressure when the mold is open.

During the first 15 min. of operation, check system for leaks. Loss of shot size could be an indication of leakage.

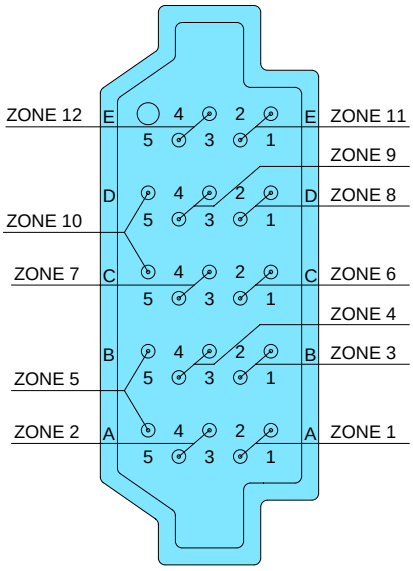
Check to see that all cooling fans are operating in temperature control main frames.

Input voltage to the main frame system must not be less than 208 vac.
Voltages less than 240 VAC will require an extended time to bring the system up to its proper operating temperature. Lower voltages decrease effective wattage. For example: at 208 VAC, the effective wattage is 25 % less than that at 240 VAC.

PIC-24 G

Mold power input connector

Connection diagram



ZONE	CONTACT
ZONE 1	A1-A2
ZONE 2	A3-A4
ZONE 3	B1-B2
ZONE 4	B3-B4
ZONE 5	A5-B5
ZONE 6	C1-C2
ZONE 7	C3-C4
ZONE 8	D1-D2
ZONE 9	D3-D4
ZONE 10	C5-D5
ZONE 11	E1-E2
ZONE 12	E3-E4

New mold power connector PIC-24 G

All new ***D-M-E*** Hotrunner systems will be fitted with the new PIC-24 G connector.
The PIC-24 G replaces the PIC-25 G connector and provides for the higher continuous power requirements of hotrunner systems and is conform with the new CE regulations. This modular connector, like its predecessor, connects 12 heating zones to the temperature controller unit.
The contacts are rated 20 Amps at 400 Volts and the connector's footprint is only slightly larger than before.
The main frames, MFPX-5, 8 or -12 G, are equipped with the new power cable MPC-24 G that fits the new PIC-24 G mold power connector.
However, to overcome the transition problems from old to new style, ***D-M-E*** offers the possibility to use adapter cables (length 0.5m).

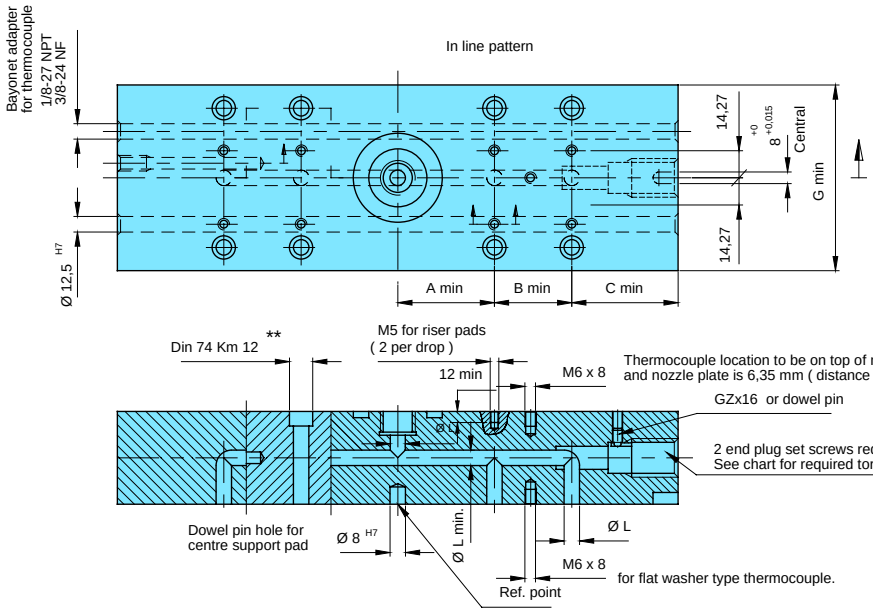
MPC-2524 : connects molds with the old PIC-25 G to the new MPC-24 G power cable.

MPC-2425 : connects molds with the new PIC-24 G to the old MPC-25 G power cable.

Furthermore, the ***D-M-E*** terminal mounting boxes PTCX and PICX are provided with an extra plate so that both styles power connectors can be fitted.

The Hot-One Manifold

Manifold layout - steel ***D-M-E*** 3 (1.2312) or steel ***D-M-E*** 5 (1.2344)



Set screw torque chart	
Thread	Nm
M 22 x 1,5	80
M 32 x 1,5	210

REF		EHA nozzles			CIA nozzles		Gate Mate 4™	Mini Gate Mate	Osco®Valve Gate nozzles			Micro Nozzles		Multiple Gate nozzles	
		Series 250	Series 375	Series 625	Series 250	Series 375	GMB	GMB	Series 50	Series 100	Series 200	MSP MSO	MEP MEO	Series 38 MGS	Series 60 MGS
Dimensions	*A min	35	41	64	35	41	35	35	39	65	84	22	20	100	120
	*B min	39	51	77	39	51	39	39	47	100	116	23	18	85	105
	C min	36	52	66	36	52	52	52	36	52	66	30	30	36	36
	(*) G min	46	56	66	56	56	46	46	56	56	66	46	46	70	88
	(**) ØL	6,3	9,5	16	6,5	9,5	9,5	9,5	6,3	9,5	16	3,5	3,5	8	8

* For a correct regulation of the distributor channels, install the thermocouple as close as possible to the distributor channel and symmetrical to the heaters.

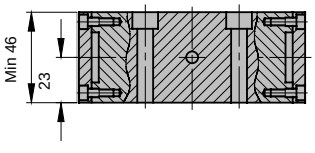
Manifold Watt density	
Melt temperature T (°C)	Optimal power density (W/Cm³)
T≤250	2,0
T≥250	2,5

$\Delta LD = \alpha \times LD1 \times \Delta T$
ΔLD = Expanded nozzle distance
LD1 = Nozzle distance (from ref. point) in mm
ΔT = Processing temperature in °C - mold temperature
α = For instance ***D-M-E*** steel n° 3 (1.2312) = 0.0000138

** Torque socket head cap screws M12 DIN 912 in 12.9 steadily with 25 NM.
(*) Indicative value only – varies with plastic material and shot weights (Consult ***D-M-E*** if in doubt)
(**) With tubular heater

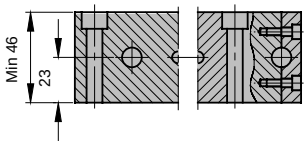
The Hot-One Manifold - Height recommendations

Series 250, 375, GMB, Micro



Manifold with heater retainer plates and single level rectangular heater

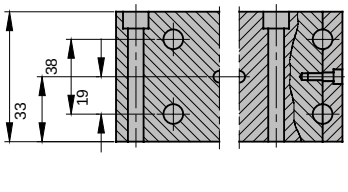
Series 250, 375, GMB, Micro



Simple manifold with single level heater

Manifold with heater retainer plates and single level heater

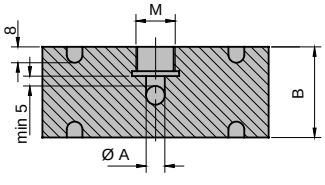
Series 375, 625
When more 'Watt density' is required



Solid Manifold with dual level heaters

Manifold with heater retainer plates and dual level heaters

With tubular heaters



	BHA M 20	BHA M 24
A	B	B
6,3	36	40
9,5	46	50
16	46	50

The Hot-One Manifold

Ancillaries Hot-One Manifold

End caps
EHM GZ EEP EDR p. 73

Heated Nozzle adapters
HR DR/EHL DI WTO BHA/EHN p. 66/67

Manifold heaters
CHR CHS ECH EHP Tubular heater p. 68-70

Thermocouples (no view)
TC ETC BA TCM p. 71/72

Spacer rings
ESR p. 72

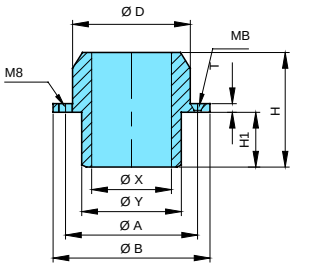
Support blocks
ECB p. 72

Riser pads
ERP p. 72

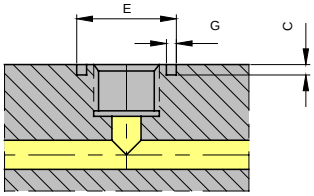
Ancillaries - Nozzle adapters

EHL

Locating ring



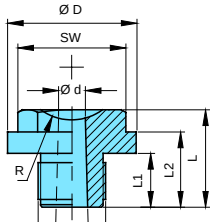
Installation



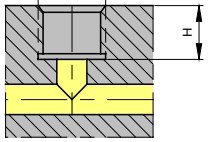
REF.	H	H1	T	A	B	D	X	Y	E	G	C
EHL 0252EX	73	34,9	5,53	84,1	100	75	50,8	63,5	65	10	3,2
EHL 0253EX	73	34,9	5,53	117,5	140	100	82,6	95,2	98	10	3,2

EHN

Nozzle seat



Installation



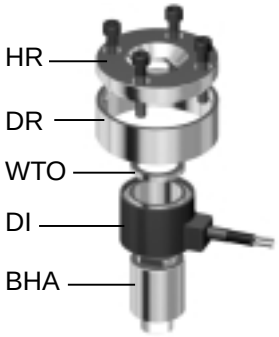
REF.	D	SW	G	L	L1	L2	d	R	H
EHN 0001EX	38,10	32,00	M20x1,5	28,60	15,80	22,10	7,90	15,5	15,00
EHN 0002EX	38,10	32,00	M20x1,5	28,60	15,80	22,10	7,90	0	15,00
EHN 0003EX	47,60	38,00	M24x1,5	44,50	19,00	34,80	9,50	15,5	18,50
EHN 0004EX	47,60	38,00	M24x1,5	44,50	19,00	34,80	9,50	0	18,50

Provides a replaceable and interchangeable interface between manifold and machine nozzle.

The Hot-One System

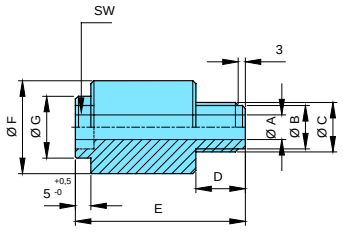
The Hot-One Manifold

Ancillaries - Heated nozzle adapters



BHA

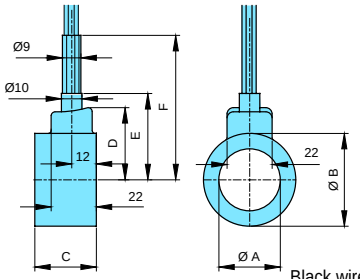
Heated adapter



REF.	A	B	C	D	E	F	SW	G_{f7}
BHA M20	Ø 8	Ø18	M20 x 1,5	15,8	60	30	16	20
BHA M24	Ø12	Ø22	M24 x 1,5	19,0	68	40	24	30

DI

Band heater with thermocouple type 'J'



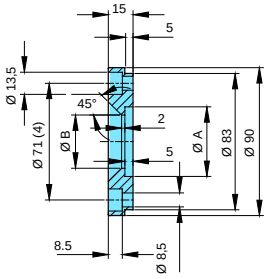
REF.	A	B	C	D	E	F	Watt 230 V
DI 30 x 30	30	45	30	35	50	70	330
DI 40 x 30	40	55	30	40	55	75	380
DI 40 x 40	40	55	40	40	55	75	490

Black wire 230 V
Black wire 230 V
White wire + } TC
Red wire - } type "J"

Note: to be heated before assembly

HR

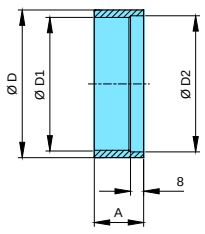
Nozzle locator



REF.	A	B
HR 30	30	20
HR 40	40	30

DR

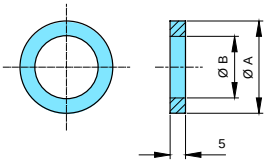
Distance bushing



REF.	A	D	D1	D2
DR 40	30	90	81	83
DR 90	60	90	81	83

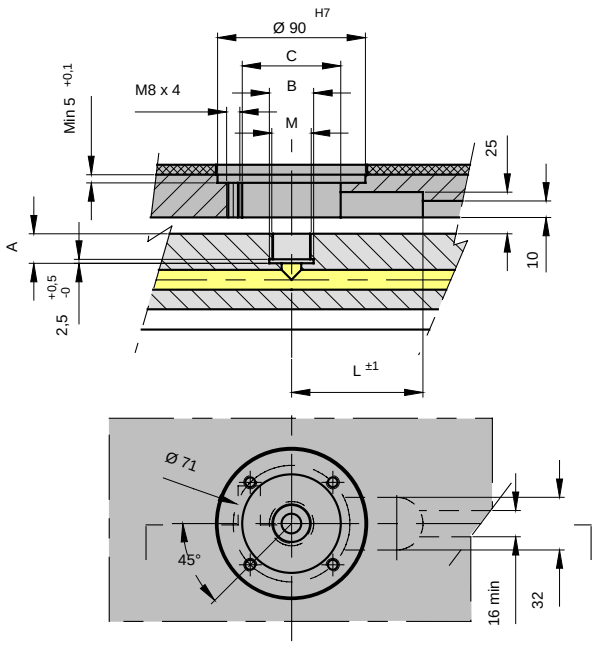
WTO

Insulating ring



REF.	A	B
WTO 30	30	20
WTO 40	40	30

Installation Instructions

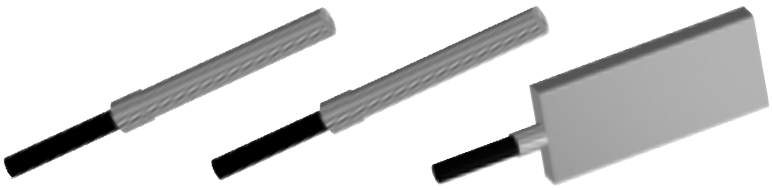


REF.	M	$A^{+0,02}$	$øB^{+0,2}$	$øC^{+0,2}$	$L^{+1min.}$
BHA M20	M20 x 1,5	14,8	24	ø50	75
BHA M24	M24 x 1,5	18	27	ø60	80

The Hot-One System

The Hot-One Manifold

Ancillaries - Manifold heaters Cartridge heaters

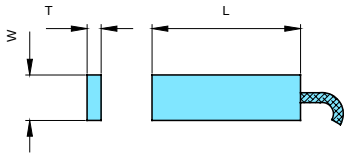


Although these heaters do not employ integral thermo-couples, they are designed and constructed to run at higher molding temperatures and provide longer life than conventional heaters.

Watt density for all cartridge heaters is 14 Watts per cm^2 and 6 Watts per cm^2 for rectangular heaters.
(240 VAC, 900 mm leads with 150 mm of stainless steel lead protection)

CHR

Rectangular

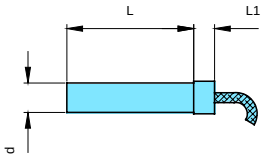


REF.	L	W	T	Watt 230 V
CHR 0135	51,0	25,4	6,35	185
CHR 0136	76,0			275
CHR 0137	101,5			370
CHR 0138	127,0			460
CHR 0139	152,5			550
CHR 0140	178,0			640
CHR 0141	203,0			735
CHR 0142	228,5			825
CHR 0143	254,0			920
CHR 0144	279,5			1000
CHR 0145	305,0			1100
CHR 0146	406,5			1470
CHR 0147	457,0			1650
CHR 0148	610,0			2200

Heater shape provides added surface contact. Retainer plate is required for installation.

CHS

Shoulder type



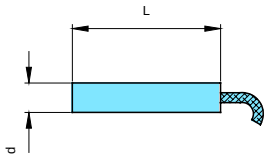
Heater puller to be ordered separately.

REF.	L	L1	d	Watt 230 V
CHS 1119	85	15	12,5	460
CHS 1120	100			530
CHS 1121	115			600
CHS 1122	125			665
CHS 1123	135			735
CHS 1124	150			800
CHS 1125	165			870
CHS 1126	175			940
CHS 1127	190			1000
CHS 1128	200			1080
CHS 1129	215			1100
CHS 1130	235			1240
CHS 1131	265			1380
CHS 1132	285			1500
CHS 1133	365			1880
CHS 1134	445			2300

These heaters are used in conjunction with heater pullers. They ensure easy removal of blind or through hole installation.

ECH

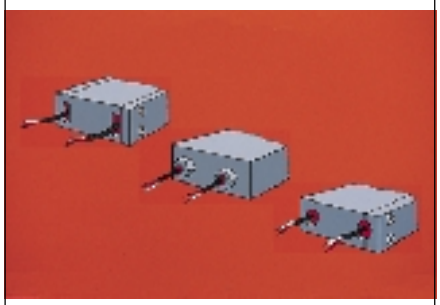
Standard



REF.	L	d	Watt 230 V
ECH 1103	100	12,5	460
ECH 1104	115		530
ECH 1105	130		600
ECH 1106	140		665
ECH 1107	150		735
ECH 1108	165		800
ECH 1109	180		870
ECH 1110	190		940
ECH 1111	205		1000
ECH 1112	215		1080
ECH 1113	230		1100
ECH 1114	250		1240
ECH 1115	280		1380
ECH 1116	300		1500
ECH 1117	380		1880
ECH 1118	460		2300

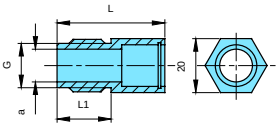
Can be installed in through hole or installed using retainer plate construction.

Rectangular, standard and shoulder type

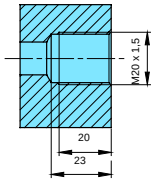


EHP

Heater puller for CHS



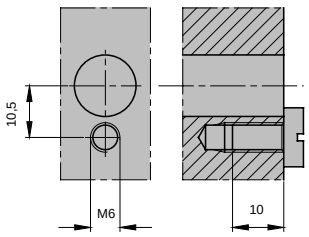
Installation



REF.	G	a	L	L1
EHP 0167 X	M20 x 1,5	12,5	41,3	20,7

Provides trouble free removal of shoulder type cartridge heaters.

Installation



The Hot-One System

The Hot-One Manifold

Ancillaries - Tubular Manifold heaters

D-M-E's tubular heaters are the most versatile heater elements to economically provide efficient heat transfer. Their implementation contributes greatly to the design of a balanced and reliable manifold system.

Depending on the application, tubular heaters can be manufactured into many shapes: straight, U-shape, *circular, hairpin, W-shape.* This feature allows the design of higher wattage systems where watt density is a limiting factor. A thorough heat transfer analysis is required to make a success of each application.

The design of a tubular heater system is based on variables such as: temperature limits, power requirements, space limitations, medium to be heated, and heated length.
The heated length may not extend into a sharp bend area.

D-M-E's tubular heaters have proven to be durable and reliable. They are available in a large variety of dimensions.

Safety

Electrical heaters are inherently dangerous! Care should be taken to read and completely understand the installation and maintenance manual before installing and wiring the heater. Any installation and maintenance performed on the heater shall be done by a qualified electrician, in accordance with the electrical codes as they apply. It is the user's responsibility to ensure that the heater being used is properly selected and installed in the application.

The Caution Symbol (exclamation point) alerts you to a "CAUTION", a safety or functional hazard which could affect your equipment or its performance.

The Warning Symbol (lightning bolt) alerts you to a "WARNING", a safety hazard which could affect you and the equipment.

Installation

Proper heater installation will result in efficient heat transfer, safe operation, and long heater life.

1. Megohm precheck :
During shipping and/or storage, the possibility of moisture absorption by the insulation material within the element is possible. To ensure proper megohm values a minimum 500 VDC megohm meter (Megger) should be used to ensure that the megohm reading between the heater terminal and the heater sheath is more than 10 megohms when the unit is at room temperature.

If a low megohm value exists, two alternative methods can be used to remedy the situation. The best method is to remove all terminal hardware and bake out the heater at no higher than 120 °C overnight or until an acceptable reading is reached. The second method is to energize the unit at low voltage in air until the megohm is at an acceptable reading.

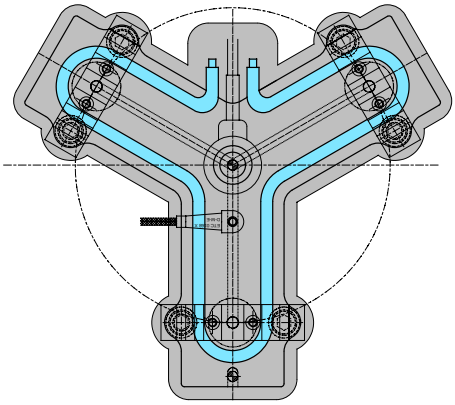
2. Protection of heater elements from over temperature :
The use of temperature controls to regulate heating process and prevent heater over temperature is highly recommended to ensure safer heater operation. It is the user's responsibility to ensure safety of the installation.

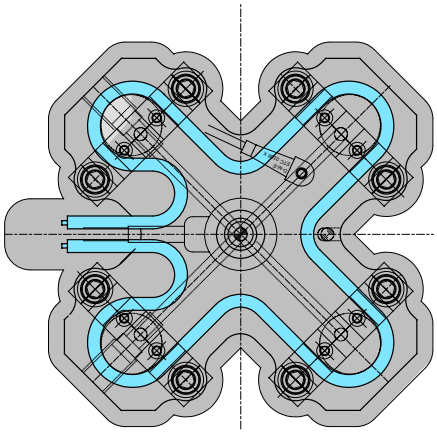
3. Make sure that the electrical leads connecting the heaters to the temperature control unit, have a sufficient caliber.

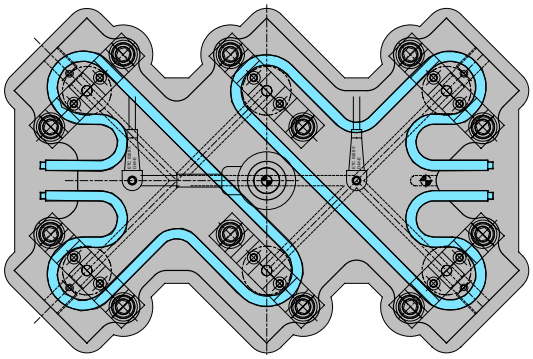
Sheath

Performance capability: maximum temperature of 872 °C.
Sheath is made of corrosion resistant steel.

Typical configurations





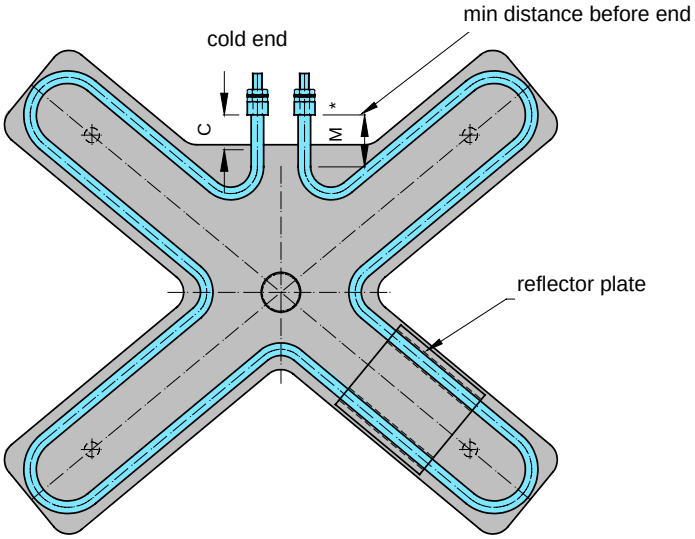


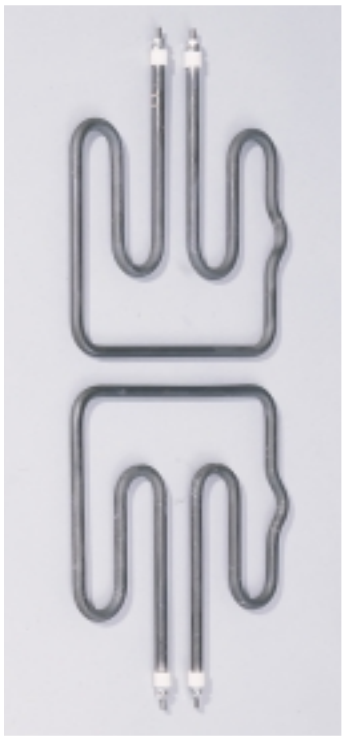
The Hot-One Manifold

Ancillaries - Manifold heaters

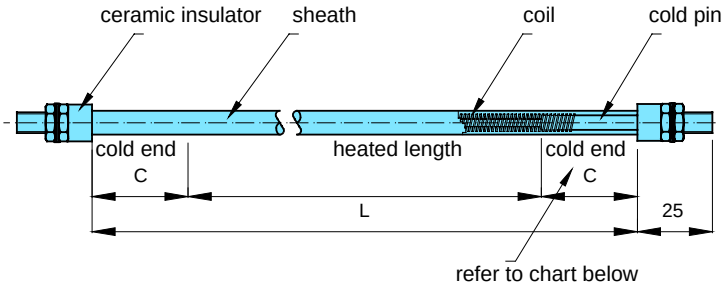
Tubular heaters

Never allow heated section to extend past edge of manifold



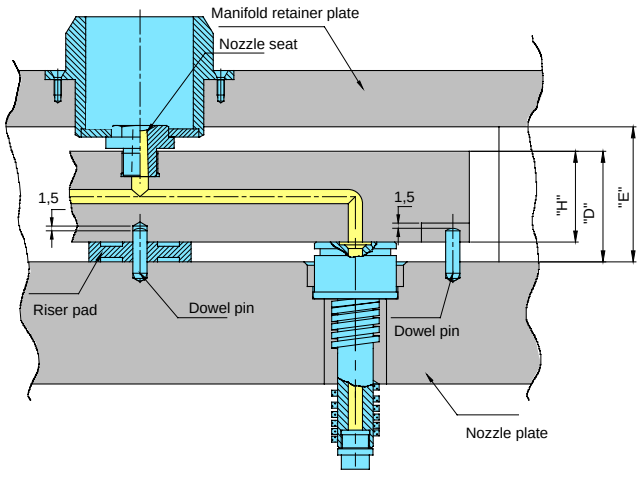


- All shapes and dimensions possible
- Balanced manifolds
- Long life heaters
- Consult ***D-M-E***



Lmm	< 500	< 1000 ≥ 500	< 2000 ≥ 1000	< 2800 ≥ 2000	< 3600 ≥ 2800	< 4300 ≥ 3600
C	25	32	38	42	44	51

*M = C + 13 + 0,005 x L



Use the following formula to determine cold clearance:
["H" x (T° processing in °C - 20) x 11,5 x 10^{-6} - 0,076] X $\frac{46}{\text{"H"}}$ mm

"H" = the manifold thickness.
Do not include heater covers in this measurement.

The Hot-One System

The Hot-One Manifold

Ancillaries - Thermocouples

D-M-E Bayonet thermocouples are made of 0,5 mm stranded glass-insulated wires. The grounded hot junction is in the end of a 4,78 mm OD stainless steel protecting tube for fast response and long life. The tube features a round tip and is fitted with a stainless steel spring loaded bayonet fitting. Lead wires are protected by rugged 4,78 mm flexible armor (lead wire calibration is ANSI Type 'J' Iron/Constantan).

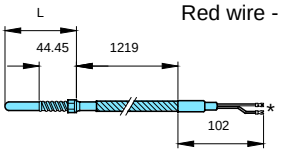
Armor cable is 1 m long, spade lugs are attached at the end of the lead wires for easy connection to terminal strip or plug.

Adjustable bayonet type thermocouples fit hole depths up to 266 mm and will conform to any angle.

TC

Straight type

* White wire +
Red wire -

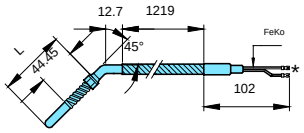


REF.	L
TC 2500	63,5
TC 3500	88,9
TC 6000	152,4

TC

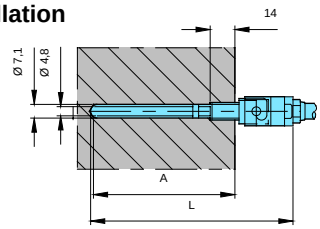
45° Angle type

* White wire +
Red wire -



REF.	L
TC 2545	63,5
TC 3545	88,9
TC 6045	152,4

Installation



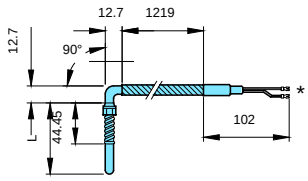
L	A	
	22,2*	34,9*
63,5	25,4-34,9	12,7-22,2
88,9	50,9-60,3	38,1-47,6
152,4	114,3-123,8	101,6-111,1
266,7 max	12,7-266,7	12,7-266,7

*= Adapter length

TC

90° Angle type

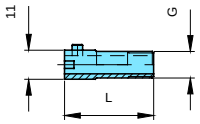
* White wire +
Red wire -



REF.	L
TC 2590	63,5
TC 3590	88,9
TC 6090	152,4

BA

Bayonet adapter



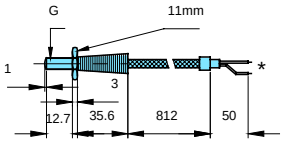
The stainless steel bayonet adapter accomodates the spring loaded bayonet fitting on the thermocouple to bottom the hot junction where temperature sensing is desired. The adaptor requires a tapped hole for fitting

REF.	L	G
BA 1007	22,2	1/8-27 NPT
BA 1013	34,9	
BA 4007	22,2	3/8-24 UNF
BA 4013	34,9	

ETC

Threaded type

* White wire +
Red wire -



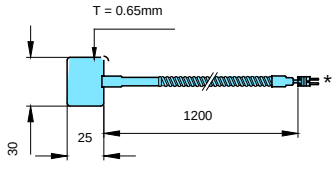
Installed in manifold between the heat source and the flow channel to maintain precise temperature control.

REF.	G
ETC 051	1/4-28 UNF
ETC 0251 M	M6

TC

Spade type

* White wire +
Red wire -



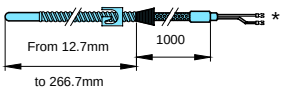
Spade type thermocouples are used between band heaters and machine nozzles in applications where space will not permit bayonet type thermocouples. The stainless steel spade is only .0,65 mm thick and can be easily contoured to fit various diameters.

REF.
TC 9000

TC

Adjustable type

* White wire +
Red wire -



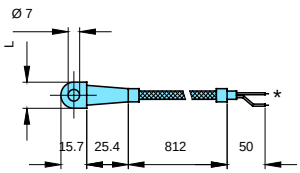
By turning the Adjustable bayonet fitting along the spring, the Adjustable thermocouple can be set for the desired immersion length, from 12,5 mm to 266 mm. Spring will conform to any angle. Hot junction of ANSI type 'J' I/C calibrated leads is inside round tip. Flexible metal braid is 1 m long with 63 mm of lead wires at the end and spade lugs for ease of connection.

REF.
TC 8000

TC

Flat washer type

* White wire +
Red wire -



Installed in manifold to maintain precise temperature control. Utilized in limited space applications.

REF.
ETC 0168

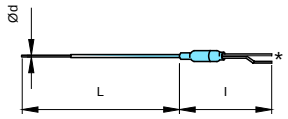
The Hot-One Manifold

Ancillaries - Thermocouples

TC

Nozzle type

* White wire +
Red wire -



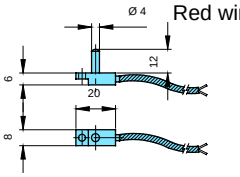
Installed in Hot-One nozzles

REF.	L	l	d
TC 19	70	1000	1,6

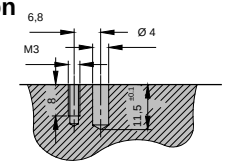
ETC

90° Screw-in type

* White wire +
Red wire -



Installation

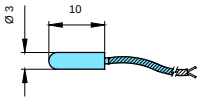


REF.
ETC 0170

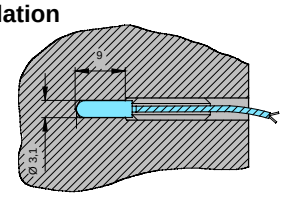
Installed in Micro Hot-One manifold to maintain precise temperature control.

TCM

Cylindrical type



Installation



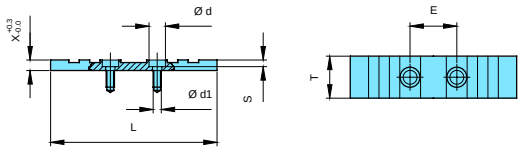
REF.
TCM 0003

Installed in Multiple gate nozzles when used with manifold.

Ancillaries - Others

ERP

Riser pad

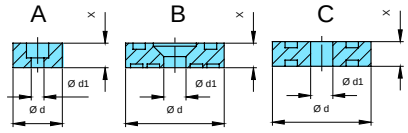


REF.	L	X	T	d	d1	S	E
ERP 0161	50,0	10,0	15,0	10,0	5,7	4,5	28,6
ERP 0162	50,0	20,0	15,0	10,0	5,7	4,5	28,6
ERP 0163	101,6	9,5	25,4	10,0	5,7	4,0	28,6
ERP 0164	101,6	19,00	25,4	10,0	5,7	4,0	28,6

Supports manifold opposite nozzles. Reduces heat loss and maintains spacing between manifold and clamping plate.

ECB

Support block



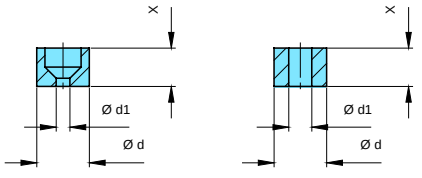
ECB-0501 ECB-0502 ECB-0466/0467
ECB-0161/0166/0167

REF.	d	d1	X	Type	Mat.
ECB 0161	63,50	6,35	6,35	C	Steel
ECB 0166	30,00	8,00	20,00		
ECB 0167	40,00	8,00	10,00		
ECB 0466	30,00	8,20	20,00		Titanium
ECB 0467	30,00	8,20	10,00		
ECB 0501	20,00	5,20	10,00	A	
ECB 0502	40,00	8,20	10,00	B	

Support manifold center spacing, while minimizing heat transfer from manifold. The titanium greatly reduces heat loss.

ESR

Spacer ring



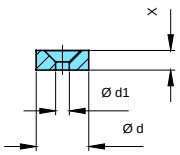
Titanium steel

REF.	d1	d	X	Mat.
ESR 0157	10,3	22	6,35	Steel
ESR 0163	10,3	22	10	
ESR 0164	10,3	22	20	
ESR 0166	13,5	22	20	
ESR 0463	10,3	22	10	Titanium
ESR 0464	10,3	22	20	
ESR 0466	13,5	22	20	

Maintains spacing between manifold and support plate, and titanium greatly reduces heat loss.

ECB

Support block

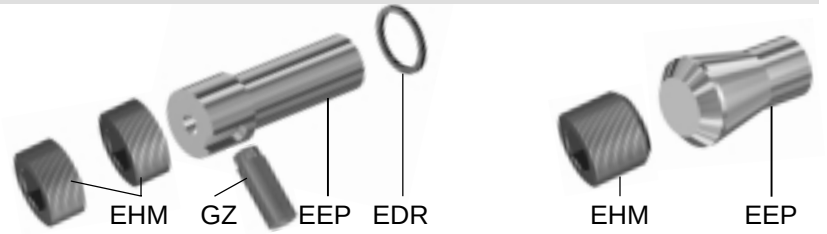


REF.	d	d1	X	Mat.
ECB 0500	16,00	4,20	6,00	Titanium

The titanium support block greatly reduces heat loss.

The Hot-One System

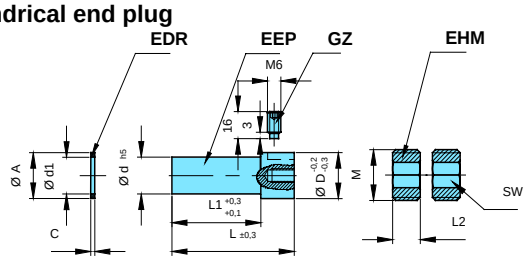
The Hot-One Manifold



Ancillaries - End plugs

EEP

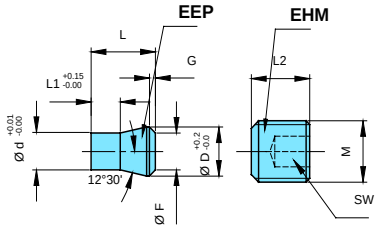
Cylindrical end plug



REF.	A	C	d1	L	L1	D	d	M	L2	SW
EEP 2440	30	2,0	24	60	40	30	24	32 x 1,5	15	17
EEP 1630	20	1,5	16	45	30	20	16	22 x 1,5	12,5	10
EEP 1018	14	1,0	10	28	18	14	10	16 x 2,0	9	8
EEP 0815	12	1,0	8	25	15	12	8	14 x 2,0	16	6
EEP 0612	10	1,0	6	19,5	12	10	6	12 x 1,75	16	6

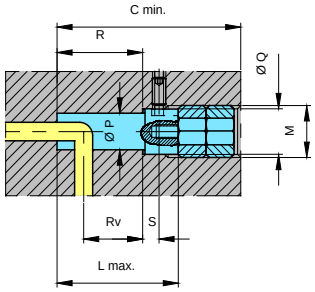
EEP

Conical end plug



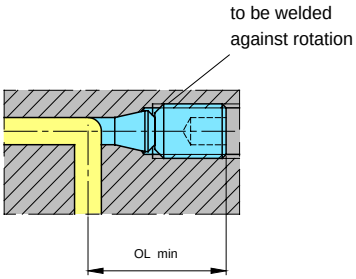
REF.	d	D	L1	L	F	G	M	L2	SW
EEP 2001	6	9,0	6	15	6	6	M12x1,75	16	6
EEP 2002	9	13,5	8	20	10	9	M16x2	20	8
EEP 2003	12	16,0	10	22	14	12	M20x2,5	20	10

Installation



REF.	EEP 2440	EEP 1630	EEP 1018	EEP 0815	EEP 0612
Ø P^{H7}	24	16	10	8	6
Ø Q ($^{+0,2}_{+0,1}$)	30	20	14	12	10
R	38	28,5	17	14	11
S	12	10	6	6	6
C min.	L + 30	L + 25	L + 18	L + 16	L + 16
M	32 x 1,5	22 x 1,5	16 x 2,0	14 x 2,0	12 x 1,75
L max.	60	45	28	25	19,5
Rv min.	14	10	7	6	5

Installation

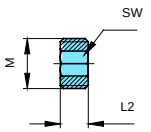


REF.	OL min.
EEP 2001	31
EEP 2002	40
EEP 2003	42

Spare Parts

EHM

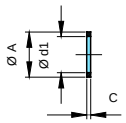
Cylindrical threaded plug



REF.	M	L2	SW
EHM 3215	32x1,5	15	17
EHM 2215	22x1,5	12,5	10
EHM 1620	16x2,0	9	8
EHM 1420	14x2,0	16	6
EHM 1217	12x1,75	16	6

EDR

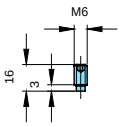
Seal ring



REF.	A	d1	C
EDR 2420	30	24	2,0
EDR 1615	20	16	1,5
EDR 1010	14	10	1,0
EDR 0810	12	8	1,0
EDR 0610	10	6	1,0

GZ

Set screw allan head

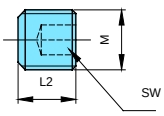


REF.
GZ 6 x 16

Spare Parts

EHM

Set screw



REF.	M	L2	SW	For
EHM 1217	M12 x 1,75	16	6	EEP 2001
EHM 1621	M16 x 2	20	8	EEP 2002
EHM 2025	M20 x 2,5	20	10	EEP 2003

D-M-E

Applications Engineering ☐ Quotation nr .....

Runnerless Molding Worksheet

Request for quotation

Part details

Part name:.....

Part supplied: YES / NO

Material:.....

Filler: ☐ NO ☐ GLASS ☐ OTHER

%.....

Flame retardant: YES / NO

Part weight:.....

Number of parts:.....

Total shot weight:.....

Number of injection points / part:.....

Part gate location:.....

System specifications

New mold ☐ Retrofit ☐

Mold base to be quoted: YES / NO

Protrusion of probe:.....

Max. dimension of hot-runner plate:.....

Color change: YES / NO

Frequency:.....

Which colors:.....

D-M-E temperature controllers required: YES / NO

D-M-E assistance required for:

- hot-runner assembly: YES / NO
- wiring: YES / NO
- start-up: YES / NO

Preferred molding system:.....

Comments:

.....

.....

.....

.....

Company: _____ Telephone: _____

Name:. _____ Telefax: _____

Position: _____

Address: _____

_____

_____

The Hot-One System

IMPORTANT

"This Runnerless Molding System was designed in all fairness by ***D-M-E*** Applications Engineering according to the state-of-the-art, and is the result of a long experience combined with up-to-date computer-assisted methods. Also the design was made according to the then available information.

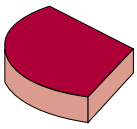
For Runnerless Molding Systems supplied complete by ***D-M-E***, manifold and components, a guarantee is implied that the molten plastic material will be delivered at the cavity gate in good conditions of discharge flow, pressure and integrity, provided that the material is genuine and does not present an abnormal behavior.

Because other important process and product design parameters are not under the control of the Runnerless Molding System designer, ***D-M-E*** will not be responsible for any problem that will affect the molded part. However, ***D-M-E*** will offer its best support to solve those problems.

The liability of ***D-M-E***, if any, is limited to the value of the delivered manifold and Runnerless Molding components."

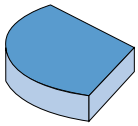
We Build Productivity

Runnerless Molding Systems



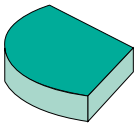
Hot Sprue Bushings

- Separate leaflet



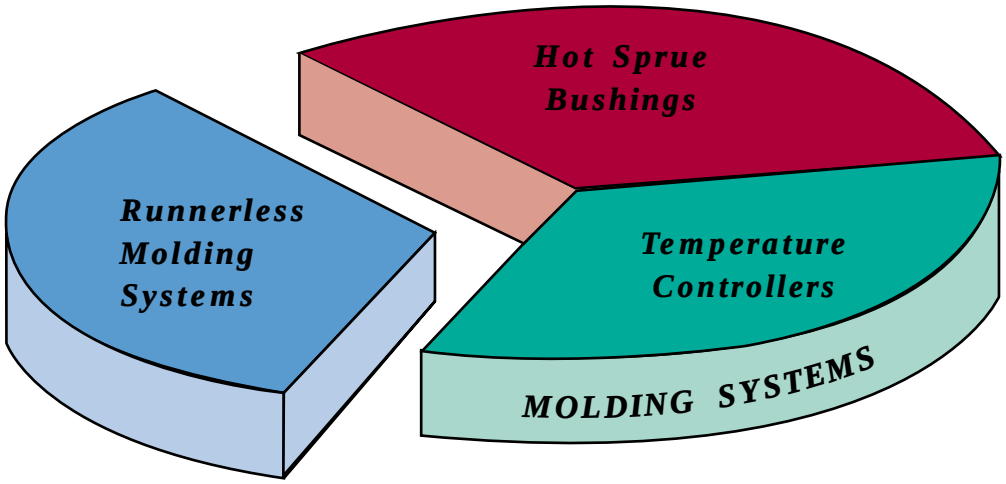
Runnerless Molding Systems

- The Cool-One system
- The Hot-One system
  - Standard system
  - Micro system
  - Osco® Valve Gate system



Temperature Controllers

- Separate leaflet



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