

Contents

Bodies and Cavities

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Contents**Bodies and Cavities**

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3A	3 Port	LB100**	BC56
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CVCheck
Valves**SH**Shuttle
Valves**LM**Load/Motor
Controls**FC**Flow
Controls**PC**Pressure
Controls**LE**Logic
Elements**DC**Directional
Controls**MV**Manual
Valves**SV**Solenoid
Valves**PV**Proportional
Valves**CE**Coils &
Electronics**BC**Bodies &
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CV

Check
Valves

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INTRODUCTION

This Technical Tips section is split into three parts; Standard Line Bodies, Cavities, and Cartpaks. In the standard line bodies section, we highlight the features and options of our standard offering of line bodies. In the cavity section we discuss “common” cavities and form tools. In the Cartpak section, we present the features and options to Parker’s line of D03 style sandwich bodies. The Technical Tips are provided to help you become more familiar with Parker Hannifin’s line of product and assist you in applying our product.

STANDARD LINE BODIES

Parker offers standard line bodies for each valve and cavity size. Below are some of the features of Parker’s standard line bodies.

Yellow Zinc Coating
Steel bodies are coated with yellow zinc dichromate providing protection from salt spray.

Common Cavity
Allows single body to be used for a number of functions.

Various Port Sizes
Each body has a variety of port sizes and types available.

Slotted Mounting Holes
Allows several bodies to be stacked together and held by one set of bolts.

Aluminum and Steel Bodies
Light weight aluminum bodies are available for low pressure applications. Durable steel bodies are available for higher pressures.

Clear Anodized
Aluminum bodies are thin coated with a clear anodize providing corrosion resistance.

COMMON OPTIONS & FEATURES

Aluminum vs. Steel: Parker offers standard line bodies in both aluminum and steel. Aluminum bodies are most often used for general applications. They are lightweight and less costly than steel bodies. Parker’s aluminum bodies are coated with a clear anodize to provide a corrosion resistant protection. Aluminum bodies should never be used in applications above 210 bar (3000 psi.) Steel bodies are more durable and

heavier than aluminum bodies. They are ideal for applications with elevated pressures or where rugged construction is desired. Steel bodies are suitable for applications up to 350 bar (5000 psi.) Parker’s steel bodies are coated with yellow zinc dichromate providing corrosion resistance. Yellow zinc dichromate even provides the steel body many hours of protection from salt spray.

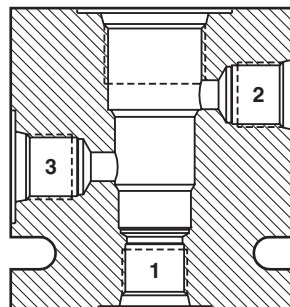
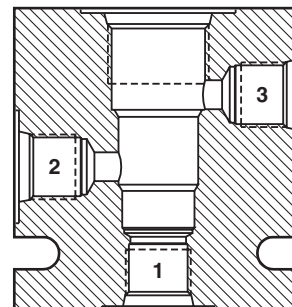
Technical Tips**Bodies and Cavities****COMMON OPTIONS & FEATURES (Cont.)**

Pressure Drop: The pressure drop through a line body is fairly minimal. Each catalog page shows a pressure drop curve. This should be added to the pressure drop through the cartridge when trying to estimate total pressure drop for a function.

Porting: Parker offers a variety of port sizes and types for each line body. While NPT or pipe ports were once very popular and are still offered, we recommend SAE ports for new applications. SAE ports and fittings provide a more secure connection than pipe ports. BSPP ports are also available.

Port Numbering Change: With this catalog, we have re-numbered the ports on our 3-way line bodies. In the past, three way bodies were numbered with the nose

being port 1, the middle port labeled (3), and the top port labeled (2). Over the years, this has caused some confusion, so we have relabeled the ports sequentially from the bottom. For identification, the current design will be marked with a Parker symbol like the one shown.

**Previous Design****Current Design****CAVITIES**

The hole that the cartridge valve is screwed into is called a cavity. Many cartridge producers manufacture valves that fit a “common” cavity. With a “common” cavity, a valve theoretically could be removed from a cavity and replaced by another manufacturer’s product. One should be careful though to check cross drill ports and thread depths when pursuing this activity. While it is true that many manufacturer’s products fit inside another’s cavity, the cross drills sometimes expose an o-ring to pressure, causing the o-ring to be extruded.

Valve / Cavity Compatibility Chart: Through acquisition, Parker Hannifin has accumulated a number of manufacturers with “common” cavities. To accommodate all of our product lines, we have released a new cavity for our Winner’s Circle product line. The cavities shown in this catalog are considered Winner’s Circle Cavities. The Winner’s Circle valves are downward and upward compatible with the Parker Series of product. On each catalog page, you will find a chart like the one shown on this page. The purpose of this chart is to help identify if a valve from one acquisition can be replaced by the Winner’s Circle valve, or another acquisition. The valves are designated by the columns of the chart and the cavities by the rows. If you have an existing cavity, you find it on the chart and follow across to see which valves you may put in the cavity. For instance, using the chart below, let’s say you have an existing manifold in which you had manufactured a FPS cavity (maybe you were using a SV2A-10). By finding the row labeled FPS and following across, you find that you could use the new Winner’s Circle product, an FPS product, or a CEC product of the same size in this cavity. A Parker or Waterman valve will not fit in this cavity without modifying the cavity. This chart is provided to help you in converting to the Winner’s Circle product line.

		VALVE				
		Winner's Circle	Parker	Waterman	FPS	CEC
CAVITY	Winner's Circle	X	X	X	X	X
	Parker	X	X	X		
	Waterman	X	X	X		
	FPS	X			X	X
	CEC	X			X	X

Cavity Tools: On each catalog page, cavity tools are listed for your use in creating special manifolds. More is discussed on manifold construction in the Technical Data section of this catalog. For 3-way and 4-way valves, you will find a roughing and a finishing tool. The rougher is a step drill used to prep the cavity for the finishing tool. The rougher removes the mass of material and is necessary because the finisher is not designed for primary forming. The finisher is a precision tool used to provide the final dimensions of the cavity. No rougher is offered for 2-way cavities because a standard drill bit can be used to remove the mass of material.

CV

Check
Valves

SH

Shuttle
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LM

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Controls

FC

Flow
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Pressure
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Directional
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Proportional
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Coils &
Electronics

BC

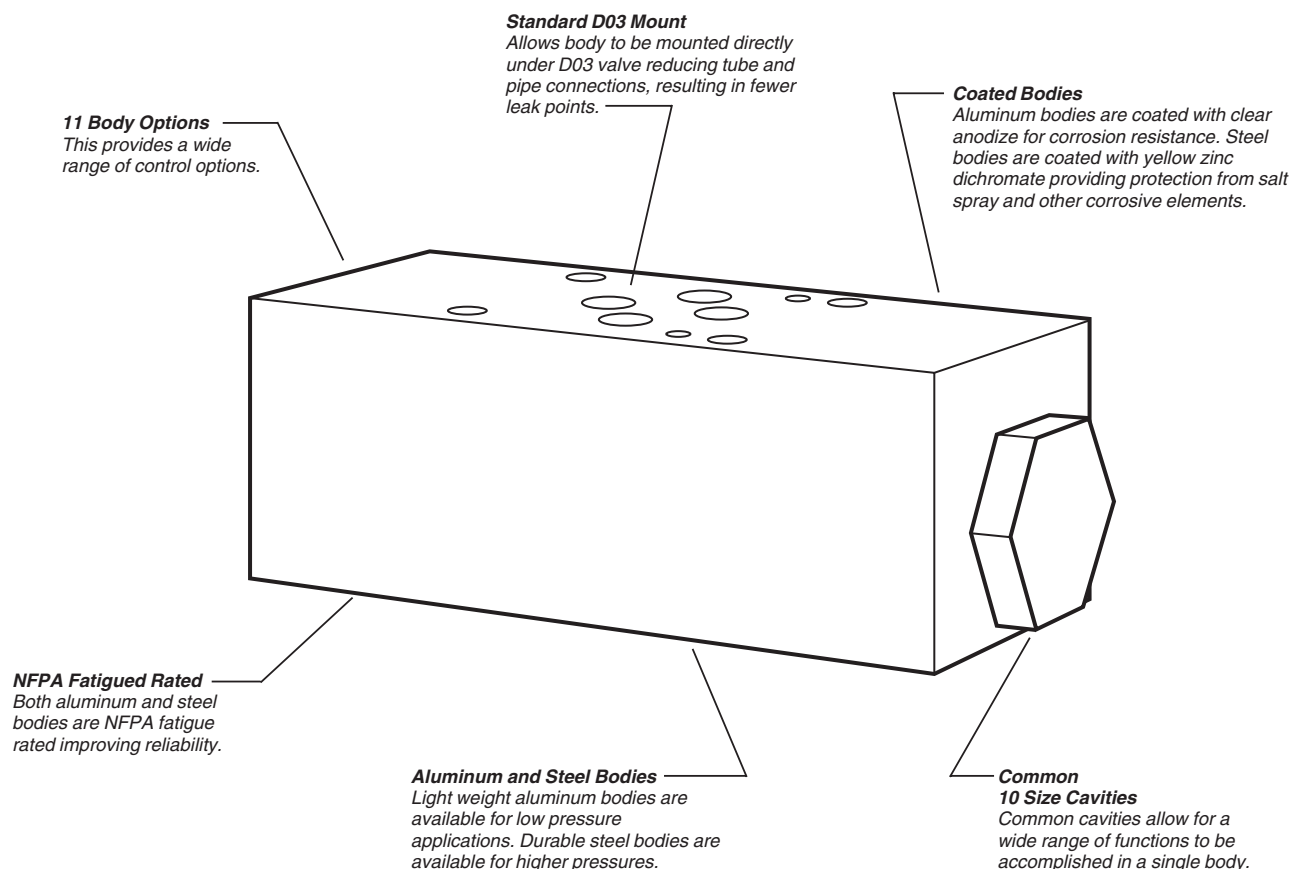
Bodies &
Cavities

TD

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CARTPAK BODIES

Parker Cartpak sandwich mounted bodies are designed to be mounted under a standard ISO 4401-03, NFPA D03, CETOP 3 size valve, and provide a multitude of different functions. The bodies are designed to accept a common 10 size cartridge valve allowing the designer the flexibility to use a single body to provide pressure, directional, flow, or load control. One or more Cartpak bodies may be “sandwiched” underneath a Parker D1 Series directional valve to provide the control functions for all portions of a hydraulic circuit. The ISO standard fatigue rated bodies are available in either aluminum or ductile iron.



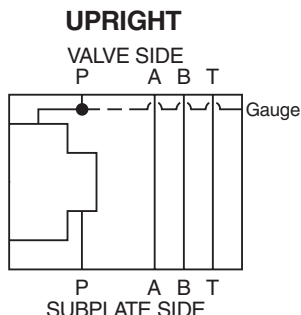
Catalog Pages: Each Cartpak catalog page is laid out in a similar format and is designed to help you select

the proper body for your application. In the top left corner of the page there is a brief description and body schematic.

The body schematic shows the cartridge cavity and the ports connecting to it. This schematic can be used to understand which valves can be used in the body. For instance, in the

example shown here, flow from the subplate in port P is directed into the nose of the cartridge. The side port

of the cartridge is connected to the valve side of port P. Thus, you want to choose cartridges providing the function desired, and use the nose as the inlet. For instance, a FC101 meters flow from its nose port to its side port and would be ideal for the p-port interrupt body shown.



Technical Tips

In addition to the body schematic, we also provide a hydraulic schematic at the bottom of each catalog page. This schematic shows a variety of Parker cartridge part numbers that can be used with this body. This list is not intended to be comprehensive, but it is intended to show the wide variety of options that can be achieved with each body. You will also note, the product listing shows the orientation of the block (upright or inverted), the cavity for the cartridge, and cavity plugs (when necessary.) Once again, many options can be achieved with each body.

O-Ring Plates: Since many of the Cartpak bodies can be “flipped” to achieve extra functions, the faces of the bodies must be flat. Thus, an o-ring plate with o-rings must be used to seal the mounting surface. One plate with o-rings will be provided with any body that can be inverted. Below are the kit numbers;

Nitrile Kit - 717939 Fluorocarbon Kit - 717939V

Flipping Cartpaks: As mentioned before, many Cartpak bodies can be flipped to create extra options. The catalog pages show some of the functions that can be achieved by “flipping.” The words “upright” and “inverted” are written on the bodies to help you identify which side you are looking at. To invert the body, while facing the long face of the body (in other words, the sides without any ports or cavities), rotate the valve 180 degrees away from your body in an upward fashion. By doing this, you have essentially switched the P port and T port.

Stacking Cartpaks: Cartpak bodies can be stacked on top of one another to provide a number of functions in a single assembly. When stacking Cartpak bodies though, you want to take some care in the order in which the bodies are stacked. In general, flow controls should be stacked as close to the subplate stack as possible, while pilot operated check valves or counterbalance valves should be stacked as close to the D03 valve as possible.

The D03 line of bodies has a common height of 40mm (1.58 in.). Below is a list of bolt kits available from Parker.

UNC Bolt Kits for use with D1V Directional Control Valves & Manapaks/Cartpaks (D1V*-75 Design, Solenoid Operated)					
	Number of Manapaks/Cartpaks @ 1.58" (40mm) thickness				
	0	1	2	3	4
D1V-75	BK209 1.25"	BK243 2.88"	BK225 4.38"	BK244 6.00"	BK245 7.50"
D1V-75 Plus Tapping Plate	BK176 2.25"	BK56 3.81"	BK212 5.38"	BK107 7.00"	BK106 8.50"

Note: All bolts are SAE grade 8, 10-24 UNC-2A thread, torque to 5.6 N.m. (50 in.-lbs.)

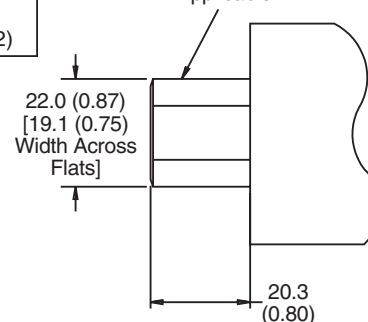
Bodies and Cavities

Gauge Ports: Several of the Cartpak bodies are equipped with a SAE #4 gauge port to assist the user during installation and troubleshooting. We offer hex adapter plugs, should your pressure gauge have a different thread type.

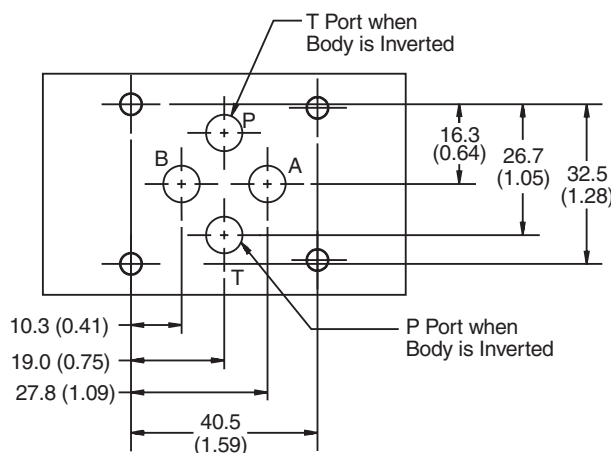
**Hex Adapter Plug
to convert from SAE #4**

1830016	BSPP
1830017	BSPT
1830018	NPTF
1830019	Metric (M12)

Hex Adapter Plug
for Converting from
#4-SAE to NPTF,
M12, BSPT or BSPP
Gage Ports, Where
Applicable



D03 Pad Dimensions: Below is the common dimensions of the standard D03 mount pad. Since these dimensions are common to all Cartpak bodies, we do not identify them on the individual valve pages.

**CV**Check
Valves**SH**Shuttle
Valves**LM**Load/Motor
Controls**FC**Flow
Controls**PC**Pressure
Controls**LE**Logic
Elements**DC**Directional
Controls**MV**Manual
Valves**SV**Solenoid
Valves**PV**Proportional
Valves**CE**Coils &
Electronics**BC**Bodies &
Cavities**TD**Technical
Data

CV

Check
Valves

SH

Shuttle
Valves

LM

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Coils &
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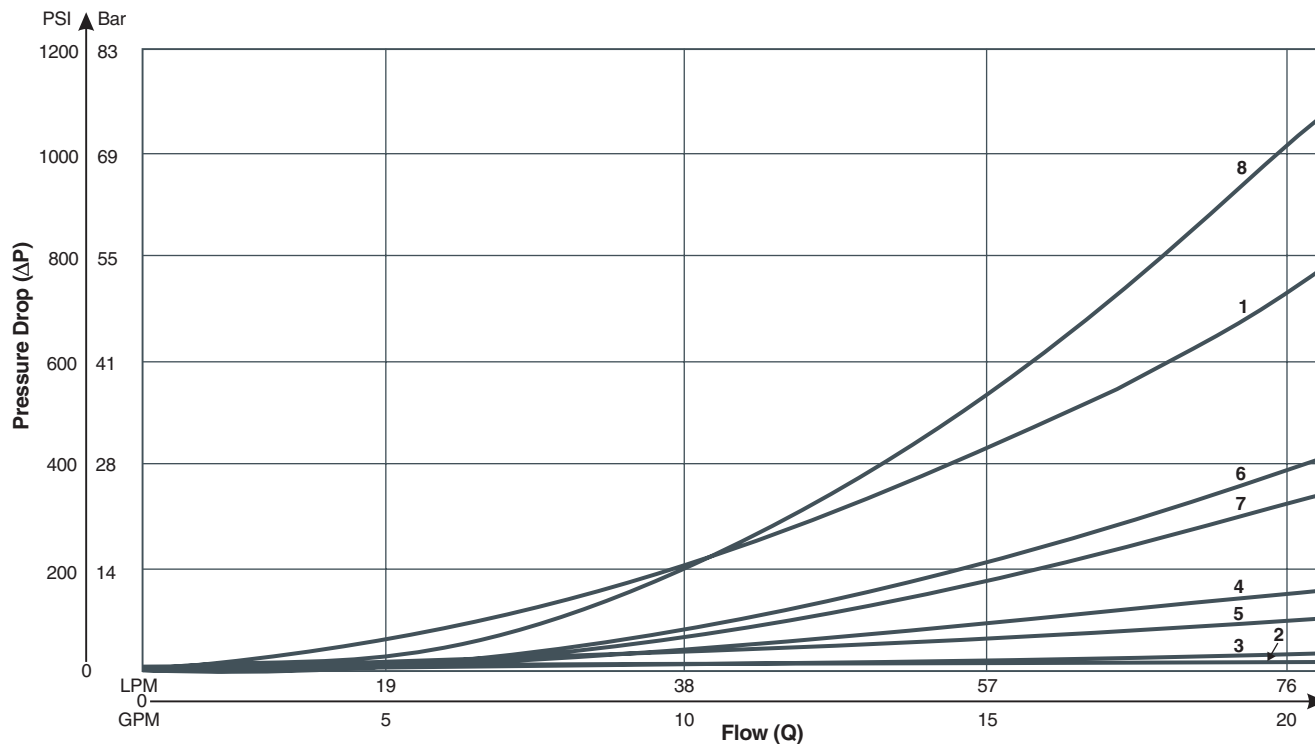
Bodies &
Cavities

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PRESSURE DROP CHART

The following charts outline the pressure drop through the Parker Cartpak bodies. The pressure drop is minus the cartridge valve.



Body	Orientation	P	T	A	B
BD03-PN	Upright	1	2	3	3
	Inverted	2	1	3	3
BD03-PT	Upright	3	3	3	3
	Inverted	3	3	3	3
BD03-ABN	Upright	3	3	4	4
	Inverted	3	3	4	4
BD03-ABT	Upright	3	3	3	3
	Inverted	3	3	3	3
BD03-ABX	Upright	5	5	3	3
BD03-PNR	Upright	6	3	3	3
BD03-PNS	Upright	7	3	3	3
BD03-DDX	Upright	3	3	1	1
BD03-BDA	Upright	6	3	3	3
BD03-ADB	Upright	6	3	3	3
BD03-PN2	Upright	8	3	3	3
	Inverted	3	8	3	3

Notes

Bodies and Cavities

This image shows a full page of blank graph paper. The background is a very light gray, and it is covered by a precise grid of thin, medium-gray horizontal and vertical lines. These lines intersect to form a series of small, identical squares across the entire surface of the page. There are no margins, text, or other markings present.**CV**

Check Valves

SH

Shuttle Valves

LM

Load/Mot Controls

FC

Flow Controls

PC

Pressure Controls

LE

Logic Elements

DC

Directional Controls

MV

Manual Valves

SV

Solenoid Valves

PV

Proportion Valves

CE

Coils & Electronic

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Bodies & Cavities

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Technical Data

Technical Information

04 Size, 2-Way

CV

Check
Valves

SH

Shuttle
Valves

LM

Load/Motor
Controls

FC

Flow
Controls

PC

Pressure
Controls

LE

Logic
Elements

DC

Directional
Controls

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Valves

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Valves

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Valves

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Coils &
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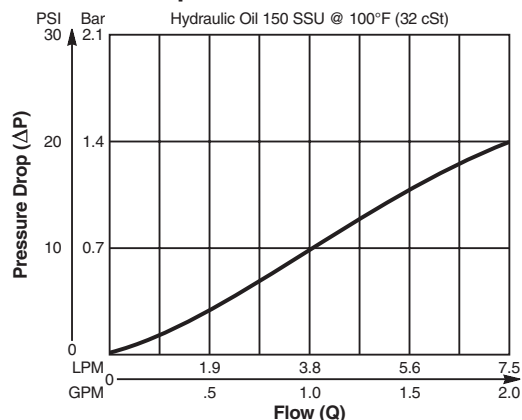
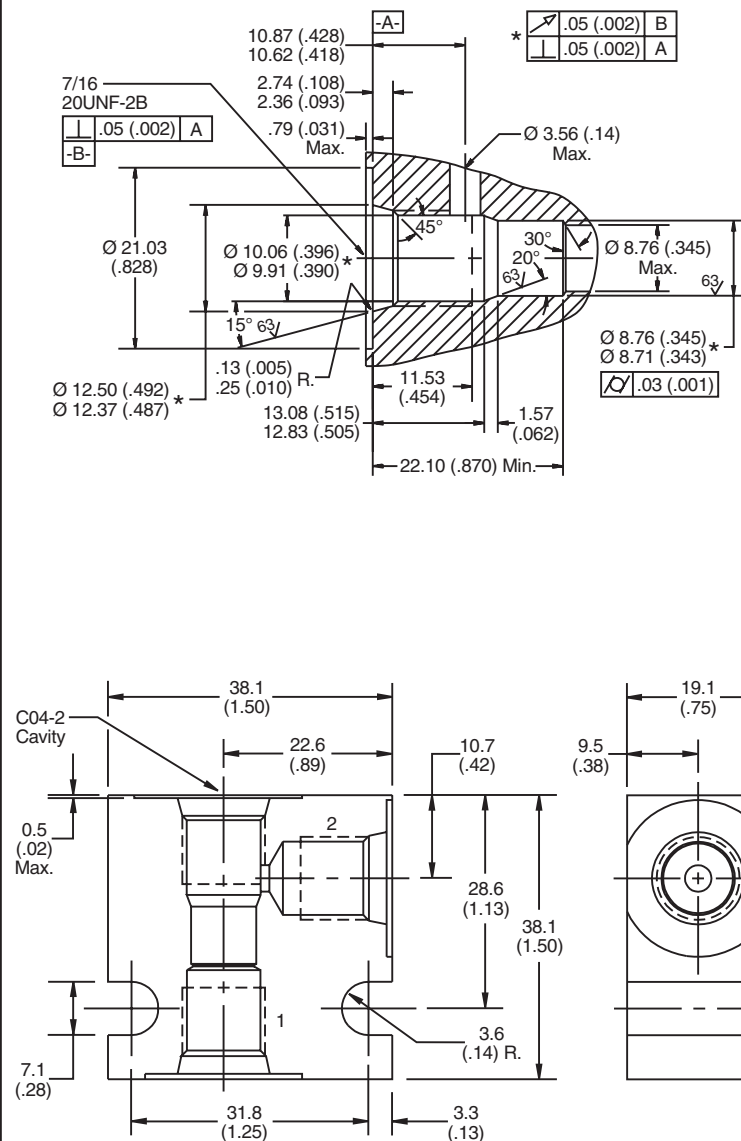
Valve/Cavity Compatibility

For additional information see Technical Tips on pages BC1-BC6.

		VALVE				
		Winner's Circle	Parker	Waterman	FPS	CEC
CAVITY	Winner's Circle	X	X	X		
	Parker	X	X	X		
	Waterman	X	X	X		
	FPS					
	CEC					

Performance Curve

Pressure Drop vs. Flow

Dimensions Millimeters (Inches)

Ordering Information

B04	—	2	—		—	
04 Size		2-Way Cavity		Body Material		Port Size

Code	Body Material
Omit	Steel
A	Aluminum

Code	Port Size
4T	SAE - 4

Form Tool: Rougher None
Finisher NFTA04-2F
Weight: .07 kg (.15 lbs.)

Technical Information

04 Size, 3-Way

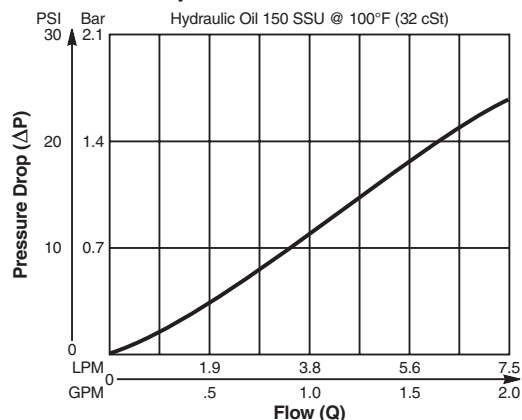
Valve/Cavity Compatibility

For additional information see Technical Tips on pages BC1-BC6.

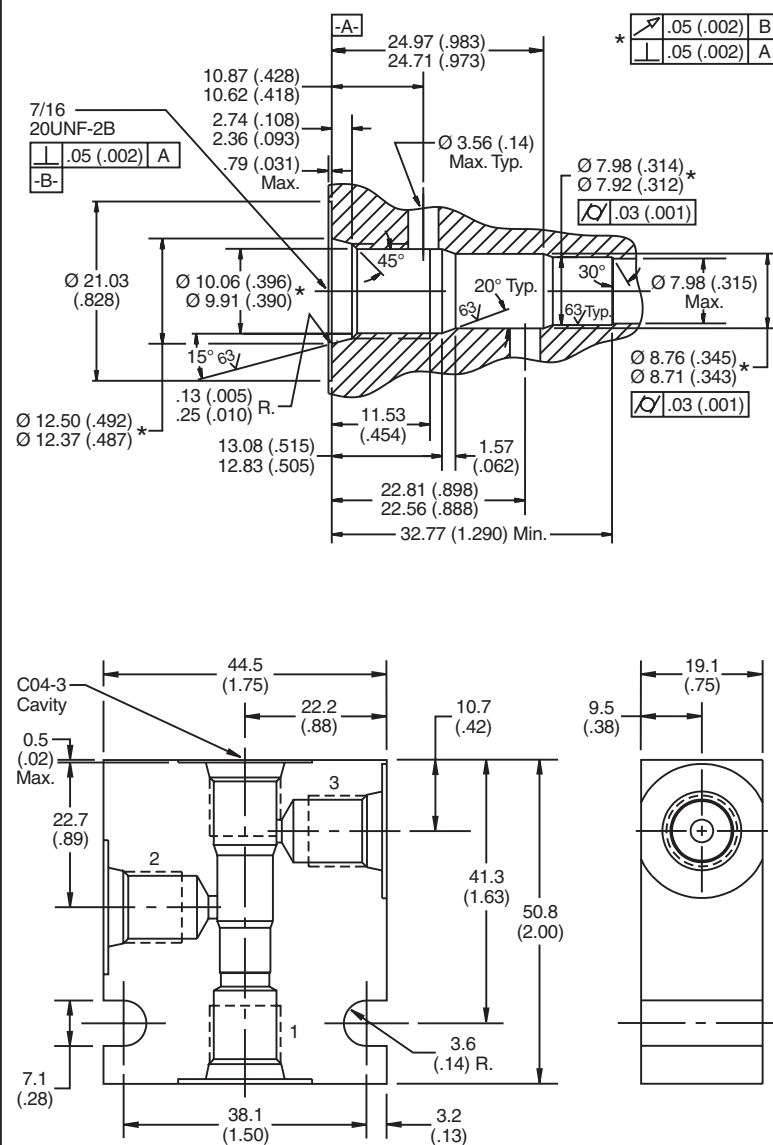
		VALVE				
		Winner's Circle	Parker	Waterman	FPS	CEC
CAVITY	Winner's Circle	X	X	X		
	Parker	X	X	X		
	Waterman	X	X	X		
	FPS					
	CEC					

Performance Curve

Pressure Drop vs. Flow



Dimensions Millimeters (Inches)



Ordering Information



Code	Port Size
A4T	SAE-4

A4T aluminum only.

Form Tool: Rougher NFT04-3R

Finisher NFT04-3F

Weight: .10 kg (.23 lbs.)

Technical Information

08 Size, 2-Way

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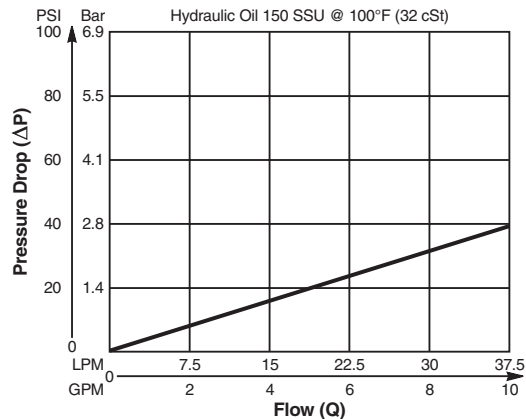
Valve/Cavity Compatibility

For additional information see Technical Tips on pages BC1-BC6.

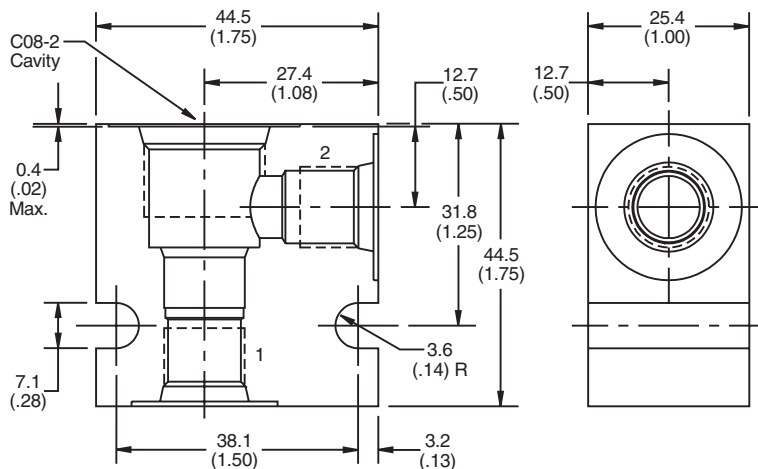
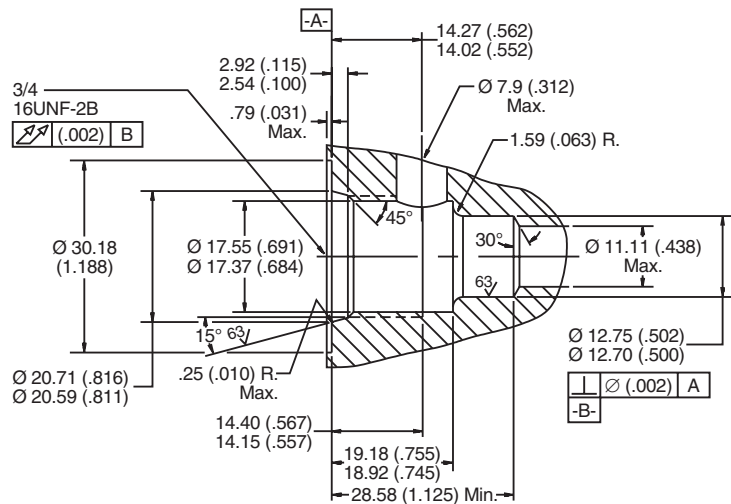
		VALVE				
		Winner's Circle	Parker	Waterman	FPS	CEC
CAVITY	Winner's Circle	X	X	X	X	X
	Parker	X	X	X	X	X
	Waterman	X	X	X	X	X
	FPS	X	X	X	X	X
	CEC	X	X	X	X	X

Performance Curve

Pressure Drop vs. Flow



Dimensions Millimeters (Inches)



Ordering Information

The diagram illustrates the naming convention for a connector. It consists of four boxes connected by horizontal lines. The first box contains 'B08' with '08 Size' below it. The second box contains '2' with '2-Way Cavity' below it. The third box is empty with 'Body Material' below it. The fourth box is empty with 'Port Size' below it.

Code	Body Material
Omit	Steel
A	Aluminum

Code	Port Size
4P	1/4" NPTF
6P	3/8" NPTF
4T	SAE - 4
6T	SAE - 6
6B	3/8" BSPG

Form Tool: Rougher None
Finisher NFT08-2F
Weight: .11 kg (.25 lbs.)

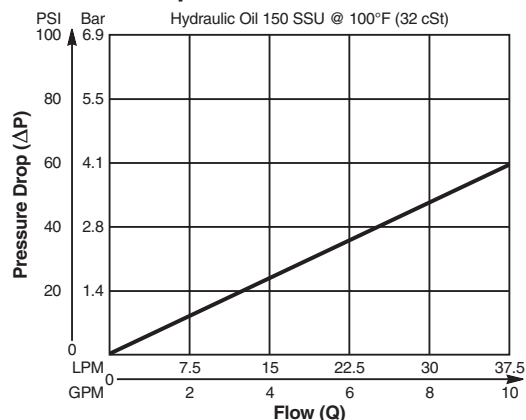
Valve/Cavity Compatibility

For additional information see Technical Tips on pages BC1-BC6.

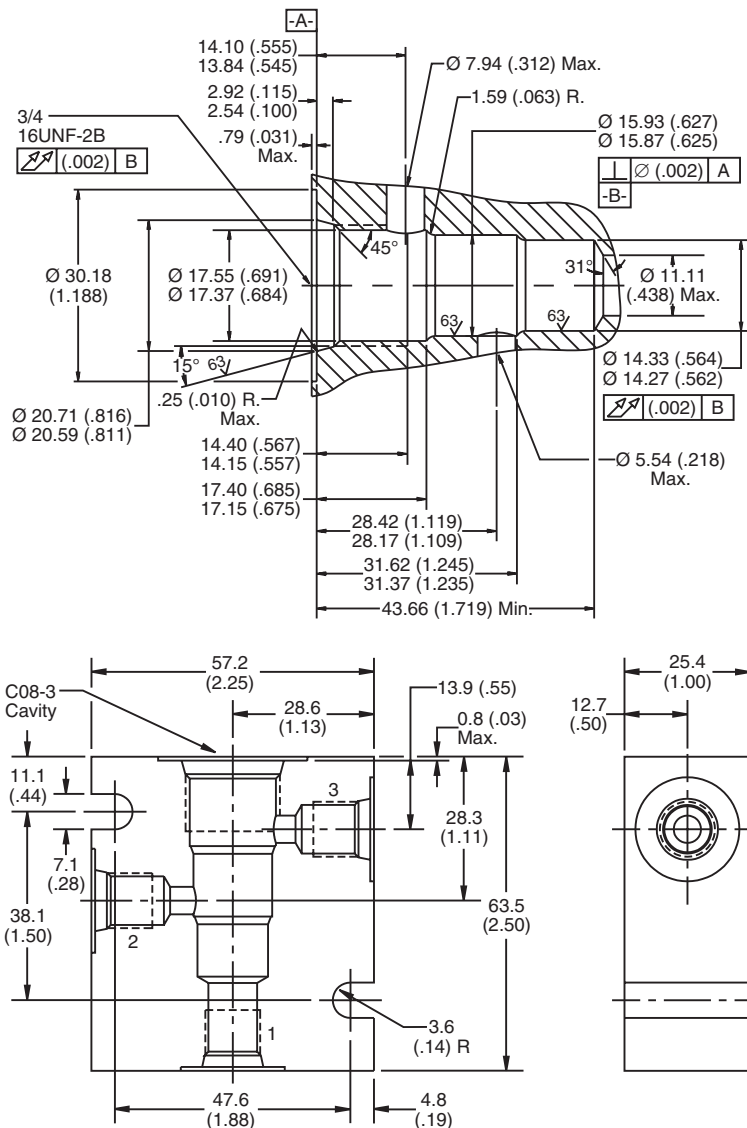
		VALVE				
		Winner's Circle	Parker	Waterman	FPS	CEC
CAVITY	Winner's Circle	X	X	X		
	Parker	X	X	X		
	Waterman	X	X	X		
	FPS				X	X
	CEC				X	X

Performance Curve

Pressure Drop vs. Flow



Dimensions



Ordering Information

B08	—	3	—		—	
08 Size		3-Way Cavity		Body Material		Port Size

Code	Body Material
Omit	Steel
A	Aluminum

Code	Port Size
4P	1/4" NPTF
4T	SAE - 4
6T	SAE - 6
6B	3/8" BSPG

Form Tool: Rougher NFT08-3R

Finisher NFT08-3F

Weight: .27 kg (.60 lbs.)

CV

Check
Valves

SH

Shuttle
Valves

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Load/Motor
Controls

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Flow
Controls

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Pressure
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Logic
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Technical
Data

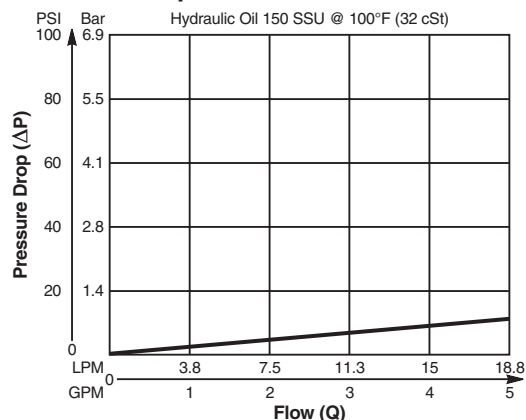
Valve/Cavity Compatibility

For additional information see Technical Tips on pages BC1-BC6.

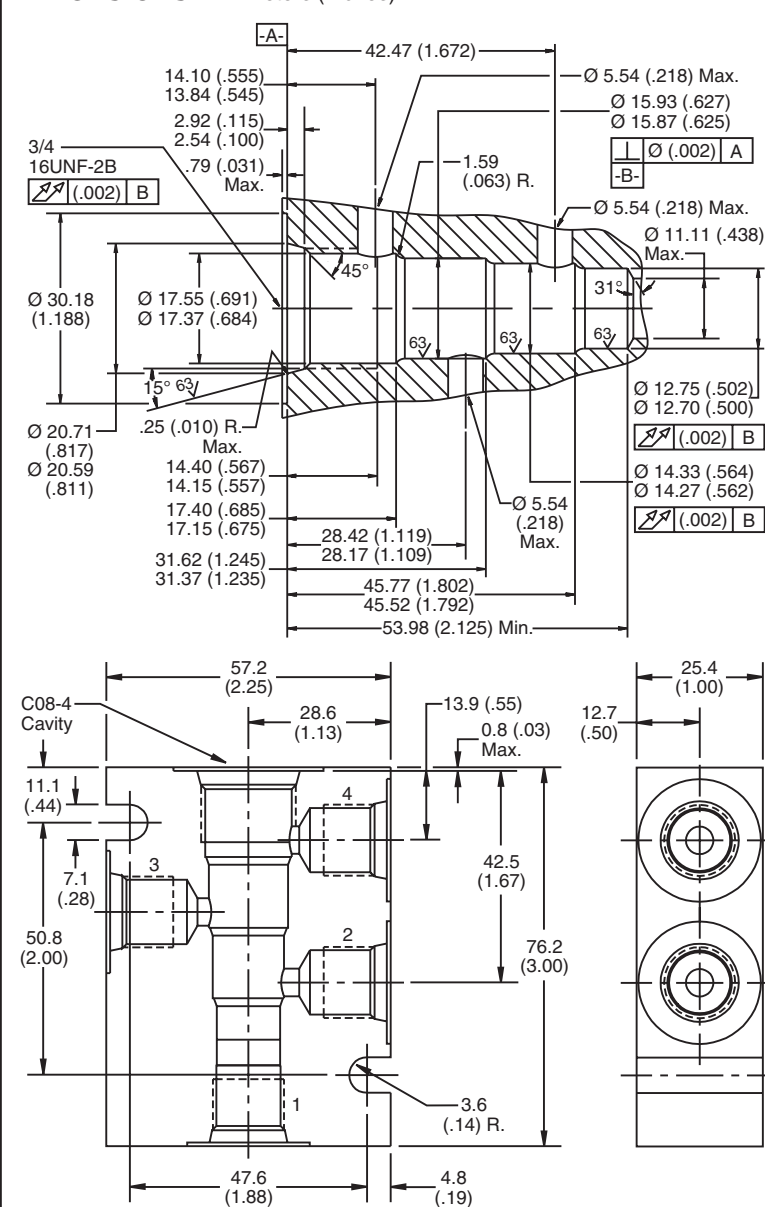
		VALVE				
		Winner's Circle	Parker	Waterman	FPS	CEC
CAVITY	Winner's Circle	X	X	X		
	Parker	X	X	X		
	Waterman	X	X	X		
	FPS				X	
	CEC					

Performance Curve

Pressure Drop vs. Flow



Dimensions



Ordering Information

B08	—	4	—		—	
08 Size		4-Way Cavity		Body Material		Port Size

Code	Body Material
Omit	Steel
A	Aluminum

Code	Port Size
4T	SAE - 4
6T	SAE - 6
6B	3/8" BSPG

Form Tool: Rougher NFT08-4R

Finisher NFT08-4F

Weight: .45 kg (1.0 lbs.)

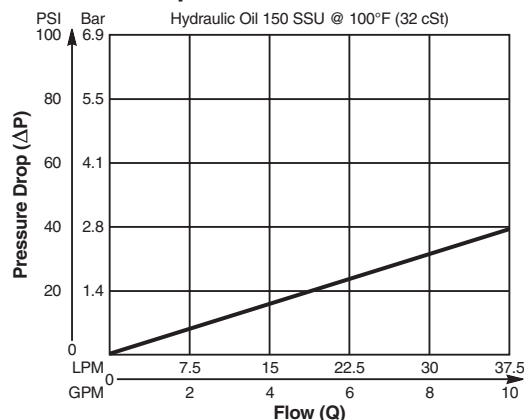
Valve/Cavity Compatibility

For additional information see Technical Tips on pages BC1-BC6.

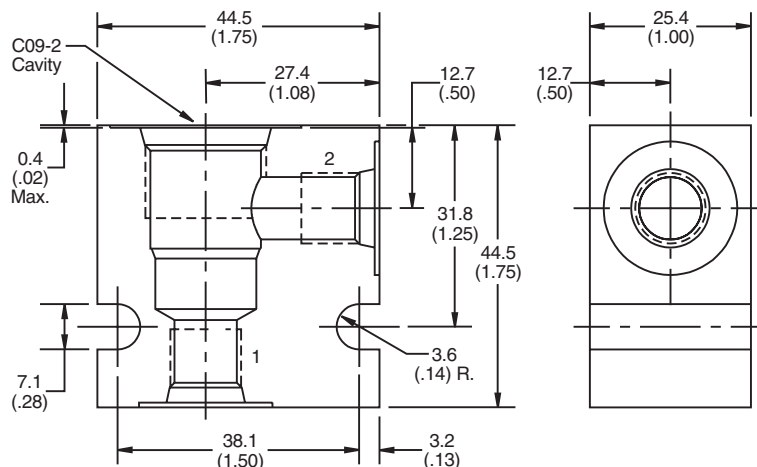
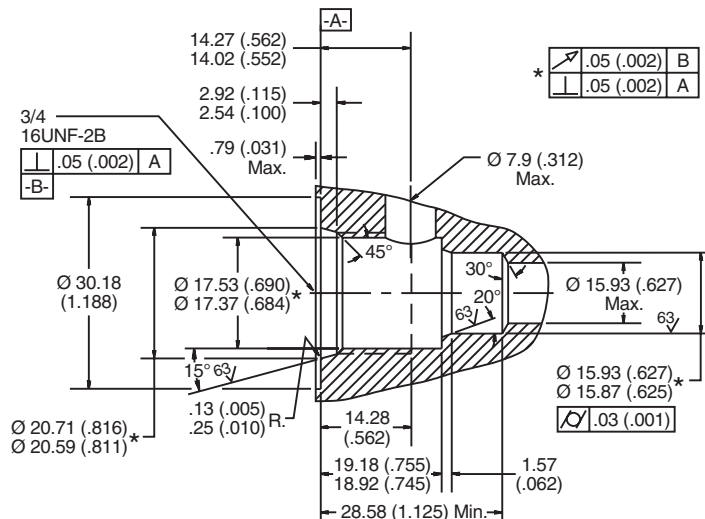
		VALVE				
		Winner's Circle	Parker	Waterman	FPS	CEC
CAVITY	Winner's Circle					
	Parker		X	X		
	Waterman		X	X		
	FPS					
	CEC					

Performance Curve

Pressure Drop vs. Flow



Dimensions



Ordering Information

B09	—	2	—		—	
09 Size		2-Way Cavity		Body Material		Port Size

Code	Body Material
Omit	Steel
A	Aluminum

Code	Port Size
6T	SAE - 6
6B†	3/8" BSPG

† Steel body only.

Form Tool: Rougher None
Finisher FT09-2
Weight: 11 kg (.25 lbs.)

CV

Check Valves

SH

Shuttle Valves

LM

Load/Motor Controls

FC

Flow Controls

PC

Pressure Controls

LE

Logic Elements

DC

Directional Controls

MV

Manual Valves

SV

Solenoid Valves

PV

Proportional Valves

CE

Coils & Electronics

BC

Bodies & Cavities

TD

Technical Data

Technical Information

10 Size, 2-Way

CV

Check
Valves

SH

Shuttle
Valves

LM

Load/Motor
Controls

FC

Flow
Controls

PC

Pressure
Controls

LE

Logic
Elements

DC

Directional
Controls

MV

Manual
Valves

SV

Solenoid
Valves

PV

Proportional
Valves

CE

Coils &
Electronics

BC

Bodies &
Cavities

TD

Technical
Data

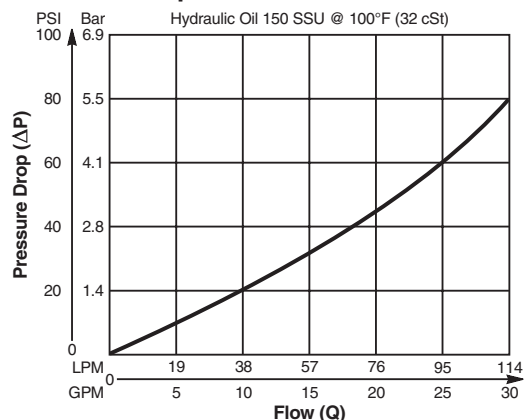
Valve/Cavity Compatibility

For additional information see Technical Tips on pages BC1-BC6.

		VALVE				
		Winner's Circle	Parker	Waterman	FPS	CEC
CAVITY	Winner's Circle	X	X	X	X	X
	Parker	X	X	X		
	Waterman	X	X	X		
	FPS	X			X	X
	CEC	X			X	X

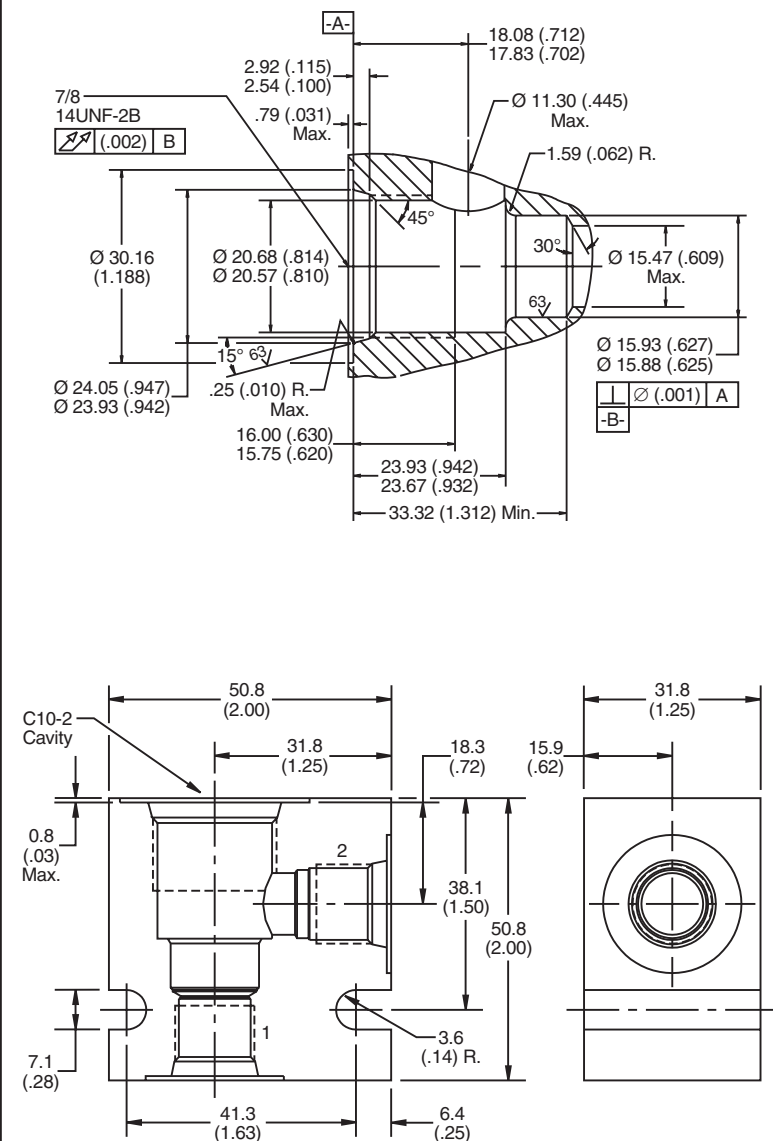
Performance Curve

Pressure Drop vs. Flow



Dimensions

Millimeters (Inches)



Ordering Information

B10	—	2	—		—	
10 Size		2-Way Cavity		Body Material		Port Size

Code	Body Material
Omit	Steel
A	Aluminum

Code	Port Size
4P	1/4" NPTF
6P	3/8" NPTF
8P	1/2" NPTF
6T	SAE - 6
8T	SAE - 8
6BT	3/8" BSPG

† Steel body only.

Form Tool: Rougher None
Finisher NFT10-2F
Weight: .45 kg (1.0 lbs.)

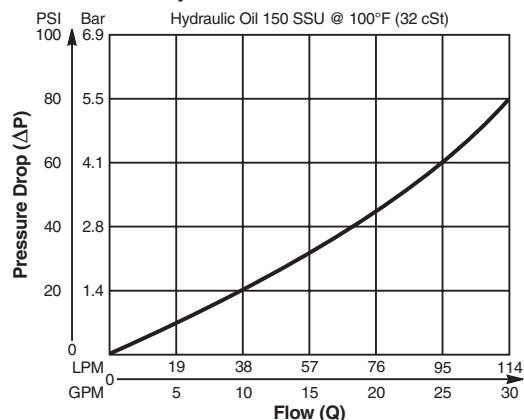
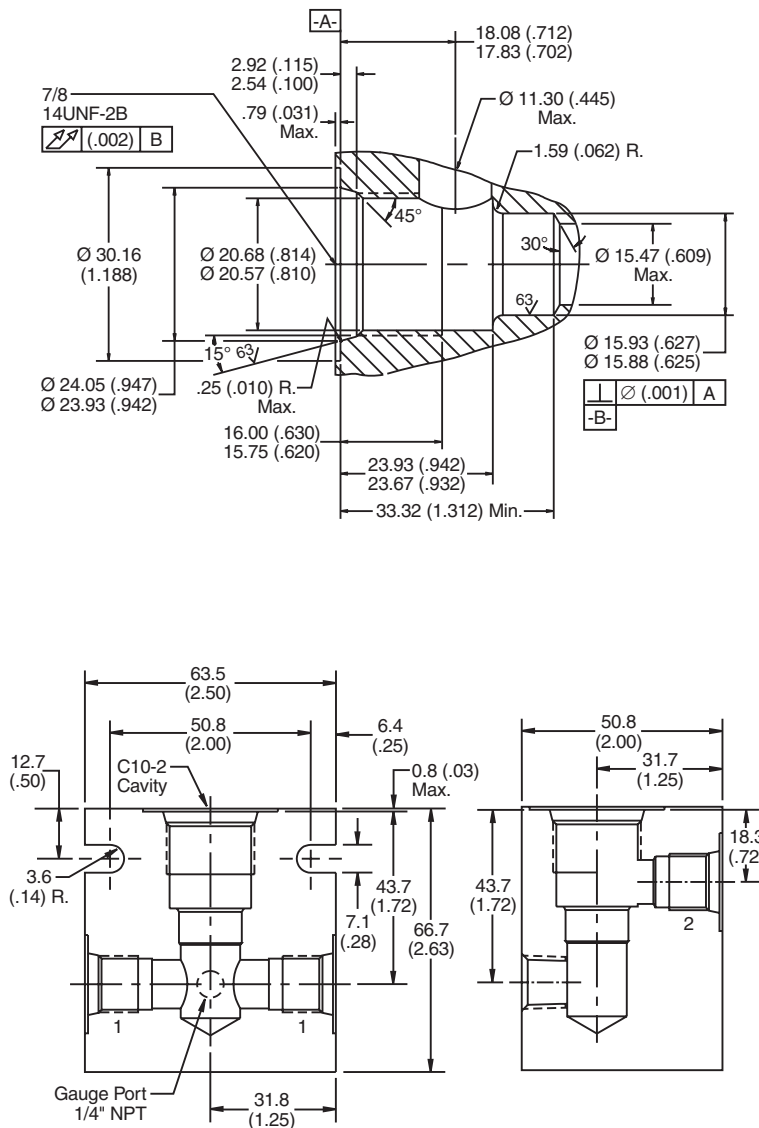
Valve/Cavity Compatibility

For additional information see Technical Tips on pages BC1-BC6.

		VALVE				
		Winner's Circle	Parker	Waterman	FPS	CEC
CAVITY	Winner's Circle	X	X	X	X	X
	Parker	X	X	X		
	Waterman	X	X	X		
	FPS	X			X	X
	CEC	X			X	X

Performance Curve

Pressure Drop vs. Flow

Dimensions Millimeters (Inches)

Ordering Information

B10	—	2T	—		—	
10 Size		2-Way Cavity		Body Material		Port Size

Code	Body Material
Omit	Steel

Code	Port Size
T6T	SAE - 6
T8T	SAE - 8

Form Tool: Rougher None
Finisher NFT10-2F
Weight: 1.4 kg (3.0 lbs.)

CV

Check
Valves

SH

Shuttle
Valves

LM

Load/Motor
Controls

FC

Flow
Controls

PC

Pressure
Controls

LE

Logic
Elements

DC

Directional
Controls

MV

Manual
Valves

SV

Solenoid
Valves

PV

Proportional
Valves

CE

Coils &
Electronics

BC

Bodies &
Cavities

TD

Technical
Data

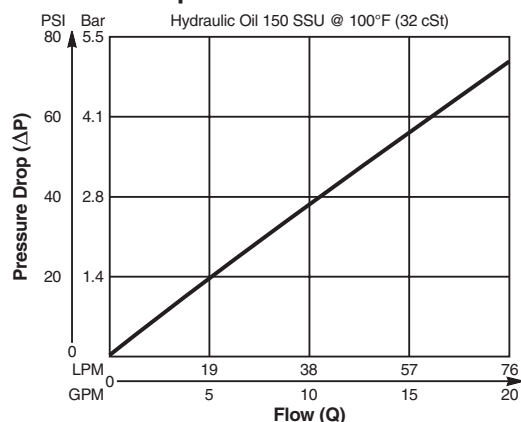
Valve/Cavity Compatibility

For additional information see Technical Tips on pages BC1-BC6.

		VALVE				
		Winner's Circle	Parker	Waterman	FPS	CEC
CAVITY	Winner's Circle	X	X	X	X	X
	Parker	X	X	X	X	X
	Waterman	X	X	X	X	X
	FPS	X	X	X	X	X
	CEC	X	X	X	X	X

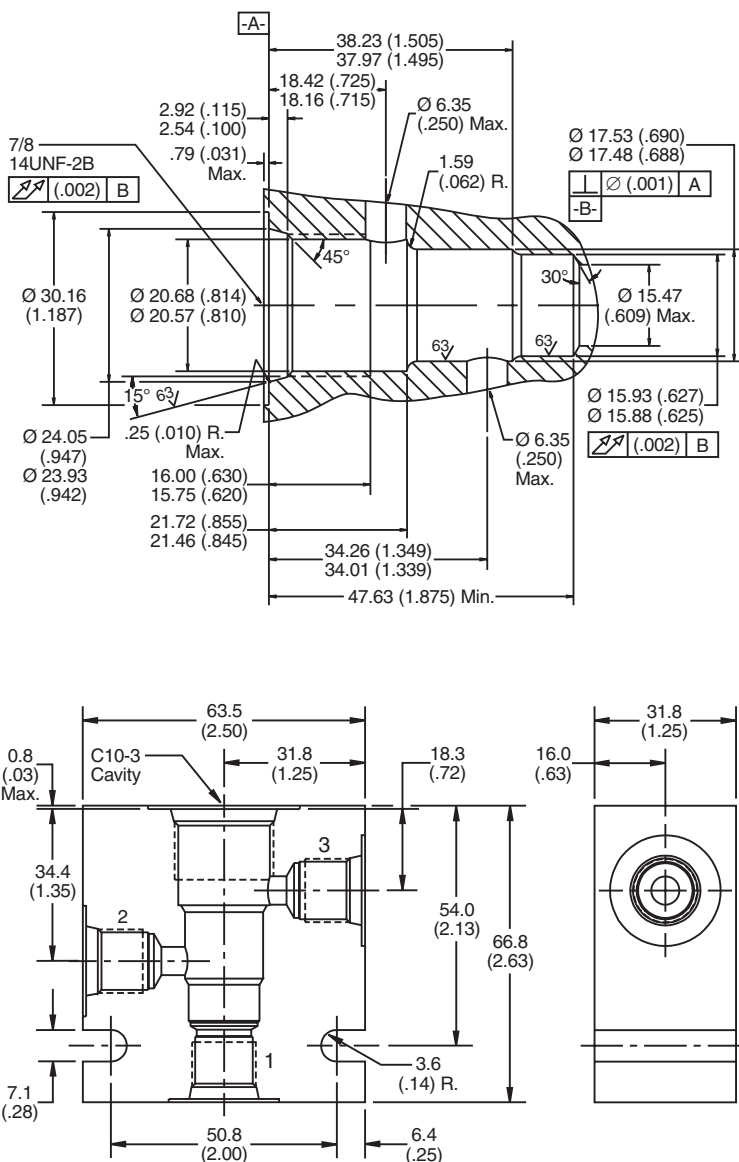
Performance Curve

Pressure Drop vs. Flow



Dimensions

Millimeters (Inches)



Ordering Information

B10	—	3	—		—	
10 Size		3-Way Cavity		Body Material		Port Size

Code	Body Material
Omit	Steel
A	Aluminum

Code	Port Size
4P	1/4" NPTF
6P	3/8" NPTF
8P	1/2" NPTF
6T	SAE - 6
8T	SAE - 8
6B†	3/8" BSPG
8B	1/2" BSPG

† Steel body only.

Form Tool: Rougher NFT10-3R
Finisher NFT10-3F
Weight: .77 kg (1.7 lbs.)

CV

Check
Valves

SH

Shuttle
Valves

LM

Load/Motor
Controls

FC

Flow
Controls

PC

Pressure
Controls

LE

Logic
Elements

DC

Directional
Controls

MV

Manual
Valves

SV

Solenoid
Valves

PV

Proportional
Valves

CE

Coils &
Electronics

BC

Bodies &
Cavities

TD

Technical
Data

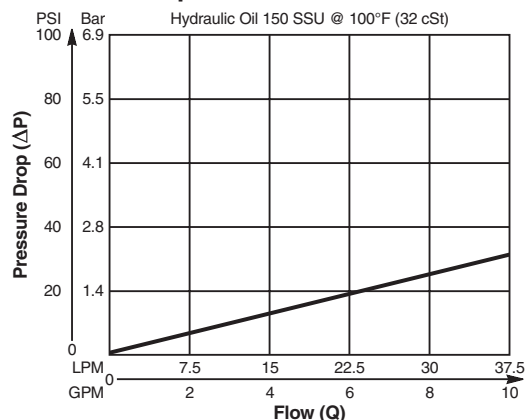
Valve/Cavity Compatibility

For additional information see Technical Tips on pages BC1-BC6.

		VALVE				
		Winner's Circle	Parker	Waterman	FPS	CEC
CAVITY	Winner's Circle	X	X	X	X	X
	Parker	X	X	X	X	X
	Waterman	X	X	X	X	X
	FPS	X	X	X	X	X
	CEC	X	X	X	X	X

Performance Curve

Pressure Drop vs. Flow

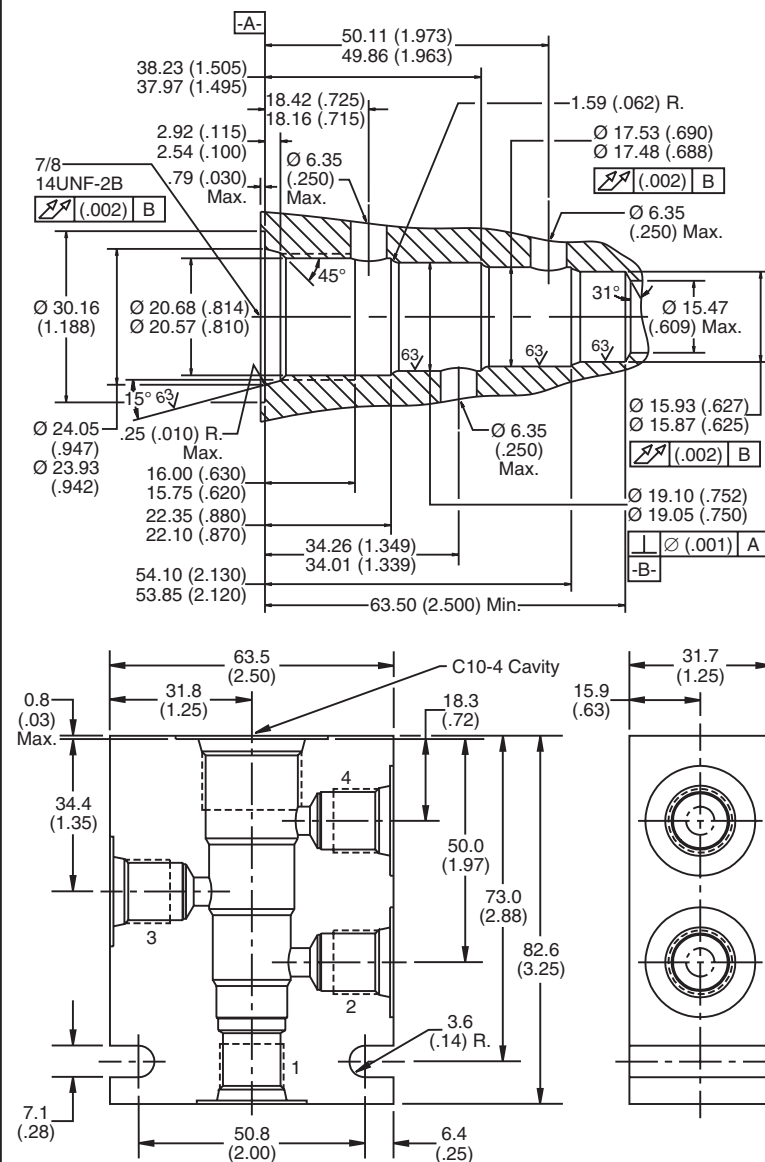


NOTE:

When machining for use with DF102P, Ports 1 and 4 must be connected in the manifold/block.

Dimensions

Millimeters (Inches)



Ordering Information

B10	—	4	—		—	
10 Size		4-Way Cavity		Body Material		Port Size

Code	Body Material
Omit	Steel
A	Aluminum

Code	Port Size
6P	3/8" NPTF
6T	SAE - 6
8T	SAE - 8
6BT	3/8" BSPG

† Steel body only.

Form Tool: Rougher NFT10-4R

Finisher NFT10-4F

Weight: .90 kg (2.0 lbs.)

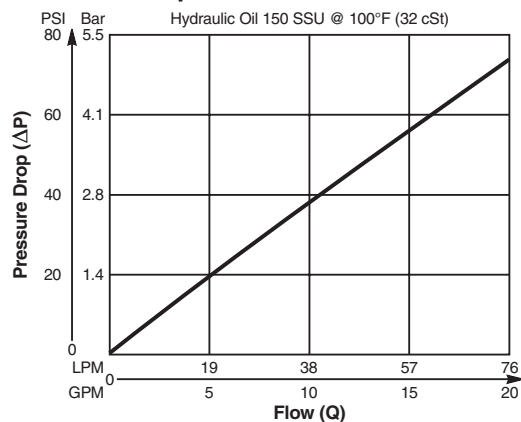
Valve/Cavity Compatibility

For additional information see Technical Tips on pages BC1-BC6.

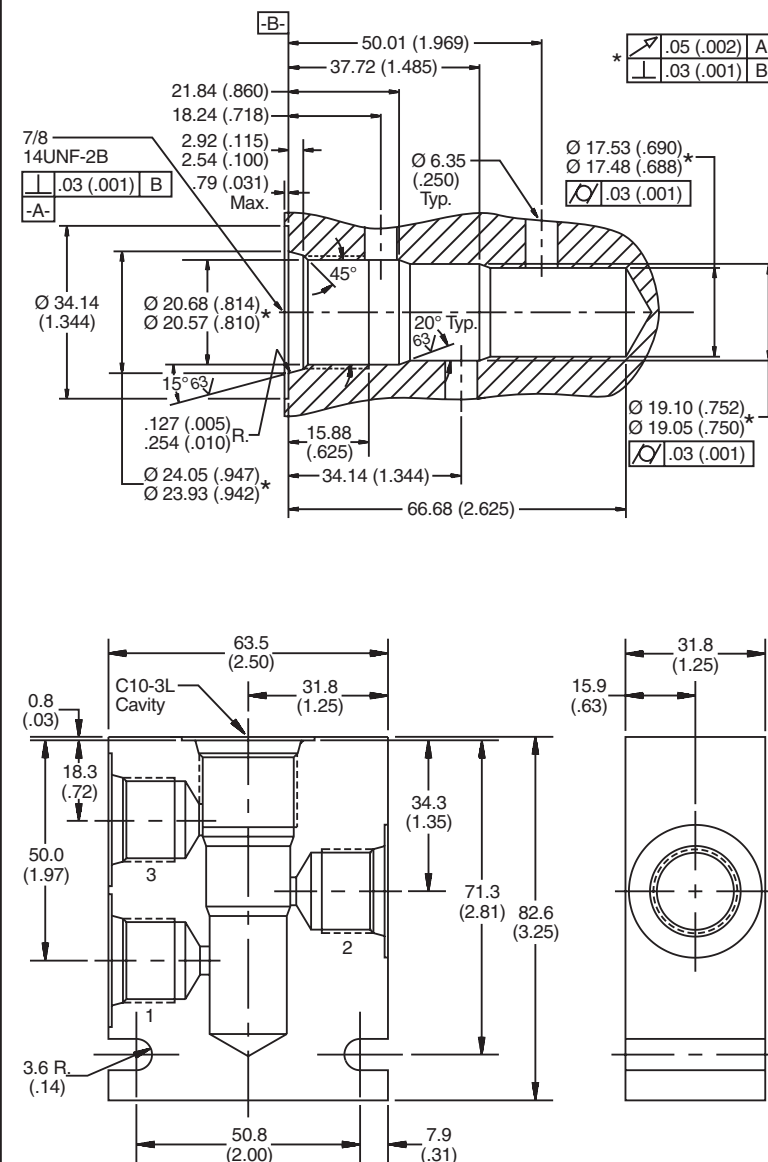
		VALVE				
		Winner's Circle	Parker	Waterman	FPS	CEC
CAVITY	Winner's Circle					
	Parker		X	X	X	
	Waterman		X	X	X	
	FPS		X	X	X	
	CEC					

Performance Curve

Pressure Drop vs. Flow



Dimensions Millimeters (Inches)



Ordering Information

Part Number = 4082075

Technical Information

12 Size, 2-Way

CV

Check
Valves

SH

Shuttle
Valves

LM

Load/Motor
Controls

FC

Flow
Controls

PC

Pressure
Controls

LE

Logic
Elements

DC

Directional
Controls

MV

Manual
Valves

SV

Solenoid
Valves

PV

Proportional
Valves

CE

Coils &
Electronics

BC

Bodies &
Cavities

TD

Technical
Data

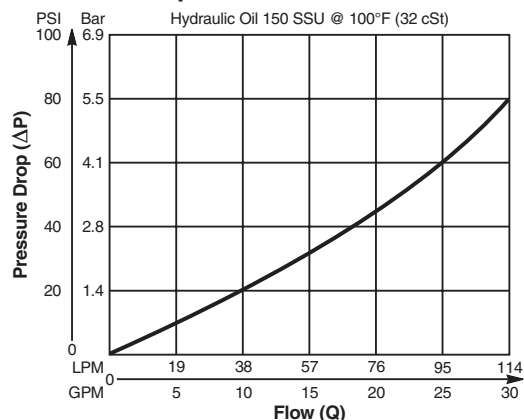
Valve/Cavity Compatibility

For additional information see Technical Tips on pages BC1-BC6.

		VALVE				
		Winner's Circle	Parker	Waterman	FPS	CEC
CAVITY	Winner's Circle	X	X	X		
	Parker	X	X	X		
	Waterman	X	X	X		
	FPS					
	CEC					X

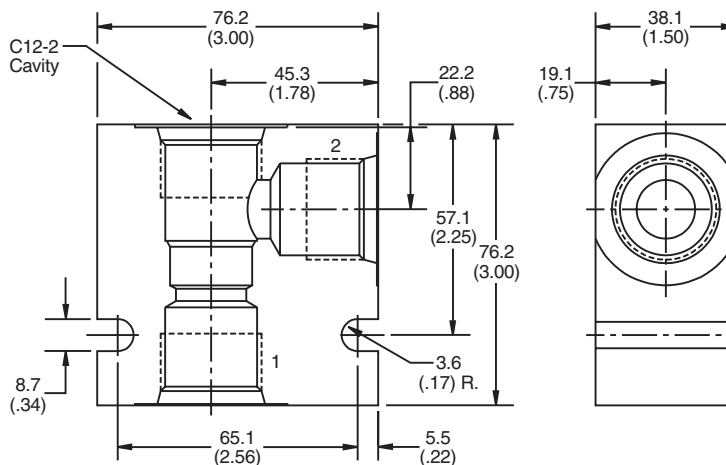
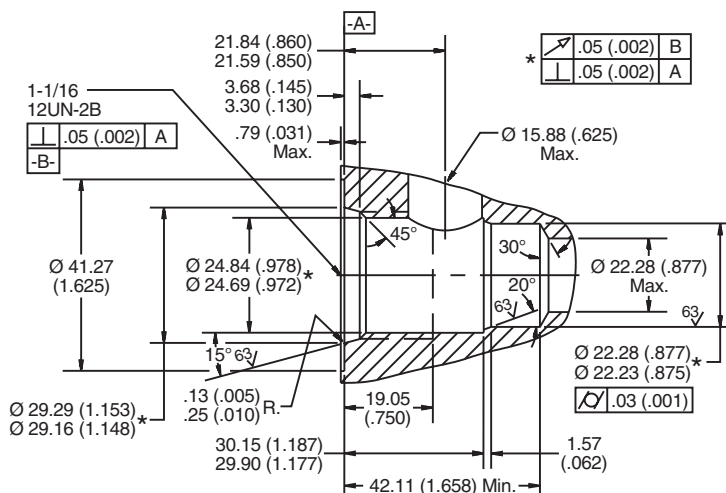
Performance Curve

Pressure Drop vs. Flow



Dimensions

Millimeters (Inches)



Ordering Information

B12	—	2	—		—	
12 Size		2-Way Cavity		Body Material		Port Size

Code	Body Material
Omit	Steel
A	Aluminum

Code	Port Size
12P	3/4" NPTF
8T	SAE - 8
12T	SAE - 12

Form Tool: Rougher None
Finisher NFT12-2F
Weight: .45 kg (1.0 lbs.)

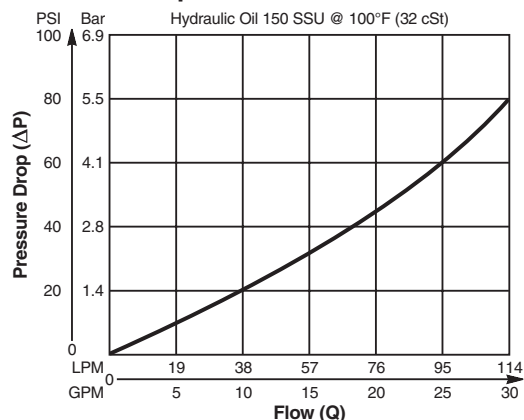
Valve/Cavity Compatibility

For additional information see Technical Tips on pages BC1-BC6.

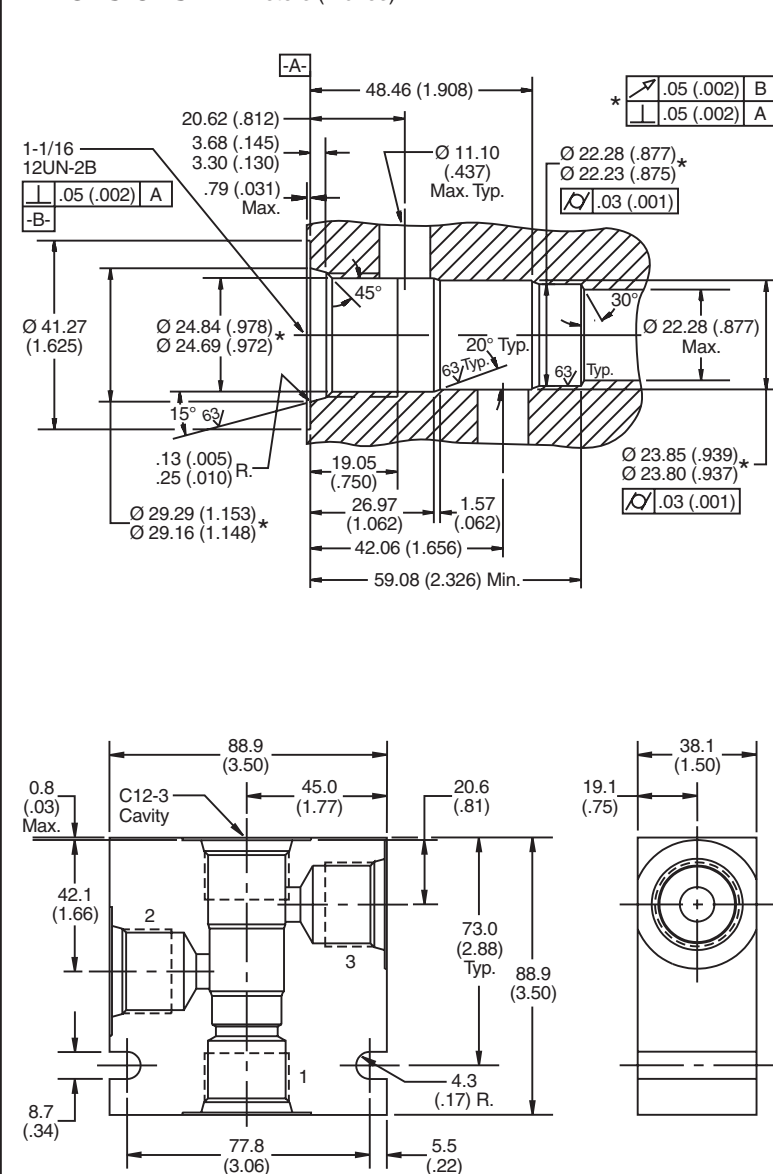
		VALVE				
		Winner's Circle	Parker	Waterman	FPS	CEC
CAVITY	Winner's Circle	X	X	X		
	Parker	X	X	X		
	Waterman	X	X	X		
	FPS					
	CEC					X

Performance Curve

Pressure Drop vs. Flow



Dimensions



Ordering Information

B12	—	3	—		—	
12 Size		3-Way Cavity		Body Material		Port Size

Code	Body Material
Omit	Steel
A	Aluminum

Code	Port Size
8T	SAE - 8
12T	SAE - 12
8B†	1/2" BSPG

† Steel body only.

Form Tool: Rougher NFT12-3R

Finisher NFT12-3F

Weight: 2.0 kg (4.5 lbs.)

CV

Check
Valves

SH

Shuttle
Valves

LM

Load/Motor
Controls

FC

Flow
Controls

PC

Pressure
Controls

LE

Logic
Elements

DC

Directional
Controls

MV

Manual
Valves

SV

Solenoid
Valves

PV

Proportional
Valves

CE

Coils &
Electronics

BC

Bodies &
Cavities

TD

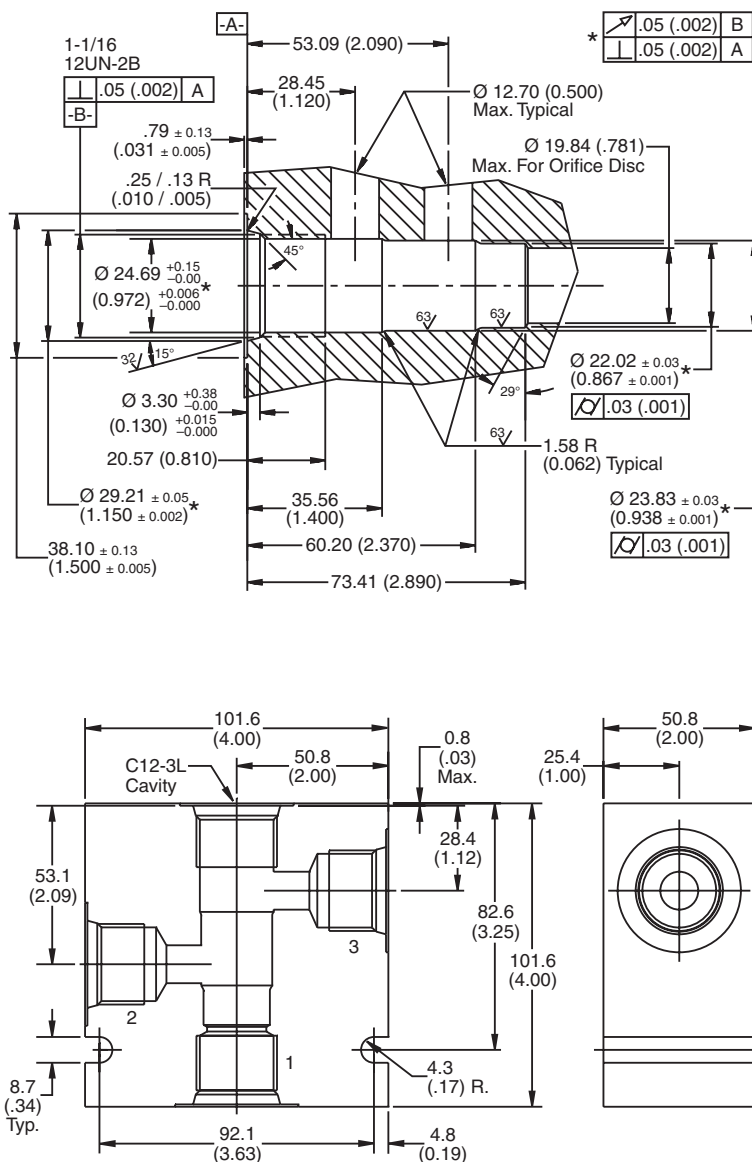
Technical
Data

Valve/Cavity Compatibility

For additional information see Technical Tips on pages BC1-BC6.

Performance Curve Pressure Drop vs. Flow

Dimensions



Ordering Information

B12	—	3L	—		—	
12 Size		3-Way Long Cavity		Body Material		Port Size

Code	Body Material
Omit	Steel
A	Aluminum

Code	Port Size
12T	SAE - 12

Form Tool: Rougher NFT12L-3R
Finisher NFT12L-3F

Weight:

Technical Information

12 Size, 4-Way

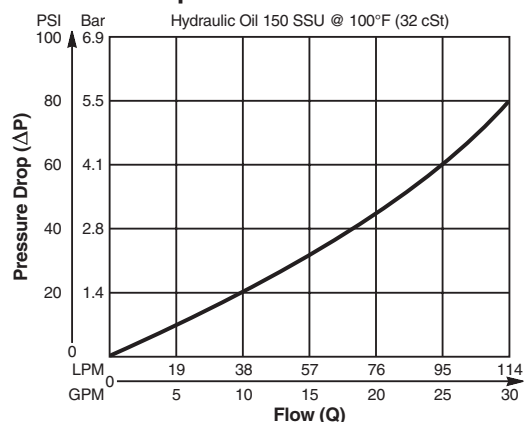
Valve/Cavity Compatibility

For additional information see Technical Tips on pages BC1-BC6.

		VALVE				
		Winner's Circle	Parker	Waterman	FPS	CEC
CAVITY	Winner's Circle	X	X	X		
	Parker	X	X	X		
	Waterman	X	X	X		
	FPS					
	CEC					X

Performance Curve

Pressure Drop vs. Flow



Ordering Information

B12 — **4** — —
 12 Size 4-Way Cavity Body Material Port Size

Code	Body Material
Omit	Steel
A	Aluminum

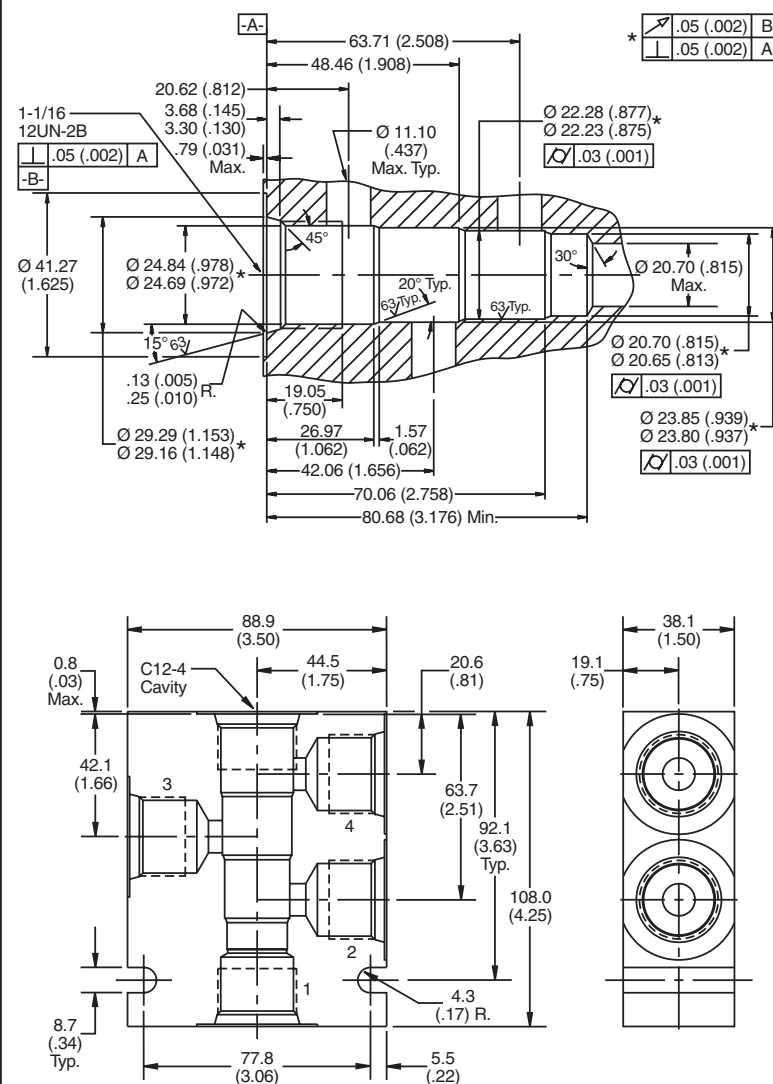
Code	Port Size
12T	SAE - 12

Form Tool: Rougher NFT12-4R

Finisher NFTA12-4F

Weight: 3.3 kg (7.3 lbs.)

Dimensions Millimeters (Inches)

**CV**

Check Valves

SH

Shuttle Valves

LM

Load/Management Controls

FC

Flow Controls

PC

Pressure Controls

LE
S

**Logic
Element**

DC

Direct
Control

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TD

Technical data

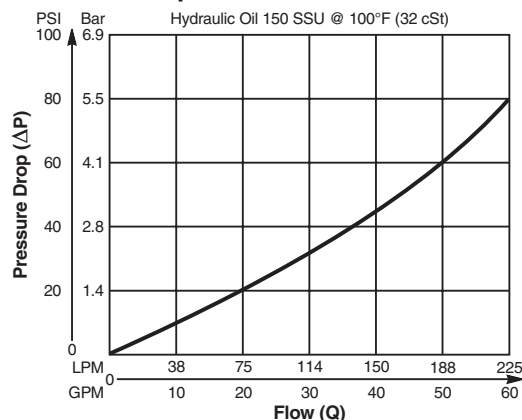
Valve/Cavity Compatibility

For additional information see Technical Tips on pages BC1-BC6.

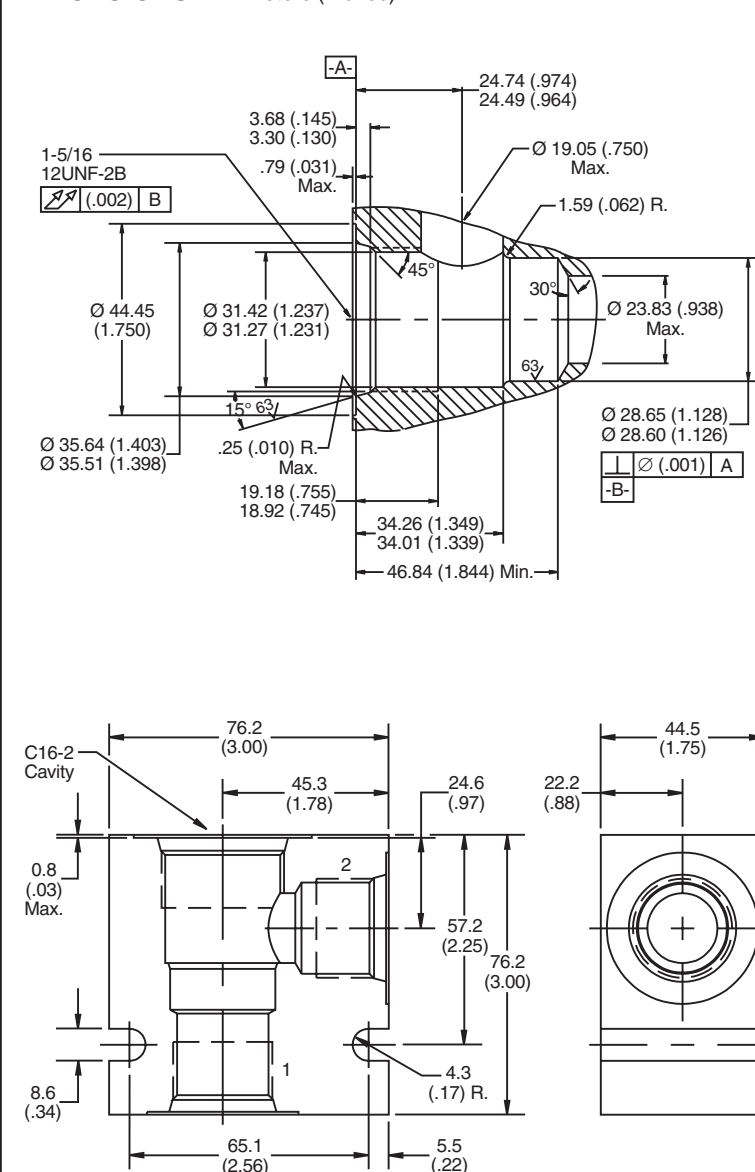
		VALVE				
		Winner's Circle	Parker	Waterman	FPS	CEC
CAVITY	Winner's Circle	X	X	X	X	X
	Parker	X	X	X		
	Waterman	X	X	X		
	FPS	X			X	X
	CEC	X			X	X

Performance Curve

Pressure Drop vs. Flow



Dimensions



Ordering Information

B16	—	2	—		—	
16 Size		2-Way Cavity		Body Material		Port Size

Code	Body Material
Omit	Steel
A	Aluminum

Code	Port Size
12P	3/4" NPTF
16P	1" NPTF
8T	SAE - 8
12T	SAE - 12
16T	SAE - 16
12B†	3/4" BSPG
16B	1" BSPG

† Steel body only.

Form Tool: Rougher None
Finisher NTF16-2F
Weight: 1.5 kg (3.4 lbs.)

Technical Information

16 Size, 3-Way

CV

Check
Valves

SH

Shuttle
Valves

LM

Load/Motor
Controls

FC

Flow
Controls

PC

Pressure
Controls

LE

Logic
Elements

DC

Directional
Controls

MV

Manual
Valves

SV

Solenoid
Valves

PV

Proportional
Valves

CE

Coils &
Electronics

BC

Bodies &
Cavities

TD

Technical
Data

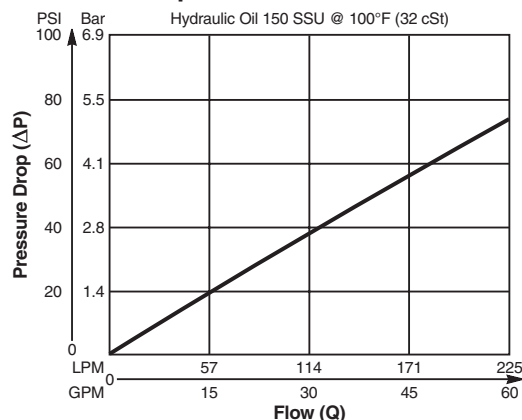
Valve/Cavity Compatibility

For additional information see Technical Tips on pages BC1-BC6.

		VALVE				
		Winner's Circle	Parker	Waterman	FPS	CEC
CAVITY	Winner's Circle	X	X	X	X	X
	Parker	X	X	X		
	Waterman	X	X	X		
	FPS	X			X	X
	CEC	X			X	X

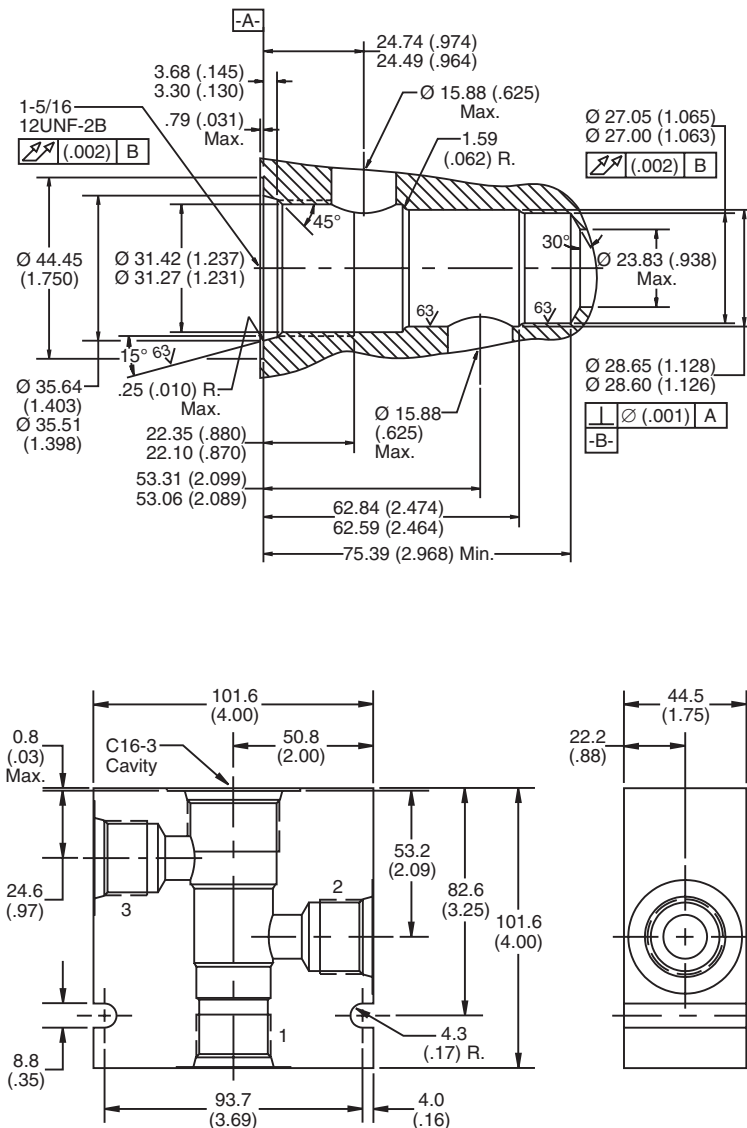
Performance Curve

Pressure Drop vs. Flow



Dimensions

Millimeters (Inches)



Ordering Information

B16	—	3	—		—	
16 Size		3-Way Cavity		Body Material		Port Size

Code	Body Material
Omit	Steel
A	Aluminum

Code	Port Size
12T	SAE - 12
16T	SAE - 16

Form Tool: Rougher NFT16-3R

Finisher NFT16-3F

Weight: 3.0 kg (6.5 lbs.)

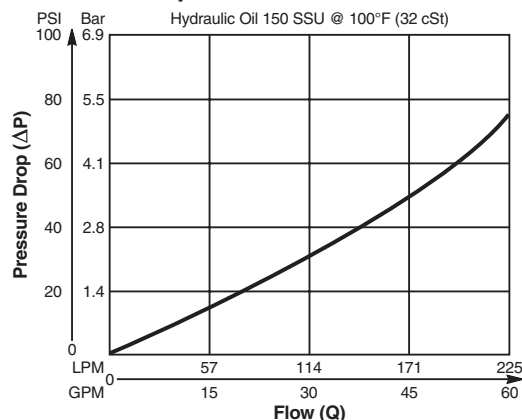
Valve/Cavity Compatibility

For additional information see Technical Tips on pages BC1-BC6.

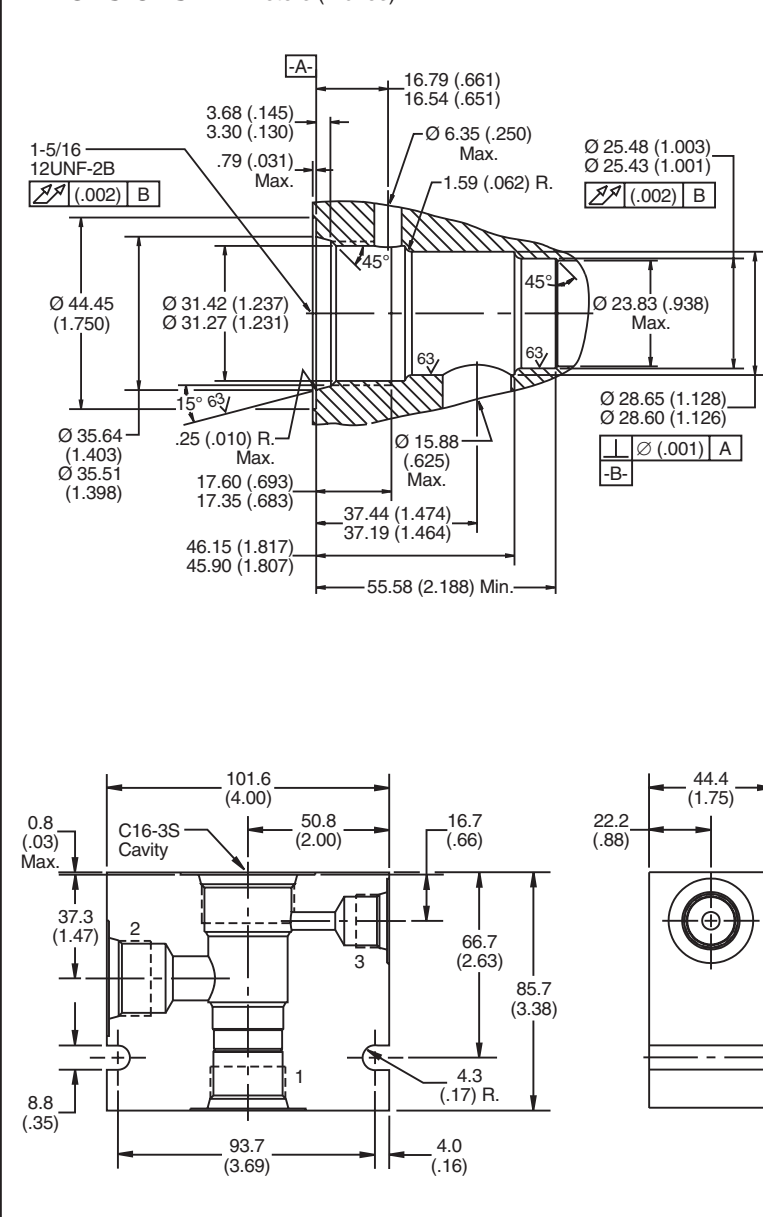
		VALVE				
		Winner's Circle	Parker	Waterman	FPS	CEC
CAVITY	Winner's Circle	X	X	X	X	X
	Parker	X	X	X	X	X
	Waterman	X	X	X	X	X
	FPS	X	X	X	X	X
	CEC	X	X	X	X	X

Performance Curve

Pressure Drop vs. Flow



Dimensions



Ordering Information

B16	—	3S	—		—	
16 Size		3-Way Short Cavity		Body Material		Port Size
Code	Body Material	Code	Port Size			
Omit	Steel	16T	SAE - 16			
A	Aluminum	16B	1" BSPG			

Form Tool: Rougher NFT16S-3R

Finisher NFT16S-3F

Weight: 2.4 kg (5.4 lbs.)

Technical Information

16 Size, 4-Way

CV

Check Valves

SH

Shuttle Valves

LM
Lo

Rad/Motor Controls

FC

Flow Controls

PC

Pressure Controls

LE

Logic Elements

DC

Directional Controls

MV

Manual Valves

SV

Solenoid Valves

PV

Proportional Valves

CE
Elect

Skills & Techniques

BC
Bo
Ca

as & activities

TD
Tech

Valve/Cavity Compatibility

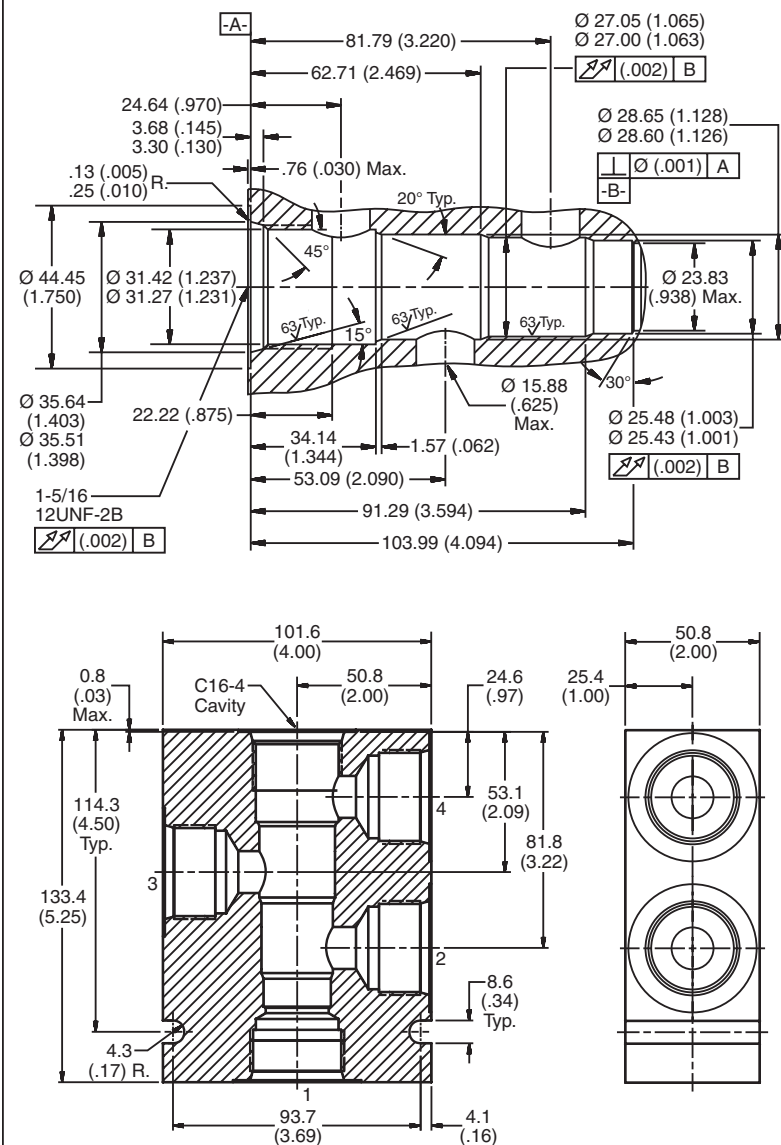
For additional information see Technical Tips on pages BC1-BC6.

		VALVE				
		Winner's Circle	Parker	Waterman	FPS	CEC
CAVITY	Winner's Circle	X	X	X	X	X
	Parker	X	X	X		
	Waterman	X	X	X		
	FPS	X			X	X
	CEC	X			X	X

Performance Curve

Pressure Drop vs. Flow

Dimensions Millimeters (Inches)



Ordering Information

The diagram illustrates the structure of a part number using four boxes connected by horizontal lines. The first box contains 'B16' with '16 Size' below it. The second box contains '4' with '4-Way Cavity' below it. The third box is empty with 'Body Material' below it. The fourth box is empty with 'Port Size' below it.

Code	Body Material
Omit	Steel
A	Aluminum

Code	Port Size
16T	SAE - 16

Form Tool: Rougher NFT16-4R

Finisher NFTA16-4F

Weight: 3.75 kg (8.125 lbs.)

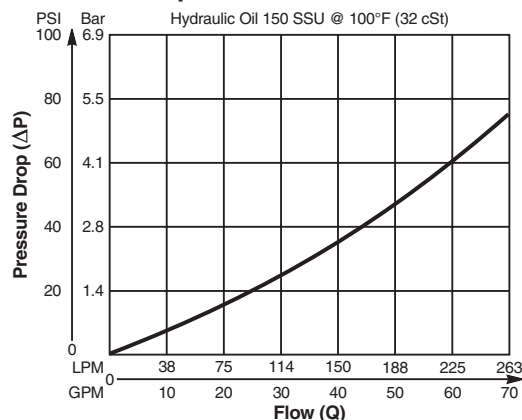
Valve/Cavity Compatibility

For additional information see Technical Tips on pages BC1-BC6.

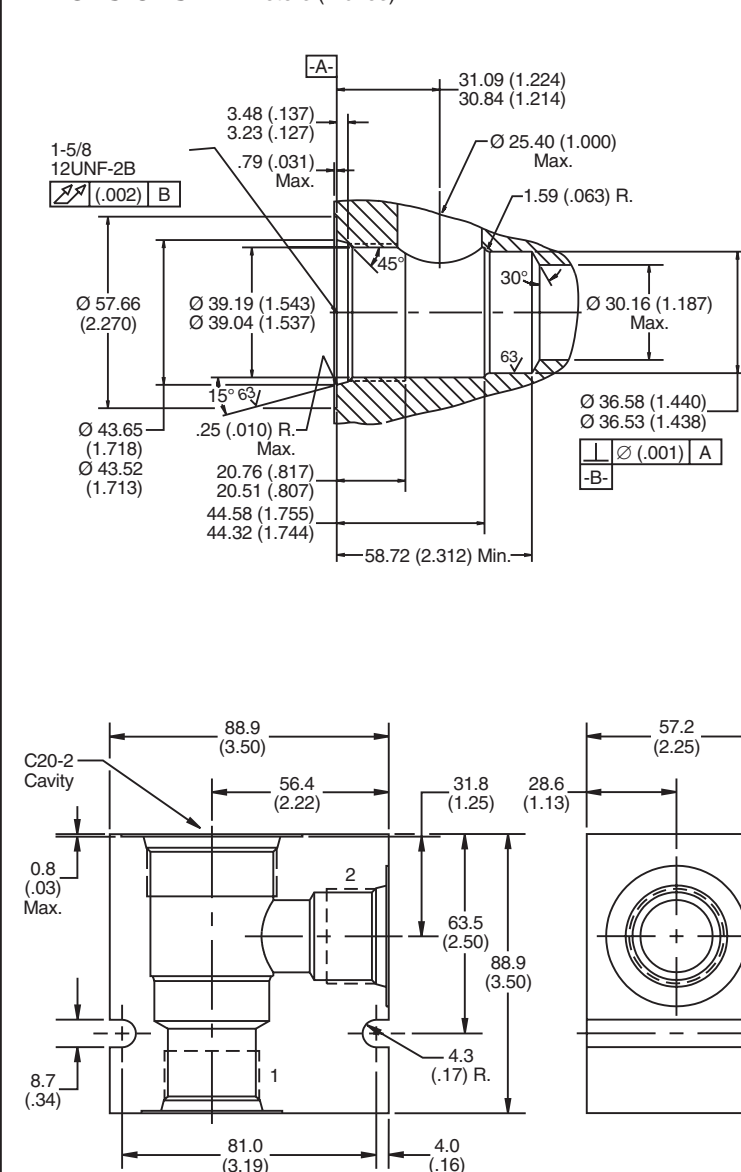
		VALVE				
		Winner's Circle	Parker	Waterman	FPS	CEC
CAVITY	Winner's Circle	X	X	X	X	X
	Parker	X	X	X	X	X
	Waterman	X	X	X	X	X
	FPS	X	X	X	X	X
	CEC	X	X	X	X	X

Performance Curve

Pressure Drop vs. Flow



Dimensions



Ordering Information

B20	—	2	—		—	
20 Size		2-Way Cavity		Body Material		Port Size

Code	Body Material
Omit	Steel

Code	Port Size
20T	SAE - 20
20B	1-1/4" BSPG

Form Tool: Rougher None
Finisher NFT20-2F
Weight: 6.3 kg (14 lbs.)

CV

Check
Valves

SH

Shuttle
Valves

LM

Load/Motor
Controls

FC

Flow
Controls

PC

Pressure
Controls

LE

Logic
Elements

DC

Directional
Controls

MV

Manual
Valves

SV

Solenoid
Valves

PV

Proportional
Valves

CE

Coils &
Electronics

BC

Bodies &
Cavities

TD

Technical
Data

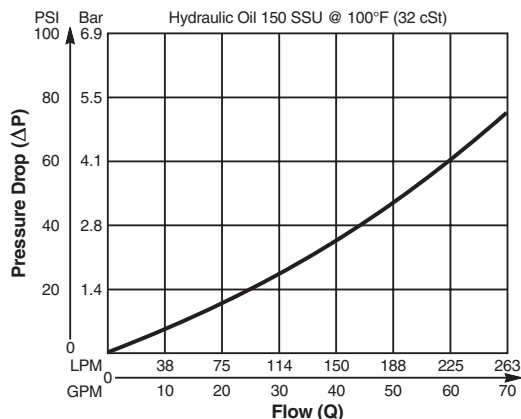
Valve/Cavity Compatibility

For additional information see Technical Tips on pages BC1-BC6.

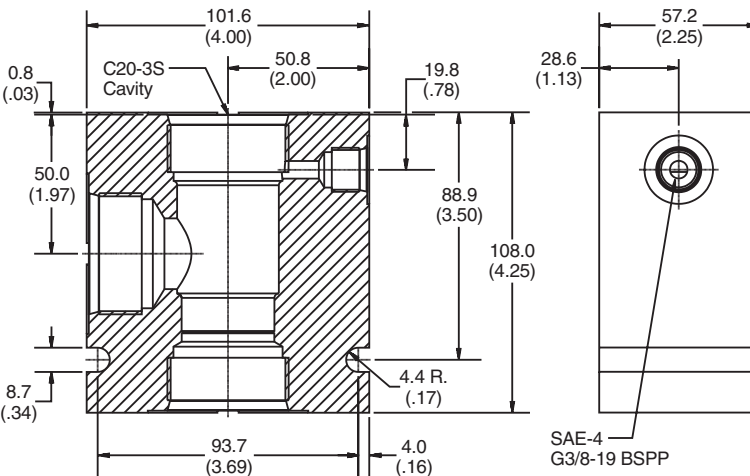
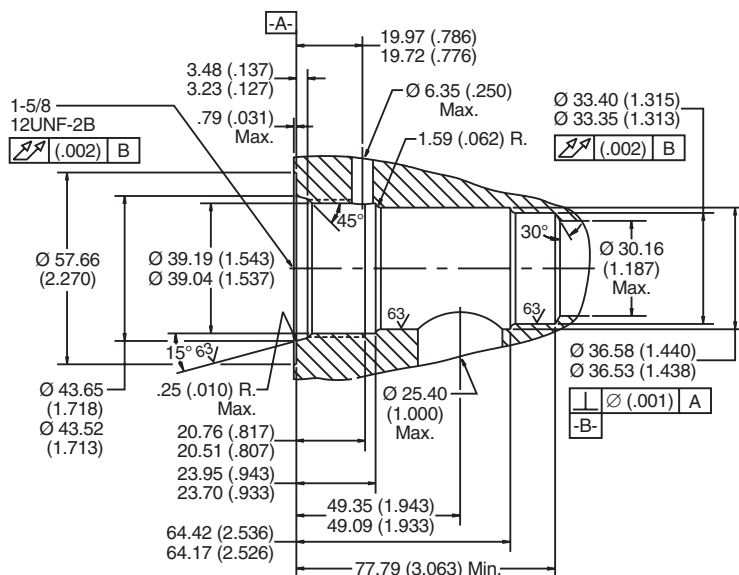
		VALVE				
		Winner's Circle	Parker	Waterman	FPS	CEC
CAVITY	Winner's Circle	X				X
	Parker					
	Waterman					
	FPS					
	CEC	X				X

Performance Curve

Pressure Drop vs. Flow



Dimensions



Ordering Information

B20	—	3S	—		—	
20 Size		3-Way Short Cavity		Body Material		Port Size

Code	Body Material
Omit	Steel

Code	Port Size
20T	SAE - 20
20B	1-1/4" BSPG

Form Tool: Rougher NFT20S-3R

Finisher NFT20S-3F

Weight: 10.8 kg (22.2 lbs.)

Valve/Cavity Compatibility

For additional information see Technical Tips on pages BC1-BC6.

		VALVE	
		MHC-010	2-N-4*-10
CAVITY	MHC-010	X	X
	2-N-4*-10	X	X

Ordering Information

MHC	010		53
Counterbalance Cartridge Valve	Nominal Flow Rating	Body Type	Port Size

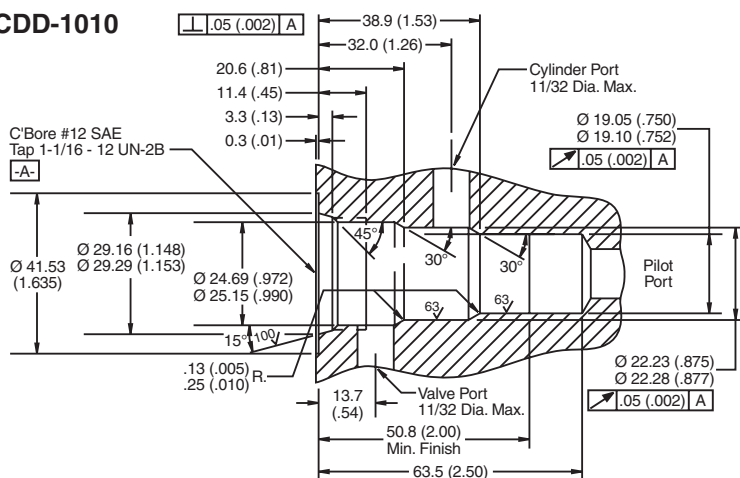
Code	Body Type	Code	Port Size
A	Single	53	SAE-10 through port
D	Dual		

Form Tool: FR-500

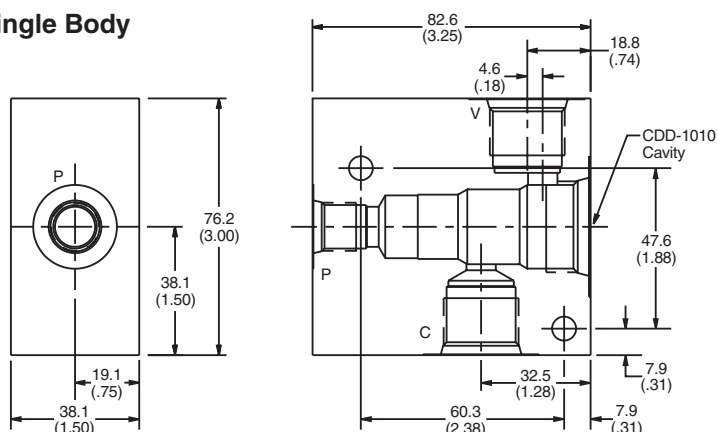
Weight: Single 1.1 kg (2.25 lbs.)
Dual 1.9 kg (4.10 lbs.)

Dimensions Millimeters (Inches)

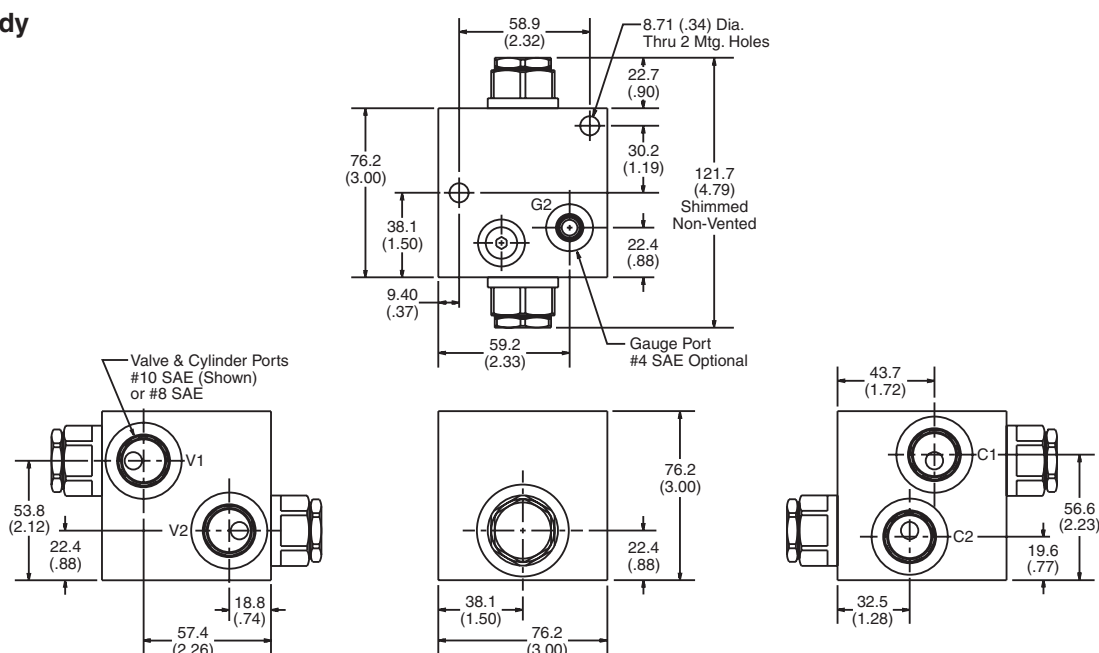
CDD-1010



Single Body



Dual Body



CV

Check
Valves

SH

Shuttle
Valves

LM

Load/Motor
Controls

FC

Flow
Controls

PC

Pressure
Controls

LE

Logic
Elements

DC

Directional
Controls

MV

Manual
Valves

SV

Solenoid
Valves

PV

Proportional
Valves

CE

Coils &
Electronics

BC

Bodies &
Cavities

TD

Technical
Data

Valve/Cavity Compatibility

For additional information see Technical Tips on pages BC1-BC6.

		VALVE	
		MHC-022	2-N-4*-25
CAVITY	MHC-022	X	X
	2-N-4*-25	X	X

Ordering Information

MHC	022		53
Counterbalance Cartridge Valve	Nominal Flow Rating	Body Type	Port Size

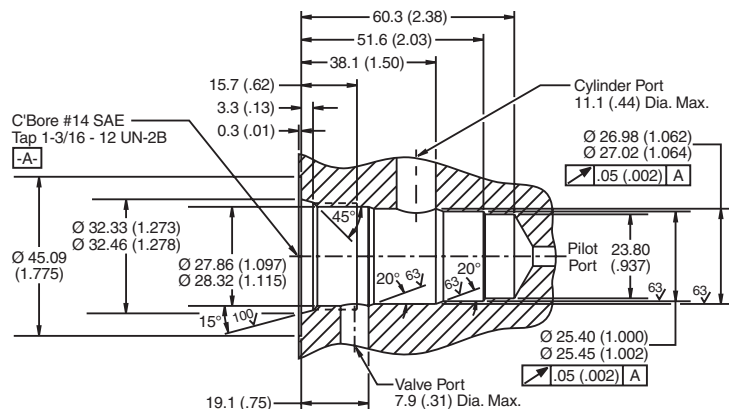
Code	Body Type	Code	Port Size
A	Single	53	SAE-10 through port
D	Dual		

Form Tool: FR-501

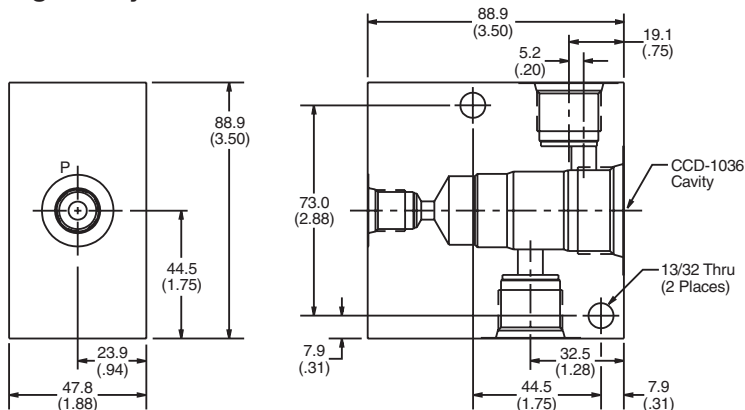
Weight: Single 1.7 kg (3.75 lbs.)
Dual 2.7 kg (5.90 lbs.)

Dimensions Millimeters (Inches)

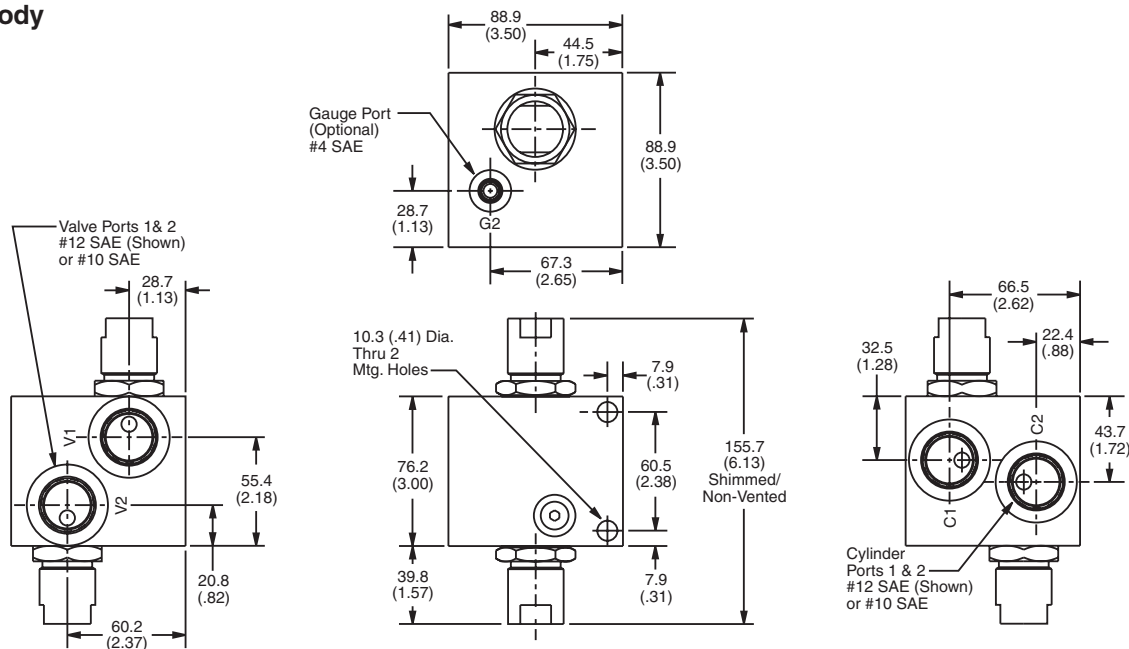
CDD-1036



Single Body



Dual Body



Valve/Cavity Compatibility

For additional information see Technical Tips on pages BC1-BC6.

		VALVE	
		MHC-025	2-N-4*-50
CAVITY	MHC-025	X	X
	2-N-4*-50	X	X

Ordering Information

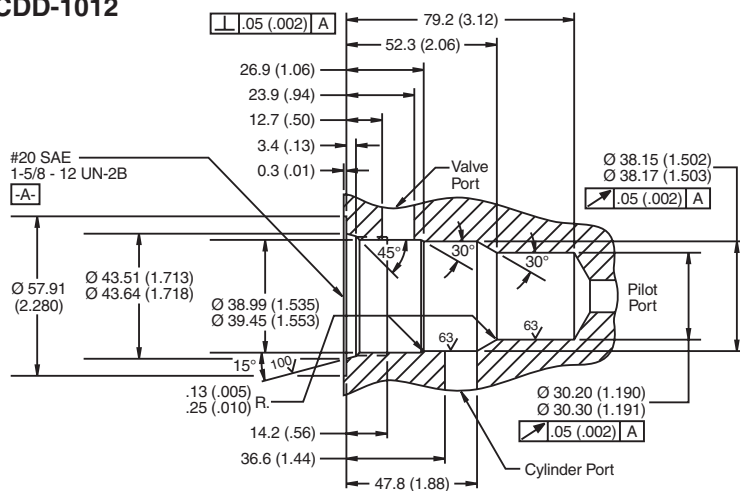
MHC	025		54
Counterbalance Cartridge Valve	Nominal Flow Rating	Body Type	Port Size

Code	Body Type	Code	Port Size
A	Single	54	SAE-12 through port
D	Dual		

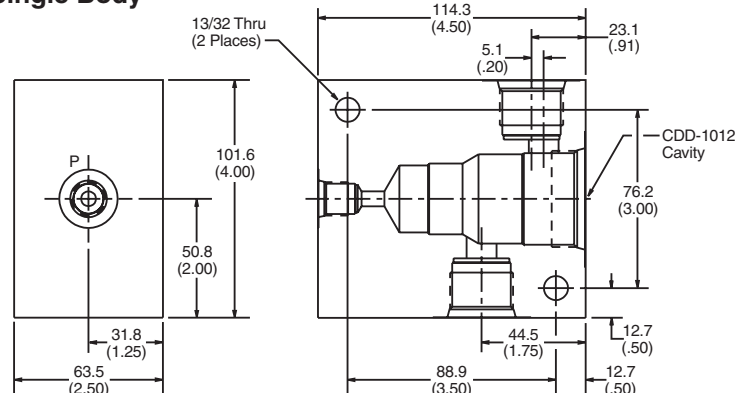
Form Tool: Drill FD-291
Reamer FR-105
Weight: Single 3.3 kg (7.25 lbs.)
Dual 5.4 kg (11.90 lbs.)

Dimensions Millimeters (Inches)

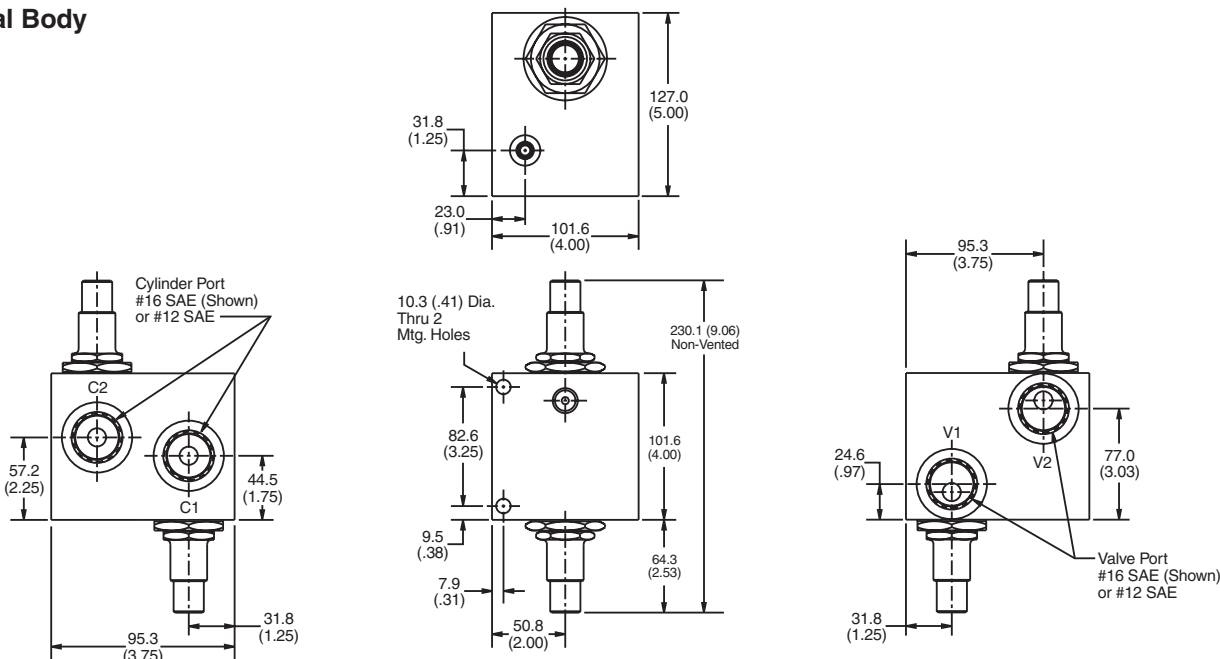
CDD-1012



Single Body



Dual Body



CV

Check
Valves

SH

Shuttle
Valves

LM

Load/Motor
Controls

FC

Flow
Controls

PC

Pressure
Controls

LE

Logic
Elements

DC

Directional
Controls

MV

Manual
Valves

SV

Solenoid
Valves

PV

Proportional
Valves

CE

Coils &
Electronics

BC

Bodies &
Cavities

TD

Technical
Data

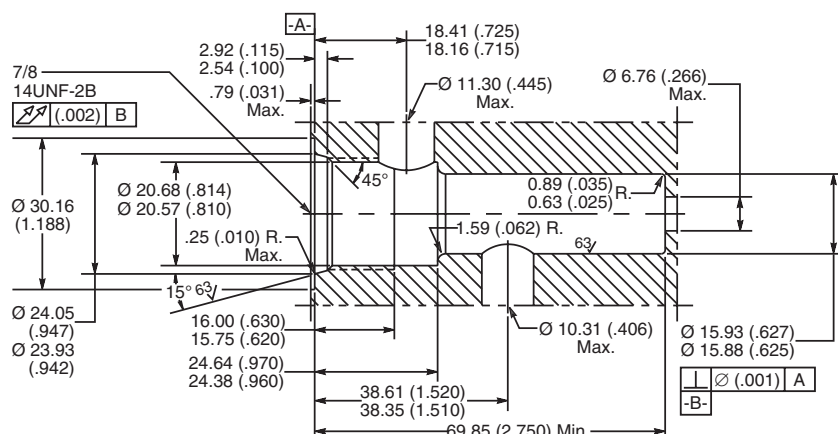
Dimensions Millimeters (Inches)**10 Size Cavity for Single
Check and Pilot Piston**

For Check Valve Use

CVH103P**

For Pilot Piston Use

717909	No Seal
717909N	Buna-N
717909V	Fluorocarbon

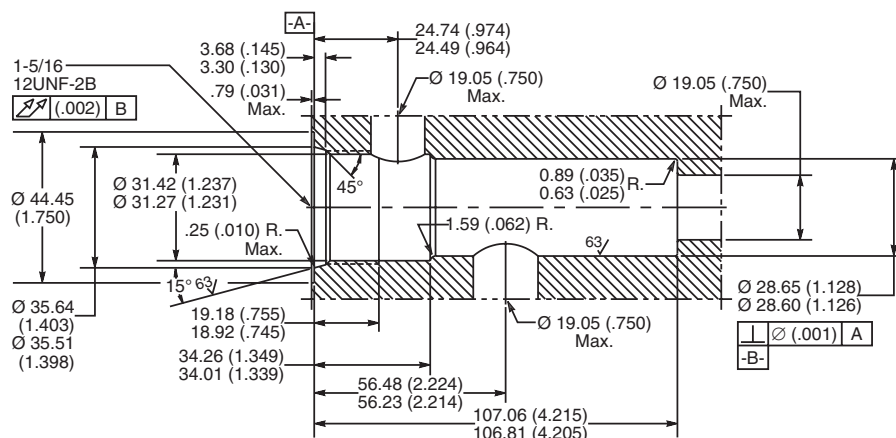
**16 Size Cavity for Single
Check and Pilot Piston**

For Check Valve Use

CVH161P**

For Pilot Piston Use

717910	No Seal
717910N	Buna-N
717910V	Fluorocarbon

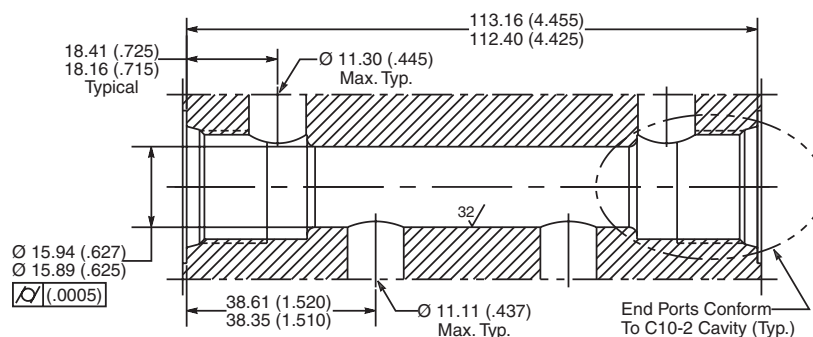
**10 Size Cavity for Dual
Check and Pilot Piston**

For Check Valves Use 2

CVH103P**

For Pilot Piston Use

717917	No Seal
717917N	Buna-N
717917V	Fluorocarbon

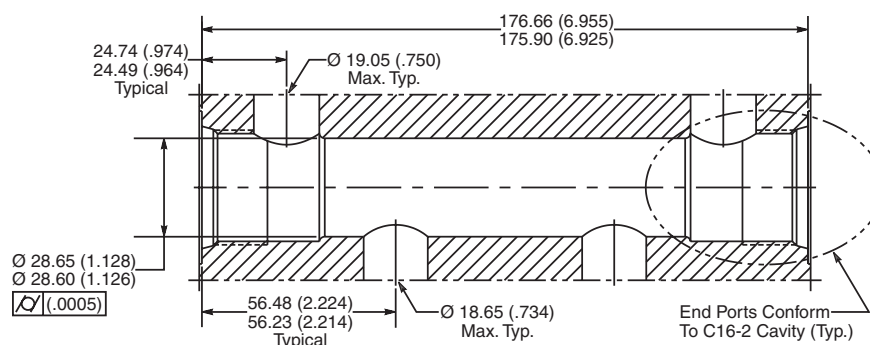
**16 Size Cavity for Dual
Check and Pilot Piston**

For Check Valves Use 2

CVH161P**

For Pilot Piston Use

717918	No Seal
717918N	Buna-N
717918V	Fluorocarbon



Technical Information

Cavity Plugs

CV

Check
Valves

SH

Shuttle
Valves

LM

Load/Motor
Controls

FC

Flow
Controls

PC

Pressure
Controls

LE

Logic
Elements

DC

Directional
Controls

MV

Manual
Valves

SV

Solenoid
Valves

PV

Proportional
Valves

CE

Coils &
Electronics

BC

Bodies &
Cavities

TD

Technical
Data

General Description

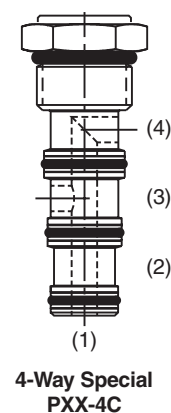
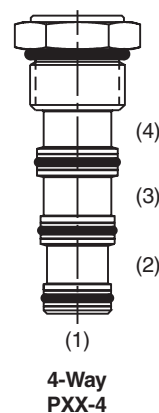
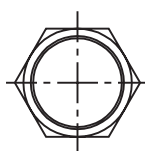
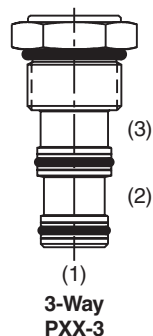
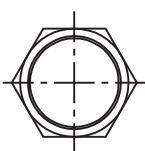
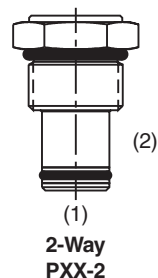
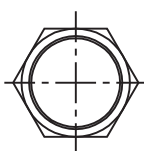
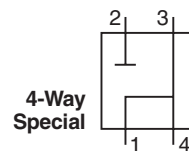
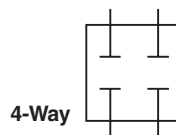
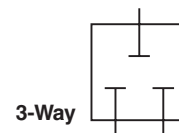
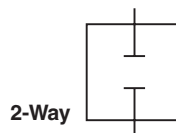
Parker cavity plugs can be used in any Integrated Hydraulic Circuit where one valve serves several machines and/or options. Two machines may have identical circuits except for one having a pressure reducing function, and the other not having this function. The machine that does not require this function can have the pressure reducing function replaced by a cavity plug; thereby utilizing a common body for both machines.

Specifications

Maximum Working Pressure - 350 Bar (5000 PSI)

Material - Steel

Symbols



Ordering Information

P		—		
Plug	Cavity Plug Thread Size	Cavity Type	Type	Seals

Code	Cavity Plug Thread Size
08*	3/4 - 16
10	7/8 - 14
12	1-1/16 - 12
16	1-5/16 - 12

Code	Cavity Type
2	Two Way
3	Three Way
4	Four Way

Type									
Code	Two Way		Three Way			Four Way			
	1	2	1	2	3	1	2	3	4
Omit	C	C	C	C	C	C	C	C	C
A			O	O	C	O	O	O	C
B			O	C	O	O	O	C	O
C			C	O	O	O	C	O	O
D						*O	*O	*C	*C

Code	Seals
Omit	Nitrile
V	Fluorocarbon

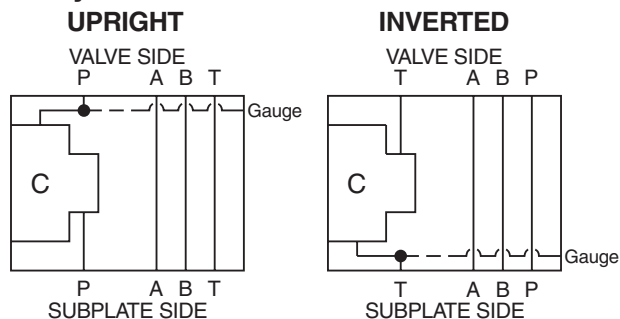
* 08 Nose Diameter = 1/2"
Consult Factory for Shaded Areas.

C = Blocked O = Open
* Only Available In Sizes 08 and 10.
Consult Factory for Shaded Areas.

General Description

P Port Interrupt, 2-Way, D03 Cartpak Body.
For additional information see Technical Tips on pages BC1-BC6.

Body Schematic



Ordering Information

BD03	—	PN	—		—		—	
D03 Cartpak Body		P Port Interrupt 2-Way		Plug Seals		Body Material		

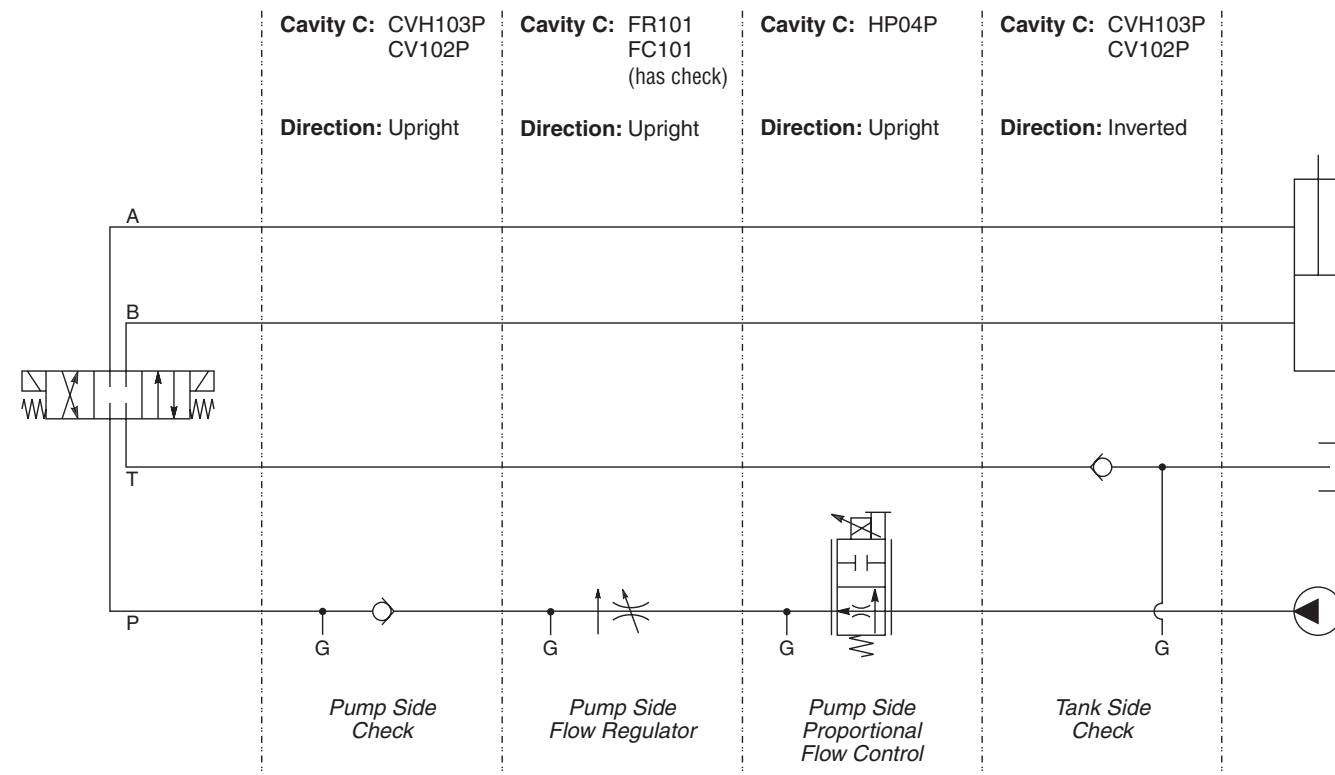
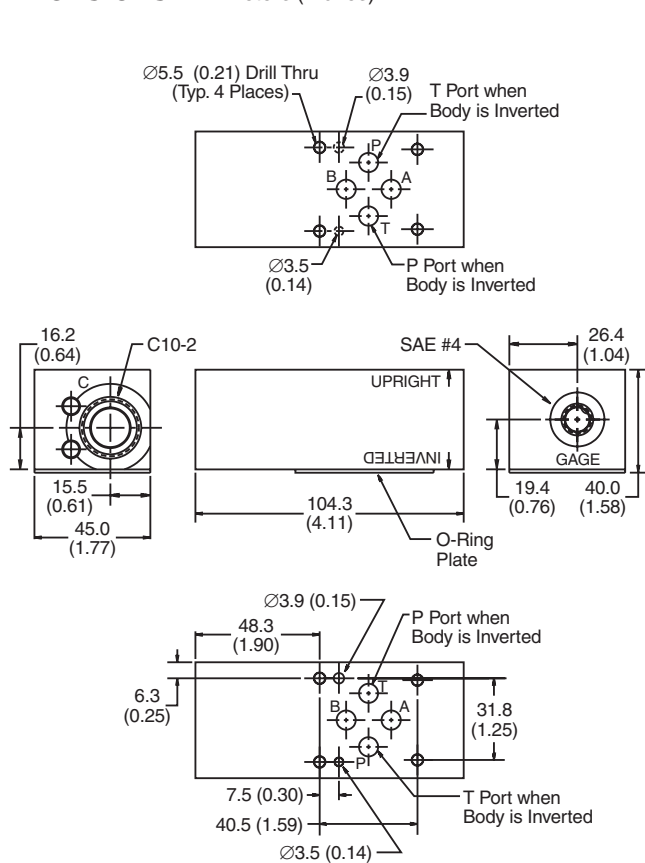
Code	Plug Seals
Omit	Nitrile
V	Fluorocarbon

Code	Body Material
A	Aluminum
S	Steel (Ductile Iron)

Body supplied with:

- Gage Port Plug Installed
- O-Ring Plate, O-Rings and Drive Pin Kit

Dimensions



CV

Check
Valves

SH

Shuttle
Valves

LM

Load/Motor
Controls

FC

Flow
Controls

PC

Pressure
Controls

LE

Logic
Elements

DC

Directional
Controls

MV

Manual
Valves

SV

Solenoid
Valves

PV

Proportional
Valves

CE

Coils &
Electronics

BC

Bodies &
Cavities

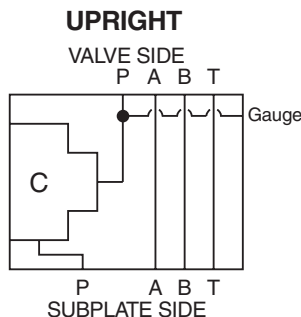
TD

Technical
Data

General Description

P Port Interrupt, 2-Way, D03 Cartpak Body.
For additional information see Technical Tips
on pages BC1-BC6.

Body Schematic



Ordering Information

BD03	—	PN2	—		—		—	
D03 Cartpak Body		P Port Interrupt 2-Way		Plug Seals		Body Material		

Code	Plug Seals
Omit	Nitrile
V	Fluorocarbon

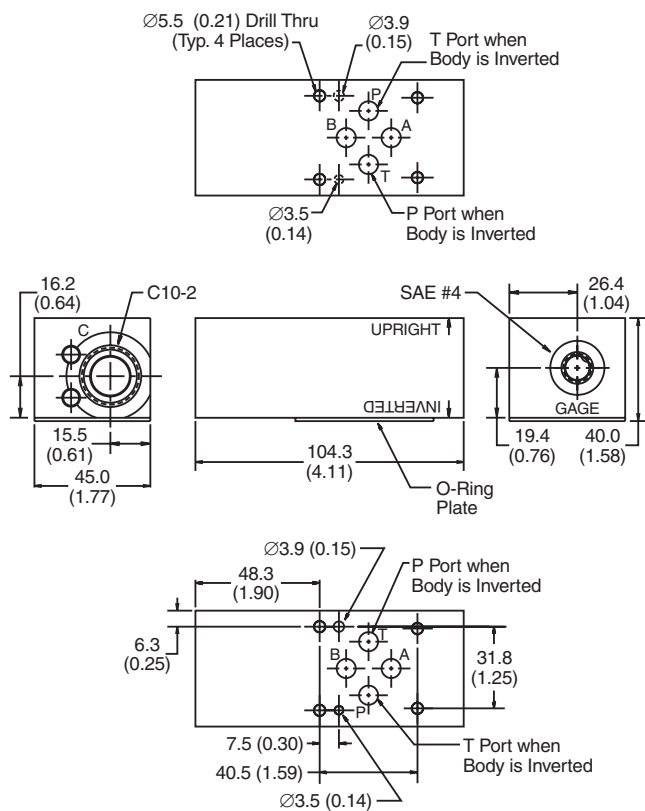
Code	Body Material
A	Aluminum
S	Steel (Ductile Iron)

Body supplied with:

- Gage Port Plug Installed
- O-Ring Plate, O-Rings and Drive Pin Kit

Dimensions

Millimeters (Inches)

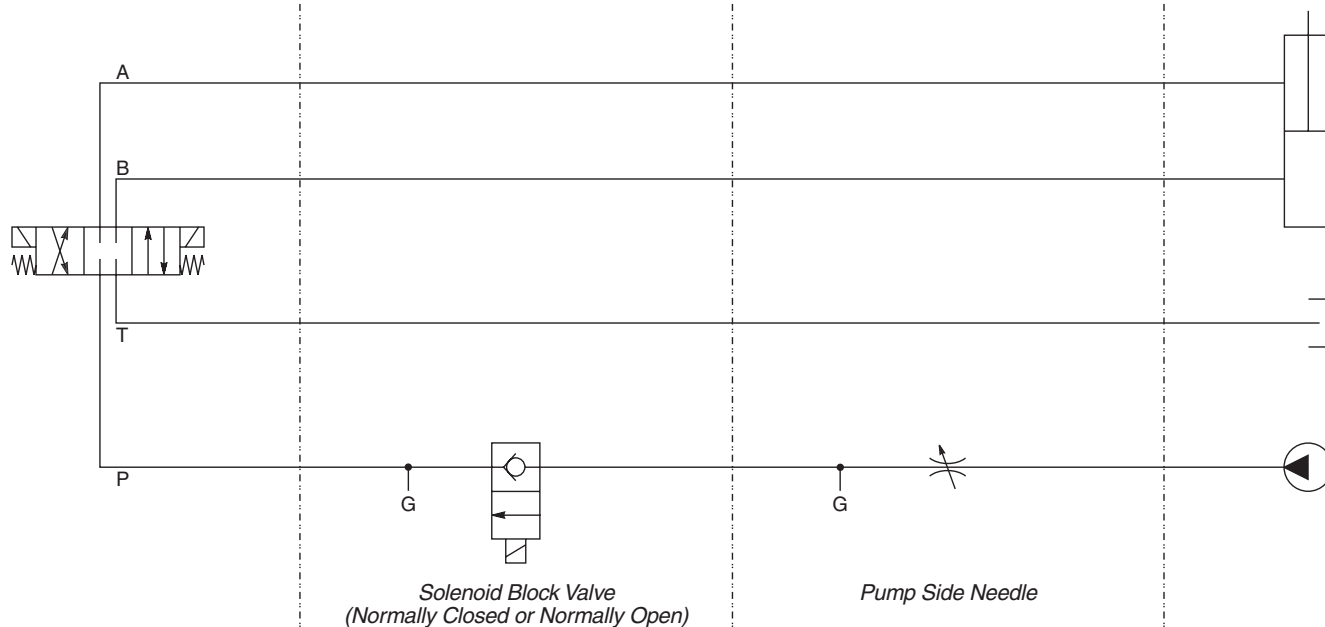


Cavity C: DSL101*
DSH101*

Direction: Upright

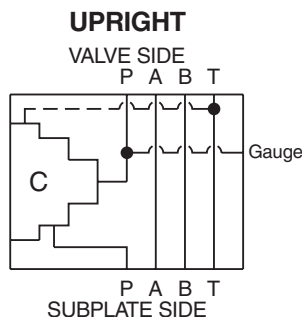
Cavity C: NVH101
FV101

Direction: Upright



General Description

P Port Interrupt, Reducing Function, D03 Cartpak Body. For additional information see Technical Tips on pages BC1-BC6.

Body Schematic**Ordering Information**

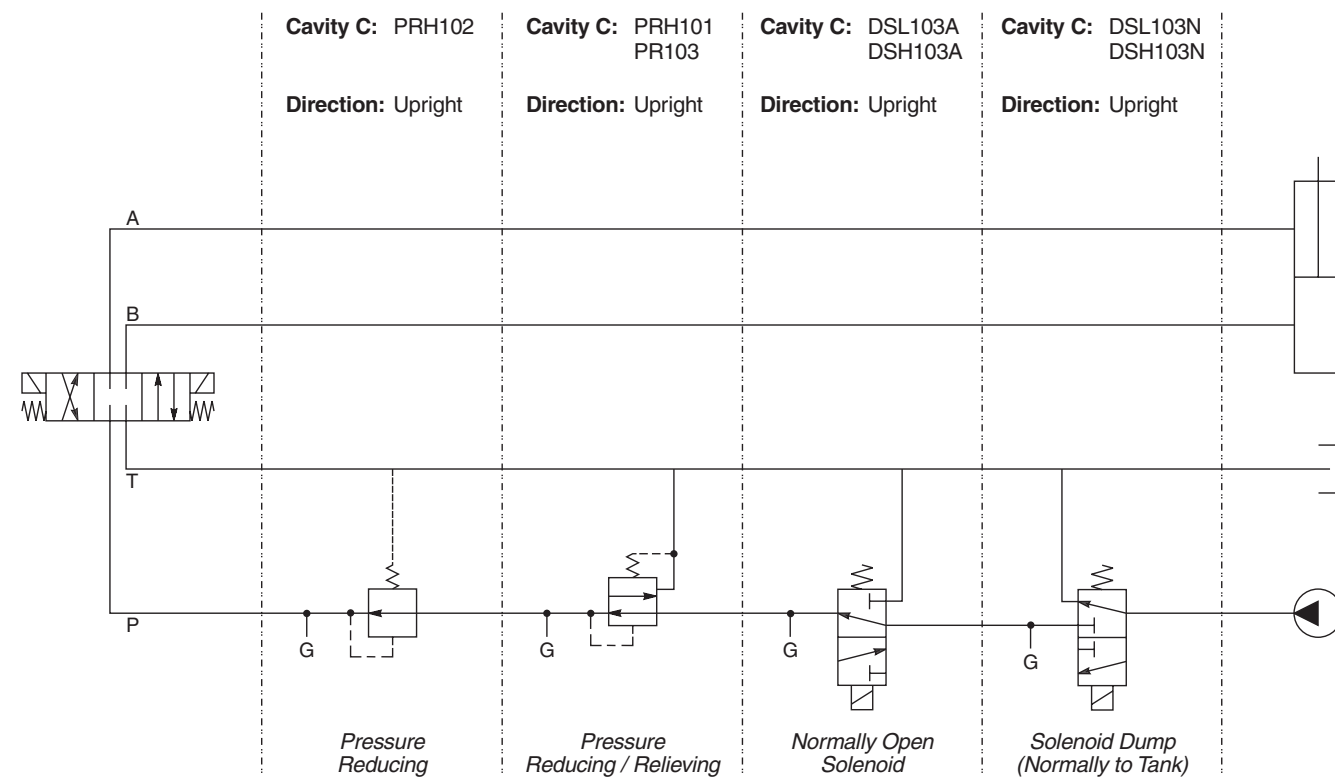
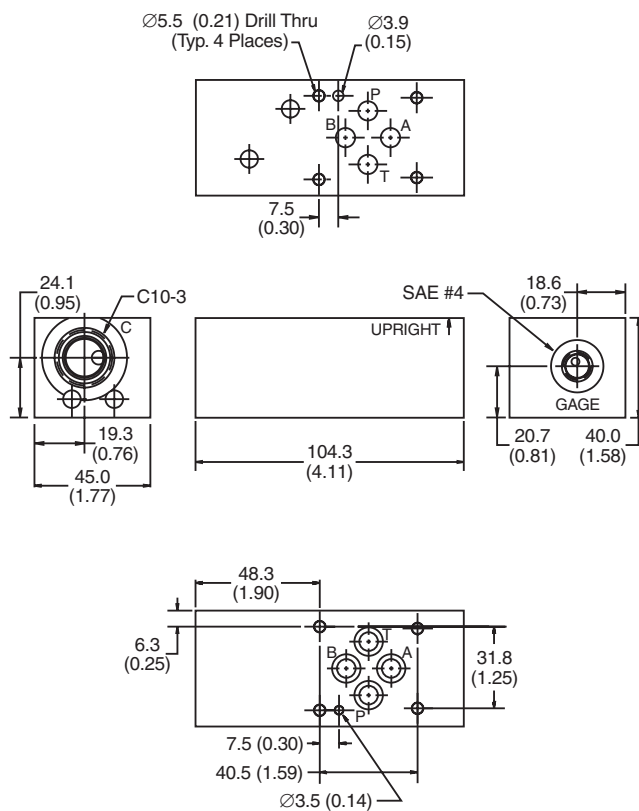
BD03	—	PNR	—		—	
D03 Cartpak Body		P Port Interrupt Reducing		Plug Seals		Body Material

Code	Plug Seals
Omit	Nitrile
V	Fluorocarbon

Code	Body Material
A	Aluminum
S	Steel (Ductile Iron)

Body supplied with:

- Gage Port Plug Installed
- O-Rings and Drive Pin

Dimensions Millimeters (Inches)

CV

Check
Valves

SH

Shuttle
Valves

LM

Load/Motor
Controls

FC

Flow
Controls

PC

Pressure
Controls

LE

Logic
Elements

DC

Directional
Controls

MV

Manual
Valves

SV

Solenoid
Valves

PV

Proportional
Valves

CE

Coils &
Electronics

BC

Bodies &
Cavities

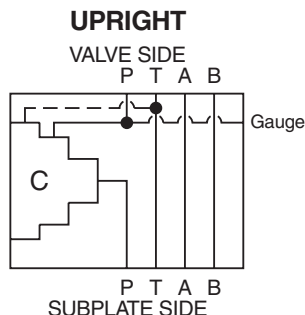
TD

Technical
Data

General Description

P Port Interrupt, Sequence Function, D03 Cartpak Body. For additional information see Technical Tips on pages BC1-BC6.

Body Schematic



Ordering Information

BD03	—	PNS	—		—		—	
D03 Cartpak Body		P Port Interrupt Sequence		Plug Seals		Body Material		

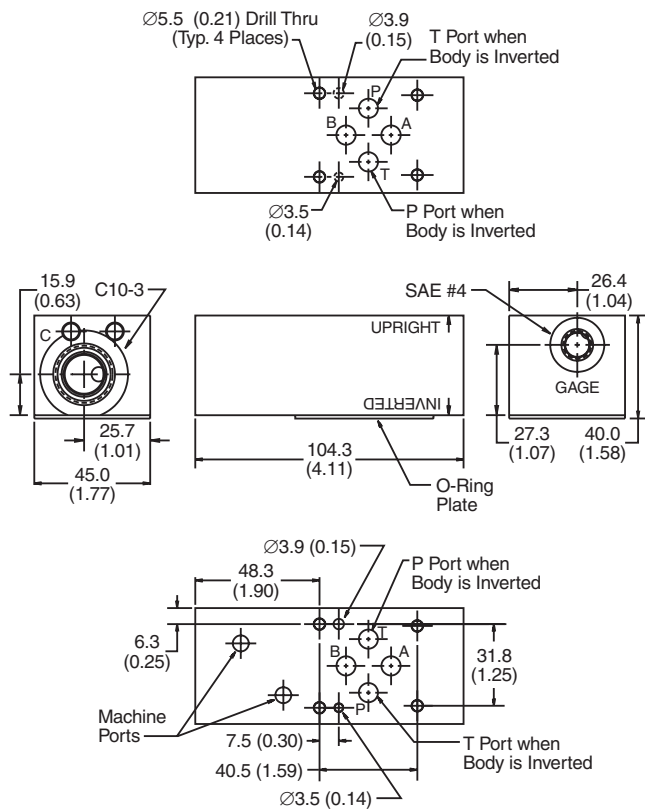
Code	Plug Seals
Omit	Nitrile
V	Fluorocarbon

Code	Body Material
A	Aluminum
S	Steel (Ductile Iron)

Body supplied with:

- Gauge Port Plug Installed
- O-Ring Plate, O-Rings and Drive Pin Kit

Dimensions Millimeters (Inches)

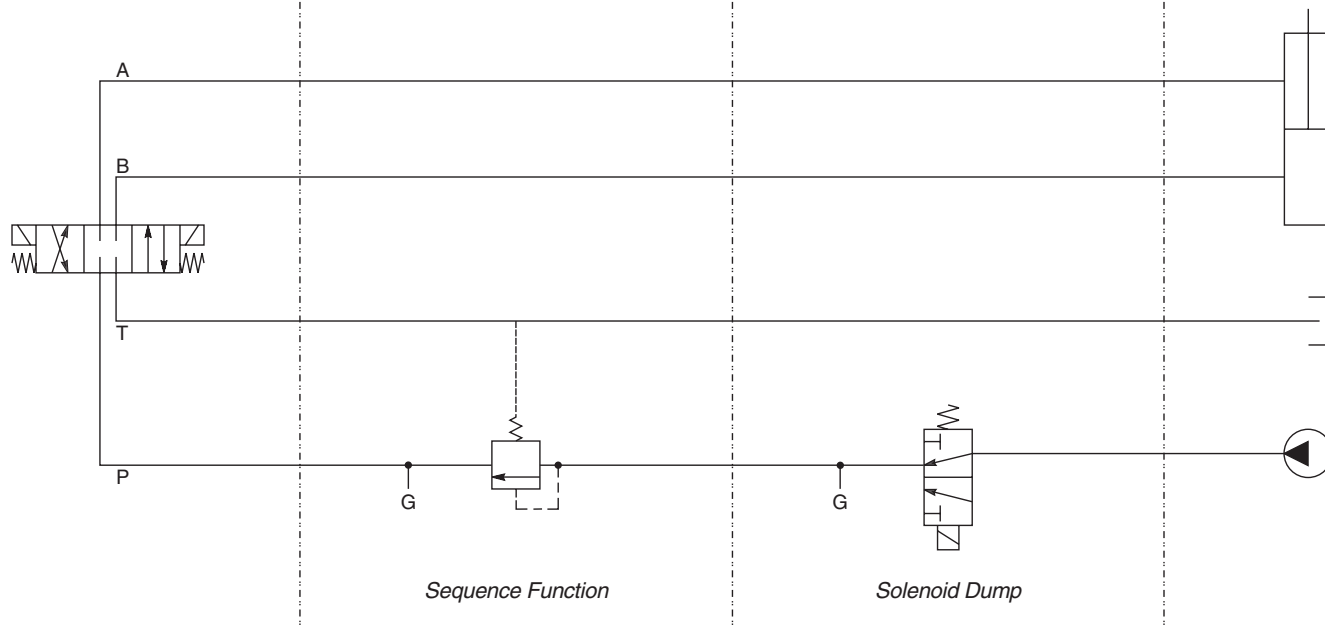


Cavity C: SVH101

Direction: Upright

Cavity C: DSL103A
DSH103A

Direction: Upright

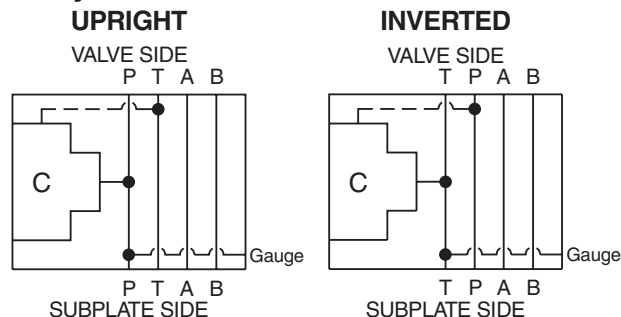


General Description

P to T D03 Cartpak Body.

For additional information see Technical Tips on pages BC1-BC6.

Body Schematic



Ordering Information

BD03	—	PT	—		—	
D03 Cartpak Body		P to T		Plug Seals		Body Material

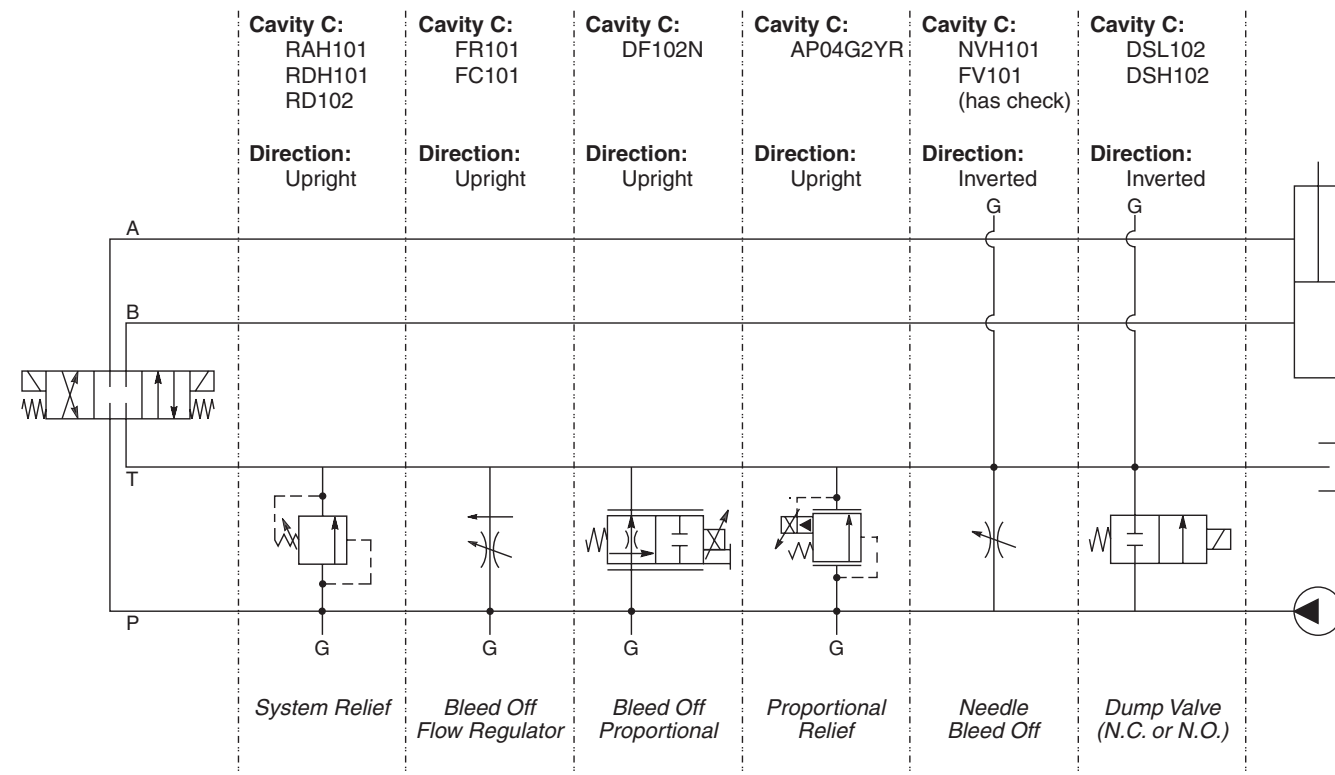
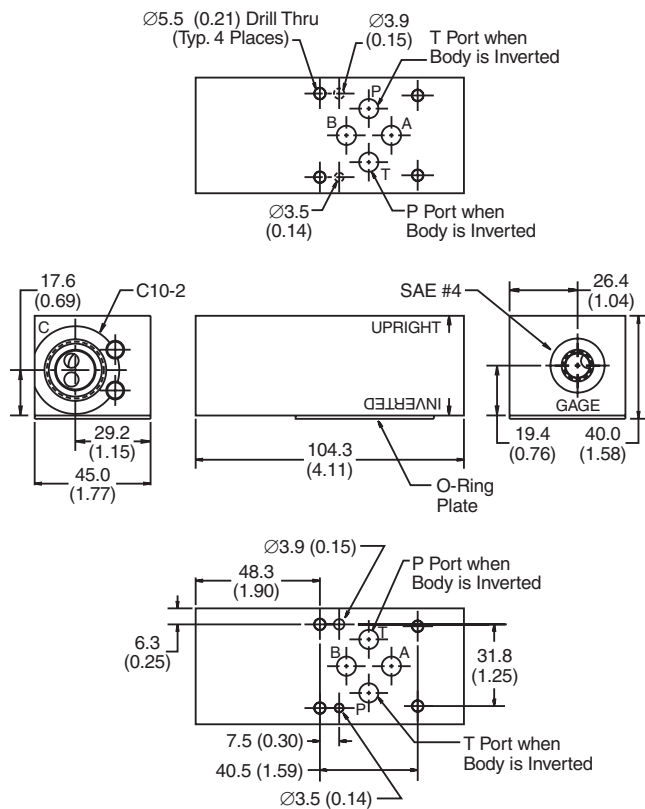
Code	Plug Seals
Omit	Nitrile
V	Fluorocarbon

Code	Body Material
A	Aluminum
S	Steel (Ductile Iron)

Body supplied with:

- Gage Port Plug Installed
- O-Ring Plate, O-Rings and Drive Pin Kit

Dimensions Millimeters (Inches)



CV

Check
Valves

SH

Shuttle
Valves

LM

Load/Motor
Controls

FC

Flow
Controls

PC

Pressure
Controls

LE

Logic
Elements

DC

Directional
Controls

MV

Manual
Valves

SV

Solenoid
Valves

PV

Proportional
Valves

CE

Coils &
Electronics

BC

Bodies &
Cavities

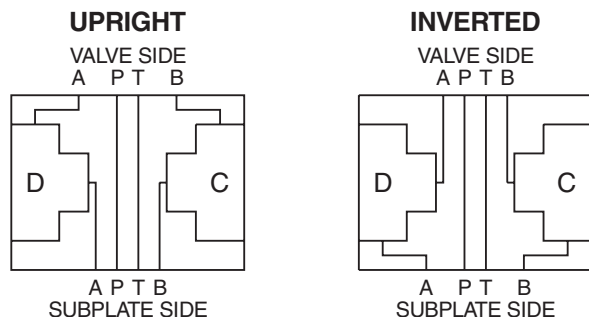
TD

Technical
Data

General Description

A and B Port Interrupt D03 Cartpak Body.
For additional information see Technical Tips
on pages BC1-BC6.

Body Schematic



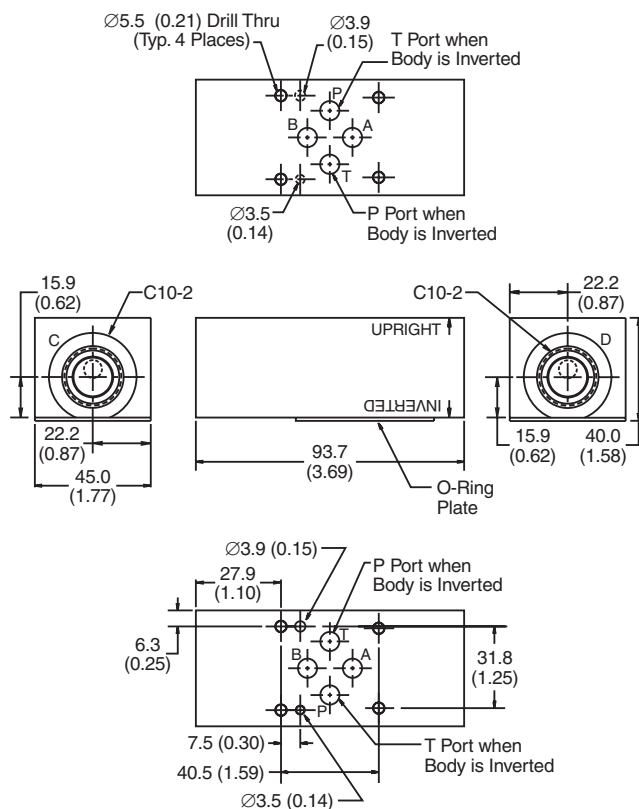
Ordering Information

BD03	—	ABN	—		—		—	
D03 Cartpak Body		A & B Port Interrupt		Plug Seals		Body Material		
Code	Plug Seals		Code	Body Material				
Omit	Nitrile		A	Aluminum				
V	Fluorocarbon		S	Steel (Ductile Iron)				

Body supplied with:

- O-Ring Plate, O-Rings and Drive Pin Kit

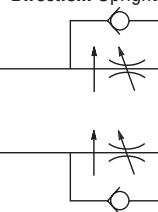
Dimensions Millimeters (Inches)

Dual Flow Controls
Cavity C and D: FC101

Single F.C. on Port A
Cavity C: SAE Plug
(10HP50N-S or 10HP50V-S)
Cavity D: FC101

Single F.C. on Port B
Cavity C: FC101
Cavity D: SAE Plug
(10HP50N-S or 10HP50V-S)

Direction: Upright



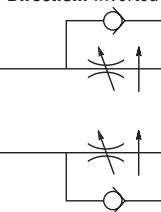
Meter Out
Pressure Compensated
Flow Control

Dual Flow Controls
Cavity C and D: FC101

Single F.C. on Port A
Cavity C: SAE Plug
(10HP50N-S or 10HP50V-S)
Cavity D: FC101

Single F.C. on Port B
Cavity C: FC101
Cavity D: SAE Plug
(10HP50N-S or 10HP50V-S)

Direction: Inverted



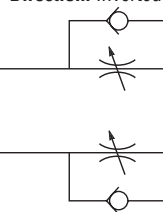
Meter In
Pressure Compensated
Flow Control

Dual Flow Controls
Cavity C and D: FV101

Single F.C. on Port A
Cavity C: SAE Plug
(10HP50N-S or 10HP50V-S)
Cavity D: FV101

Single F.C. on Port B
Cavity C: FV101
Cavity D: SAE Plug
(10HP50N-S or 10HP50V-S)

Direction: Inverted



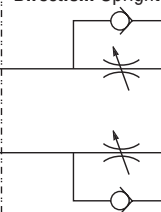
Meter Out Flow Control

Dual Flow Controls
Cavity C and D: FV101

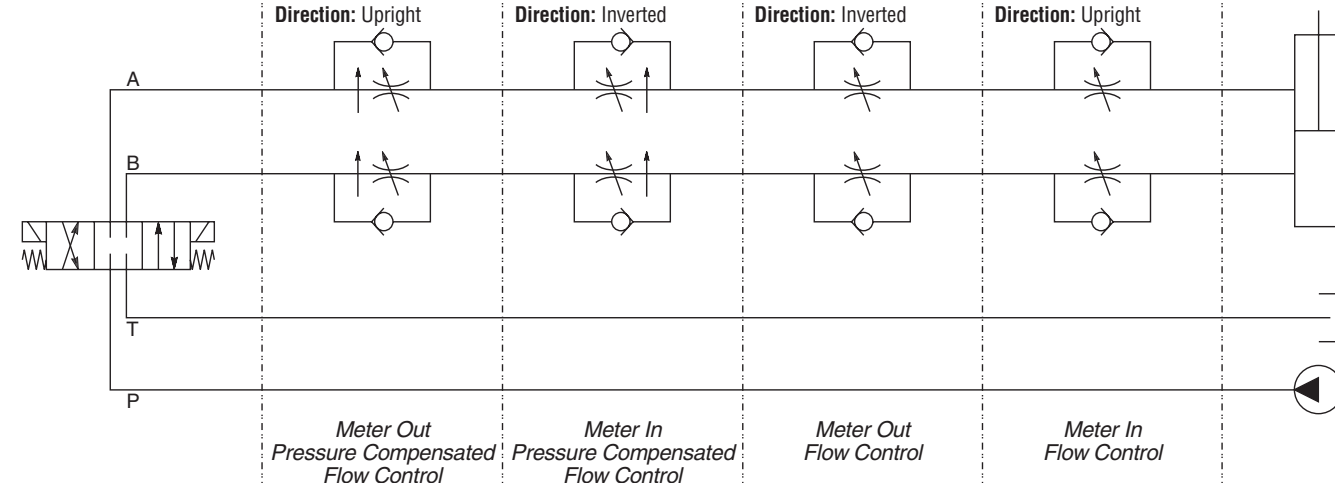
Single F.C. on Port A
Cavity C: SAE Plug
(10HP50N-S or 10HP50V-S)
Cavity D: FV101

Single F.C. on Port B
Cavity C: FV101
Cavity D: SAE Plug
(10HP50N-S or 10HP50V-S)

Direction: Upright



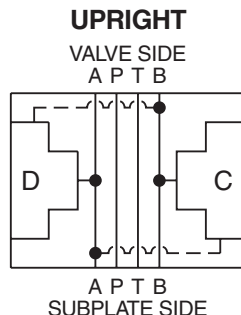
Meter In Flow Control



General Description

A and B Crossover D03 Cartpak Body.
For additional information see Technical Tips on pages BC1-BC6.

Body Schematic



Ordering Information

BD03	—	ABX	—		—	
D03 Cartpak Body		A & B Crossover		Plug Seals		Body Material

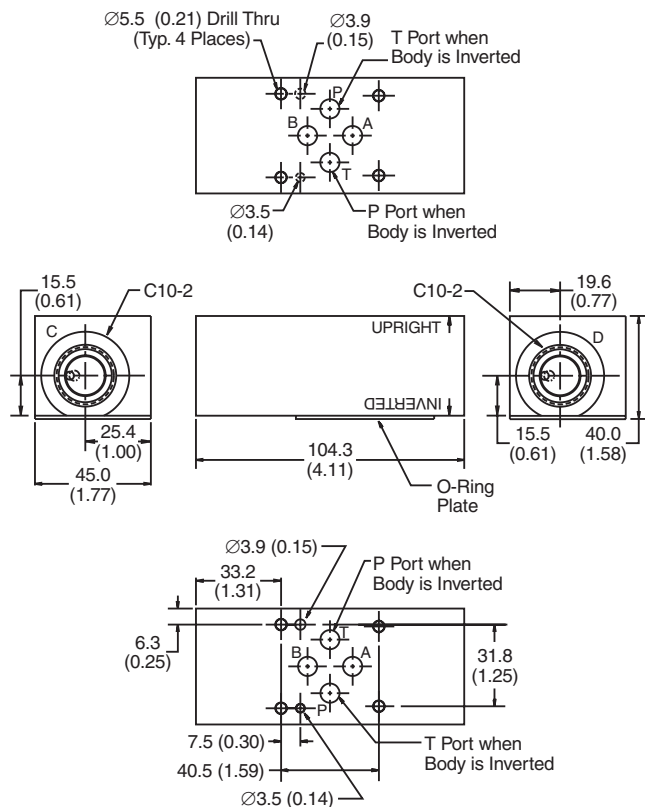
Code	Plug Seals
Omit	Nitrile
V	Fluorocarbon

Code	Body Material
A	Aluminum
S	Steel (Ductile Iron)

Body supplied with:

- O-Ring Plate, O-Rings and Drive Pin Kit

Dimensions



Option 1
Cavity C: RAH101, RD102
Cavity D: RAH101, RD102

Option 2
Cavity C: RDH103
Cavity D: RDH103

Direction: Upright

Option 1
Cavity C: P10-2
Cavity D: RDH103

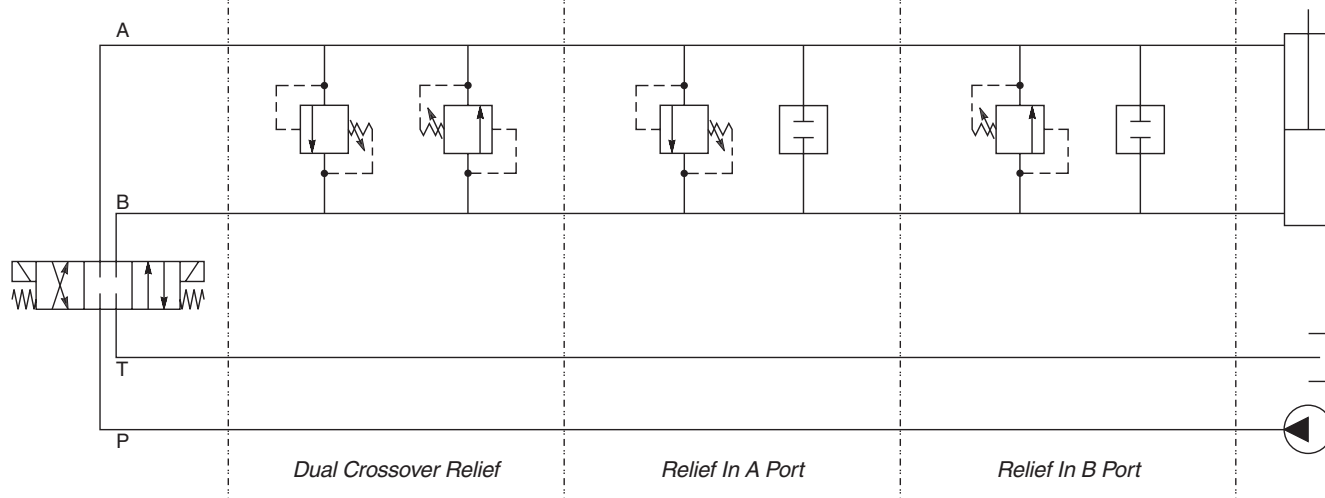
Option 2
Cavity C: RAH101, RD102
Cavity D: P10-2

Direction: Upright

Option 1
Cavity C: RDH103
Cavity D: P10-2

Option 2
Cavity C: P10-2
Cavity D: RAH101, RD102

Direction: Upright



CV

Check
Valves

SH

Shuttle
Valves

LM

Load/Motor
Controls

FC

Flow
Controls

PC

Pressure
Controls

LE

Logic
Elements

DC

Directional
Controls

MV

Manual
Valves

SV

Solenoid
Valves

PV

Proportional
Valves

CE

Coils &
Electronics

BC

Bodies &
Cavities

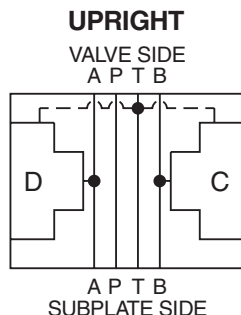
TD

Technical
Data

General Description

A and B Ports to Tank D03 Cartpak Body.
For additional information see Technical Tips
on pages BC1-BC6.

Body Schematic



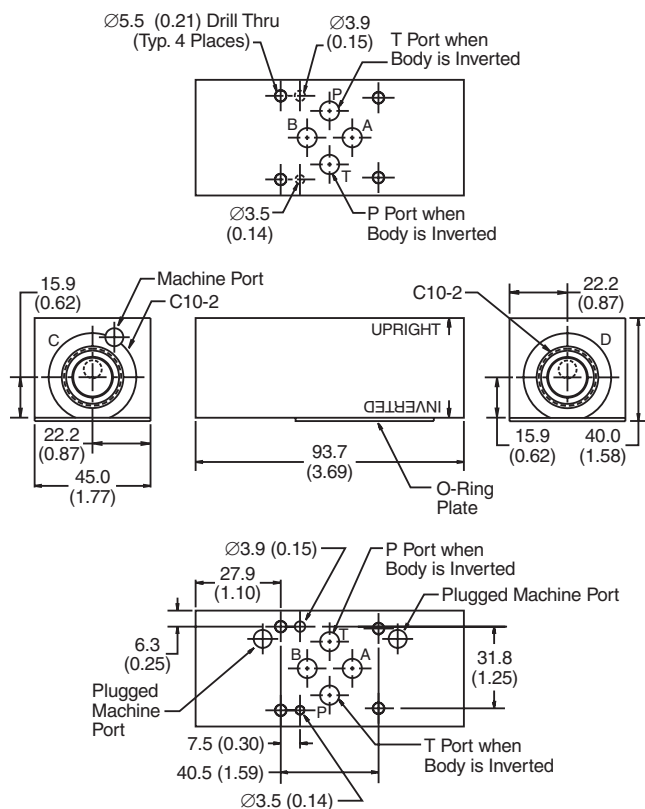
Ordering Information

BD03	—	ABT	—		
D03 Cartpak Body		A & B Ports to Tank		Plug Seals	Body Material
Code	Plug Seals	Code	Body Material		
Omit	Nitrile	A	Aluminum		
V	Fluorocarbon	S	Steel (Ductile Iron)		

Body supplied with:

- O-Ring Plate, O-Rings and Drive Pin Kit

Dimensions Millimeters (Inches)



Dual Relief
Cavity C and D:
RAH101, RD102

Relief on Port A
Cavity C: P10-2
Cavity D: RAH101, RD102

Relief on Port B
Cavity C: RAH101, RD102
Cavity D: P10-2

Direction: Upright

Dual Makeup Checks
Cavity C and D:
CVH104P

Check on Port A
Cavity C: P10-2
Cavity D: CVH104P

Check on Port B
Cavity C: CVH104P
Cavity D: P10-2

Direction: Upright

Dual Bleed Off
Cavity C and D:
FR101, FC101

Bleed Off on Port A
Cavity C: P10-2
Cavity D: FR101, FC101

Bleed Off on Port B
Cavity C: FR101, FC101
Cavity D: P10-2

Direction: Upright

Dual Relief
Cavity C and D:
AP04G2YR

Relief on Port A
Cavity C: P10-2
Cavity D: AP04G2YR

Relief on Port B
Cavity C: AP04G2YR
Cavity D: P10-2

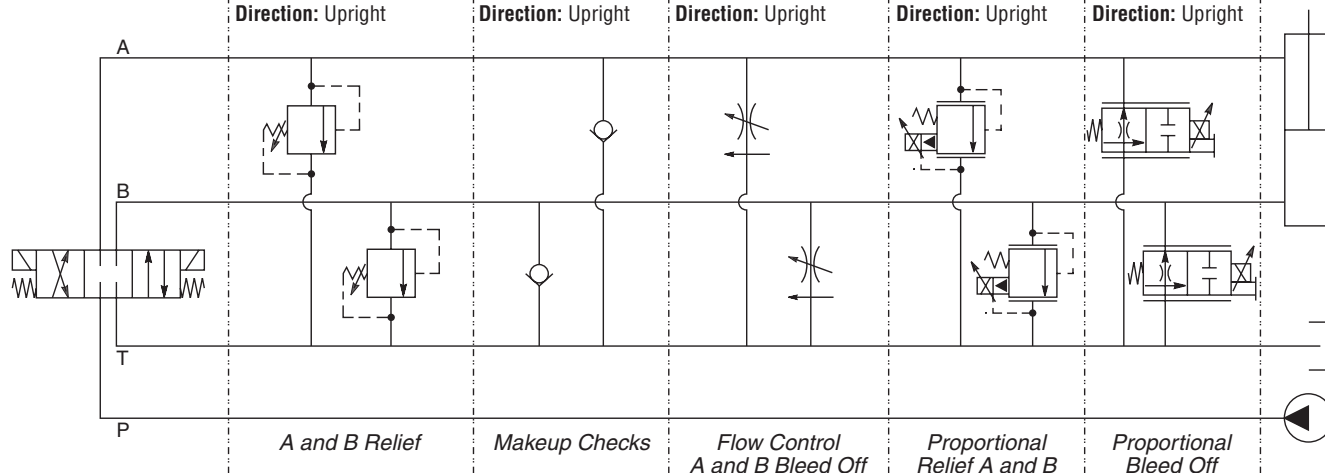
Direction: Upright

Dual Bleed Off
Cavity C and D:
DF102N

Bleed Off on Port A
Cavity C: P10-2
Cavity D: DF102N

Bleed Off on Port B
Cavity C: DF102N
Cavity D: P10-2

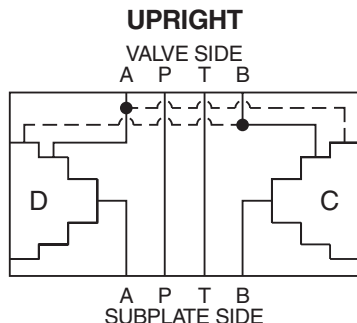
Direction: Upright



General Description

Dual (Ports A and B) Drain to Crossover Port D03 Cartpak Body. For additional information see Technical Tips on pages BC1-BC6.

Body Schematic



Ordering Information

BD03	—	DDX	—		—	
D03 Cartpak Body		Dual (Ports A & B) Drain to Crossover		Plug Seals		Body Material

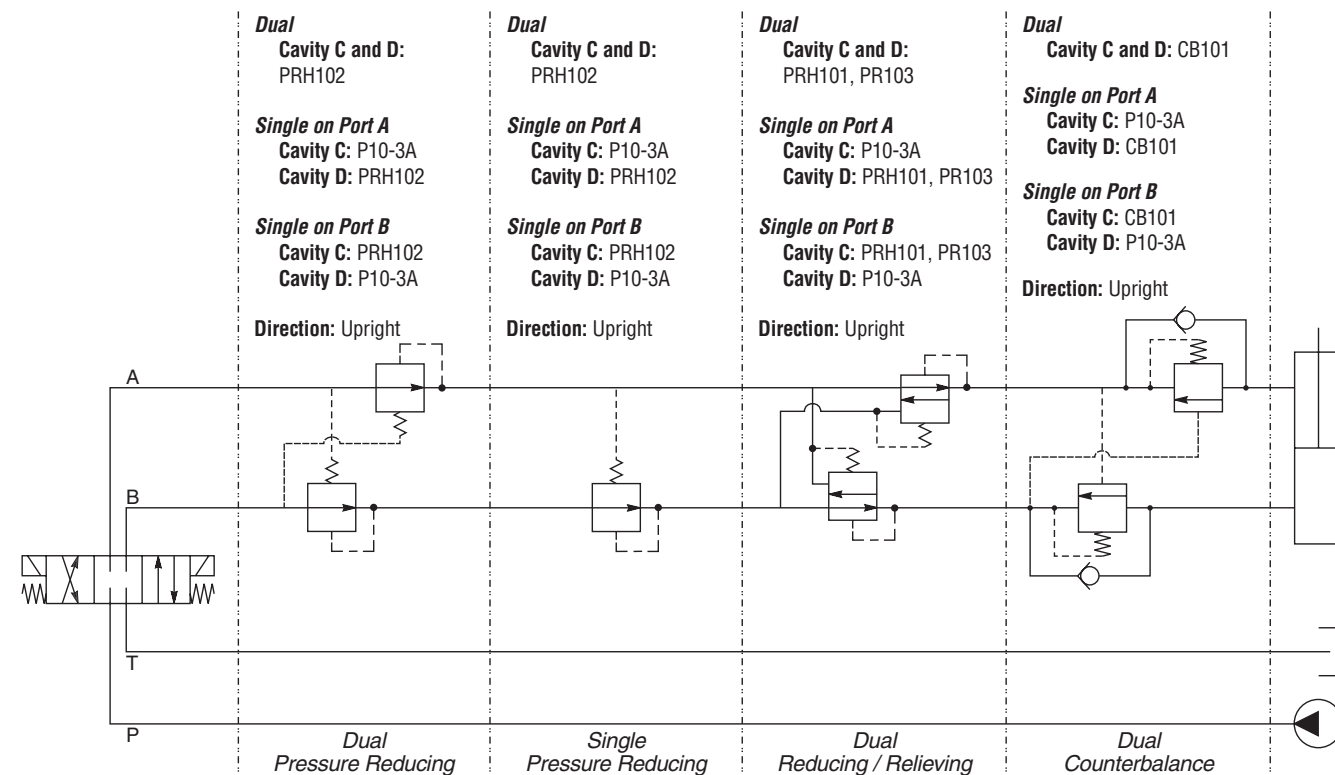
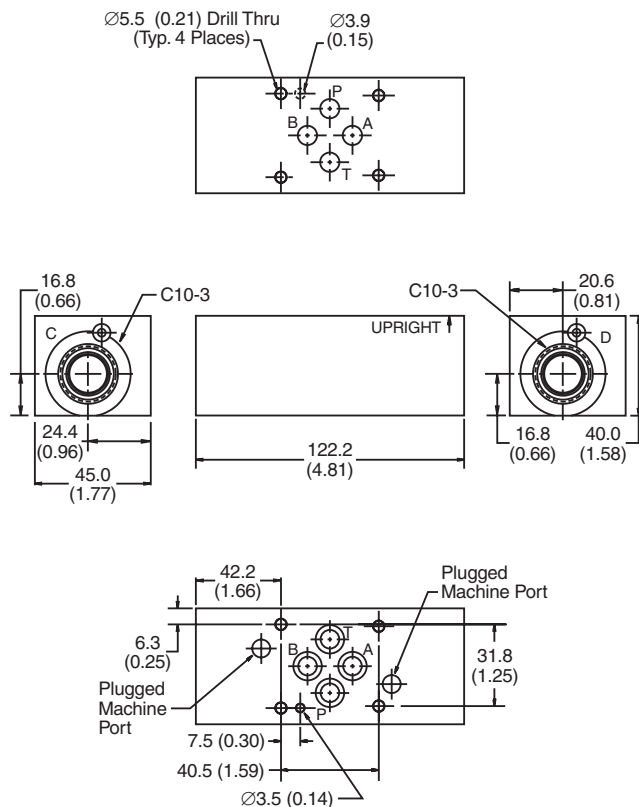
Code	Plug Seals
Omit	Nitrile
V	Fluorocarbon

Code	Body Material
A	Aluminum
S	Steel (Ductile Iron)

Body supplied with:

- O-Rings and Drive Pin

Dimensions



CV

Check
Valves

SH

Shuttle
Valves

LM

Load/Motor
Controls

FC

Flow
Controls

PC

Pressure
Controls

LE

Logic
Elements

DC

Directional
Controls

MV

Manual
Valves

SV

Solenoid
Valves

PV

Proportional
Valves

CE

Coils &
Electronics

BC

Bodies &
Cavities

TD

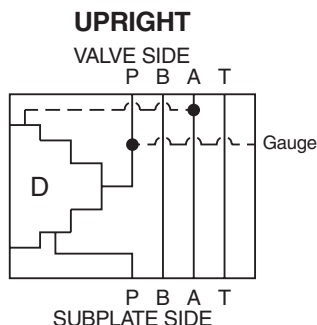
Technical
Data

General Description

B Port Drain to A D03 Cartpak Body.

For additional information see Technical Tips on pages BC1-BC6.

Body Schematic



Ordering Information

BD03	—	BDA	—		—	
D03 Cartpak Body		B Port Drain to A		Plug Seals		Body Material

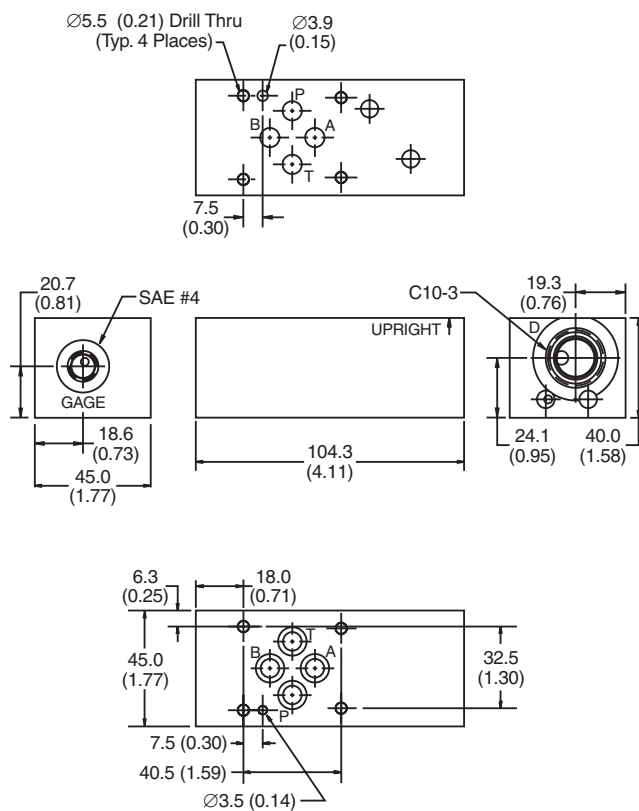
Code	Plug Seals
Omit	Nitrile
V	Fluorocarbon

Code	Body Material
A	Aluminum
S	Steel (Ductile Iron)

Body supplied with:

- Gauge Port Plug Installed
- O-Rings and Drive Pin

Dimensions

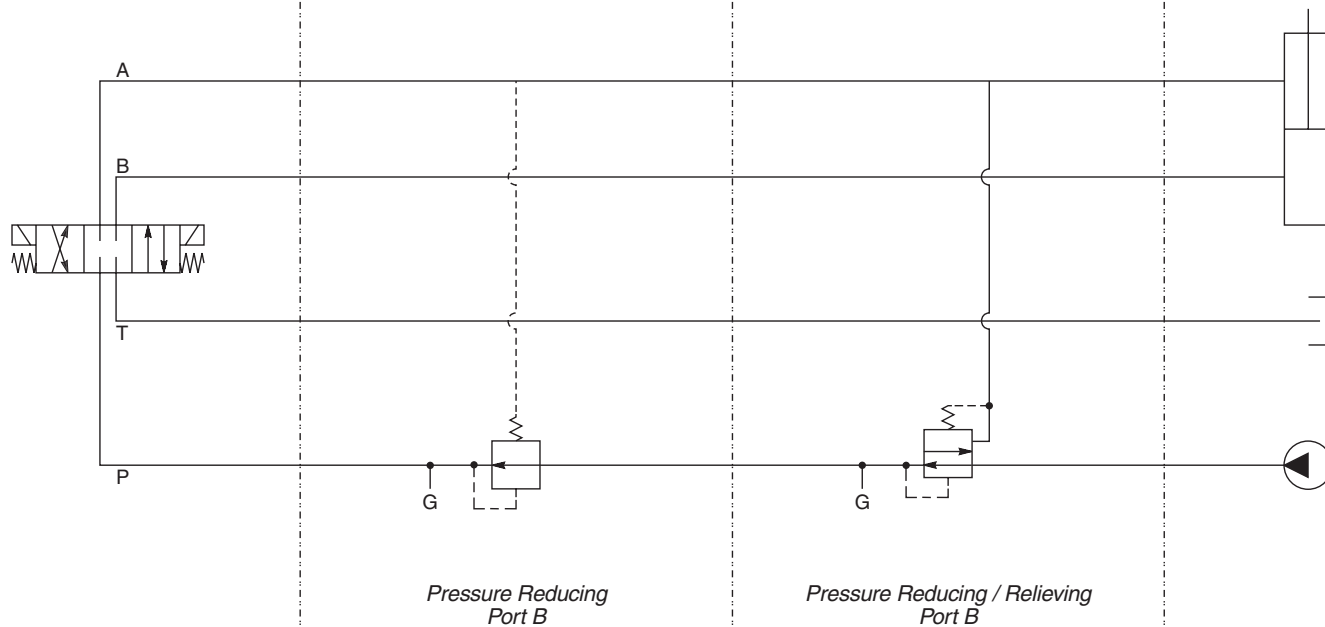
 Millimeters (Inches)

Cavity D: PRH102

Direction: Upright

Cavity D: PRH101
PR103

Direction: Upright

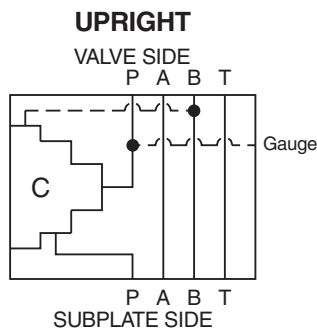


General Description

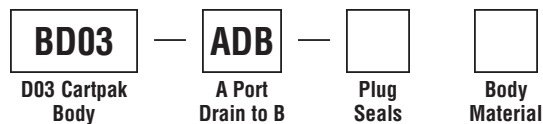
A Port Drain to B D03 Cartpak Body.

For additional information see Technical Tips on pages BC1-BC6.

Body Schematic



Ordering Information



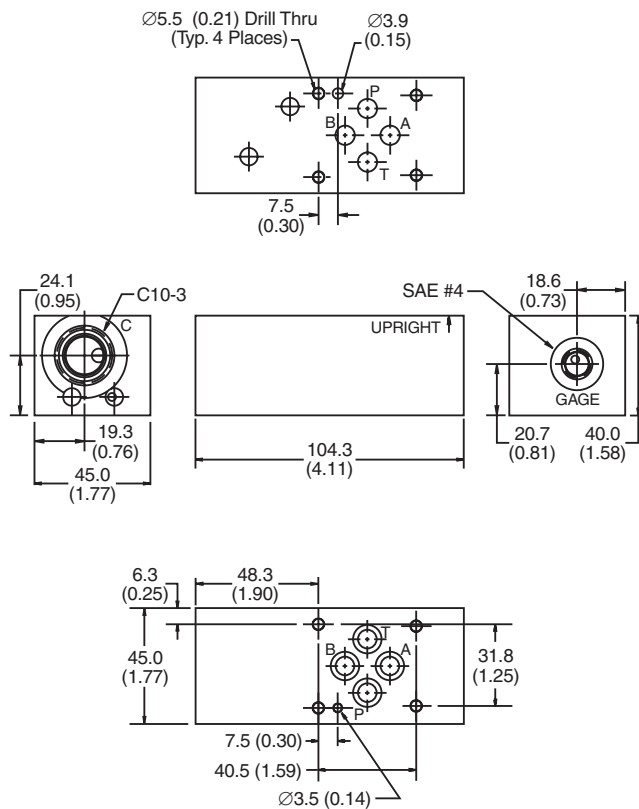
Code	Plug Seals
Omit	Nitrile
V	Fluorocarbon

Code	Body Material
A	Aluminum
S	Steel (Ductile Iron)

Body supplied with:

- Gage Port Plug Installed
- O-Rings and Drive Pin

Dimensions Millimeters (Inches)

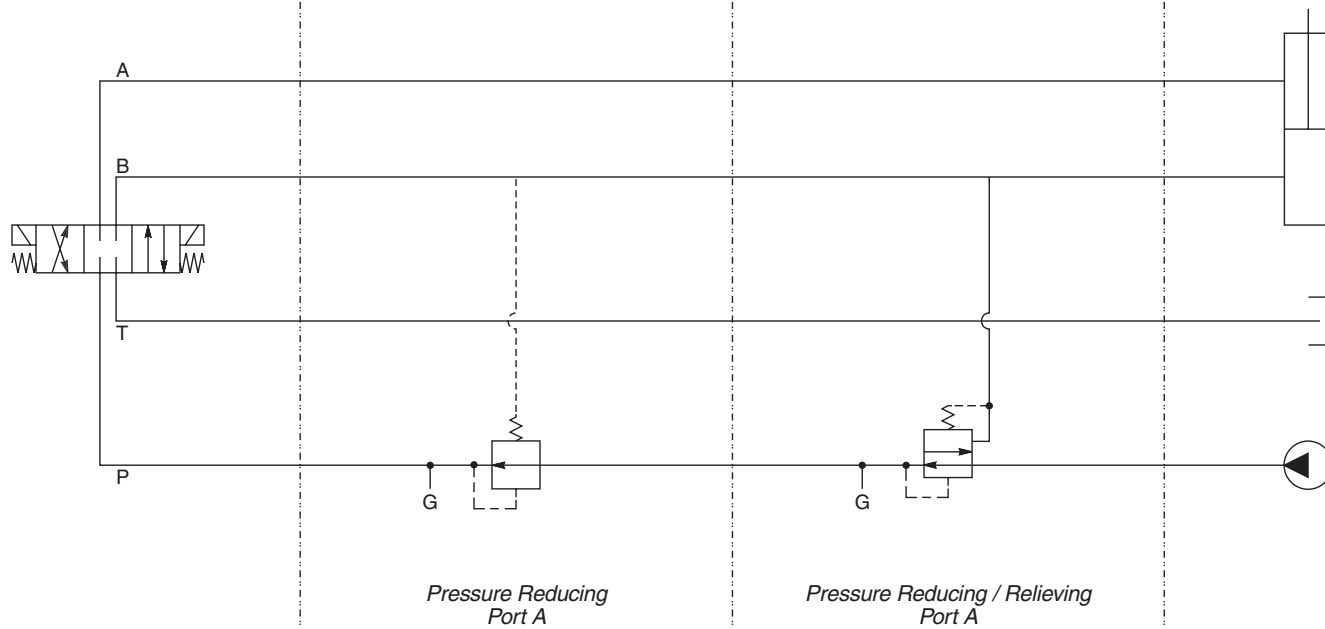


Cavity C: PRH102

Direction: Upright

Cavity C: PRH101
PR103

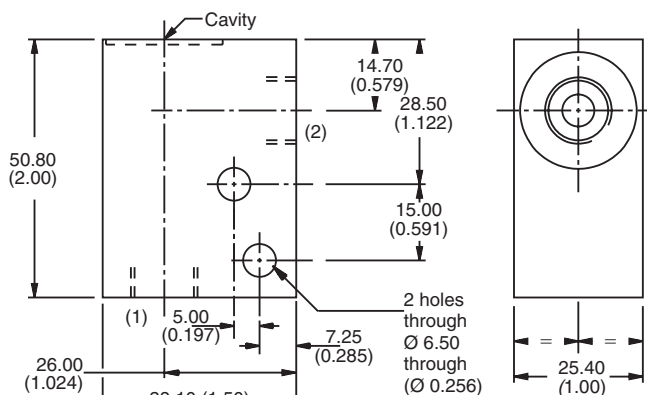
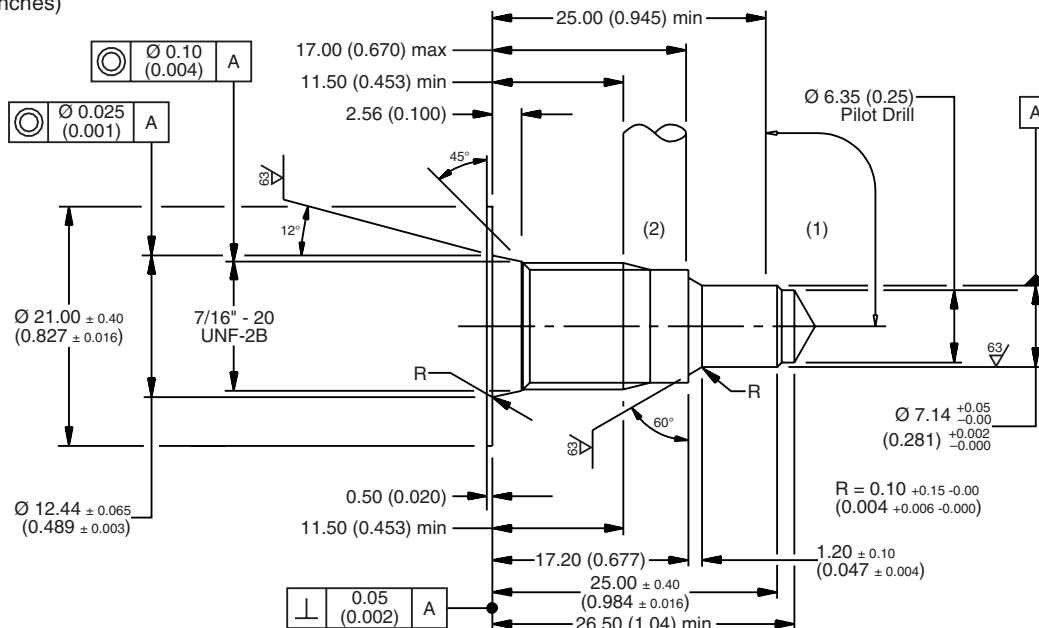
Direction: Upright



For additional information see Technical Tips on pages BC1-BC6.

Dimensions

Millimeters (Inches)



Ordering Information

LB10		
Line Body	Port Size	Body Material

Code	Port Size
795	1/4 SAE
796	1/4 BSP

Code	Body Material
A	Aluminum
S	Steel

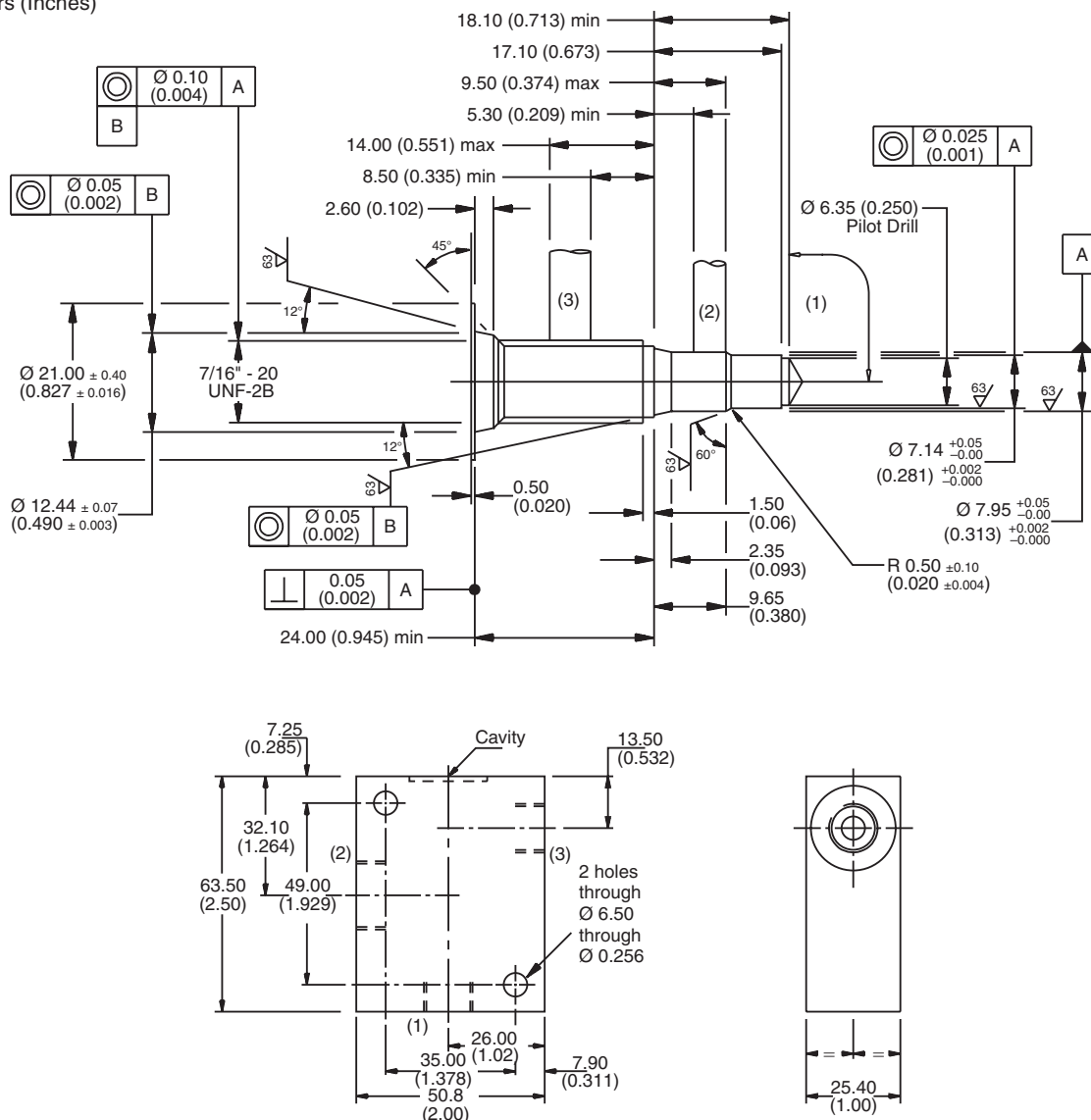
Cavity Tooling For CAV0W-2

Pilot Drill Ø	6.35 (0.25)
Step Drill	8DS31369
Reamer (Alum)	8RM31082A
Reamer (Steel)	8RM31082S
Counterbore	—
Tap	8TP31221

For additional information see Technical Tips on pages BC1-BC6.

Dimensions

Millimeters (Inches)



Ordering Information

LB10		
Line Body	Port Size	Body Material

Code	Port Size
815	1/4 SAE
816	1/4 BSP

Code	Body Material
A	Aluminum
S	Steel

Cavity Tooling For CAVSW-3

Pilot Drill Ø	6.35 (0.25)
Step Drill	8DS31378
Reamer (Alum)	8RM31086A
Reamer (Steel)	8RM31086S
Counterbore	—
Tap	8TP31221

CV

Check
Valves

SH

Shuttle
Valves

LM

Load/Motor
Controls

FC

Flow
Controls

PC

Pressure
Controls

LE

Logic
Elements

DC

Directional
Controls

MV

Manual
Valves

SV

Solenoid
Valves

PV

Proportional
Valves

CE

Coils &
Electronics

BC

Bodies &
Cavities

TD

Technical
Data

Technical Information

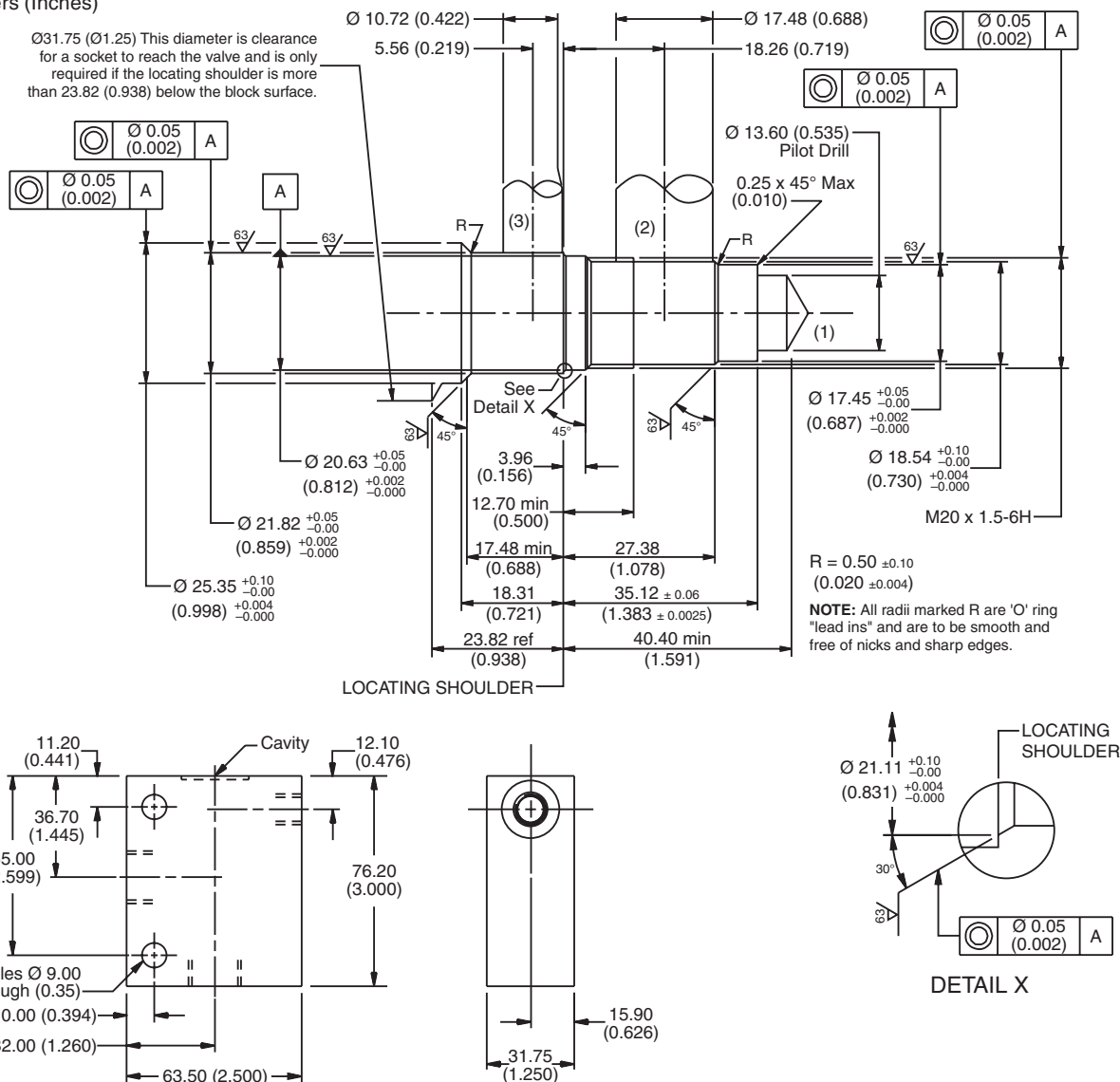
CAVT11A, 3-Way

For additional information see Technical Tips on pages BC1-BC6.

Dimensions

Millimeters (Inches)

Ø31.75 (Ø1.25) This diameter is clearance for a socket to reach the valve and is only required if the locating shoulder is more than 23.82 (0.938) below the block surface.



Ordering Information

LB10		
Line Body	Port Size	Body Material

Code	Port Size
825	1/2 SAE (Main) 1/4 SAE (Aux.)
826	1/2 BSP (Main) 1/4 BSP (Aux.)

Code	Body Material
A	Aluminum
S	Steel

Cavity Tooling For CAVT11A

Pilot Drill Ø	13.60 (0.535)
Step Drill	8DS31387
Reamer (Alum)	8RM31095A
Reamer (Steel)	8RM31095S
Counterbore	—
Tap	8TP31209

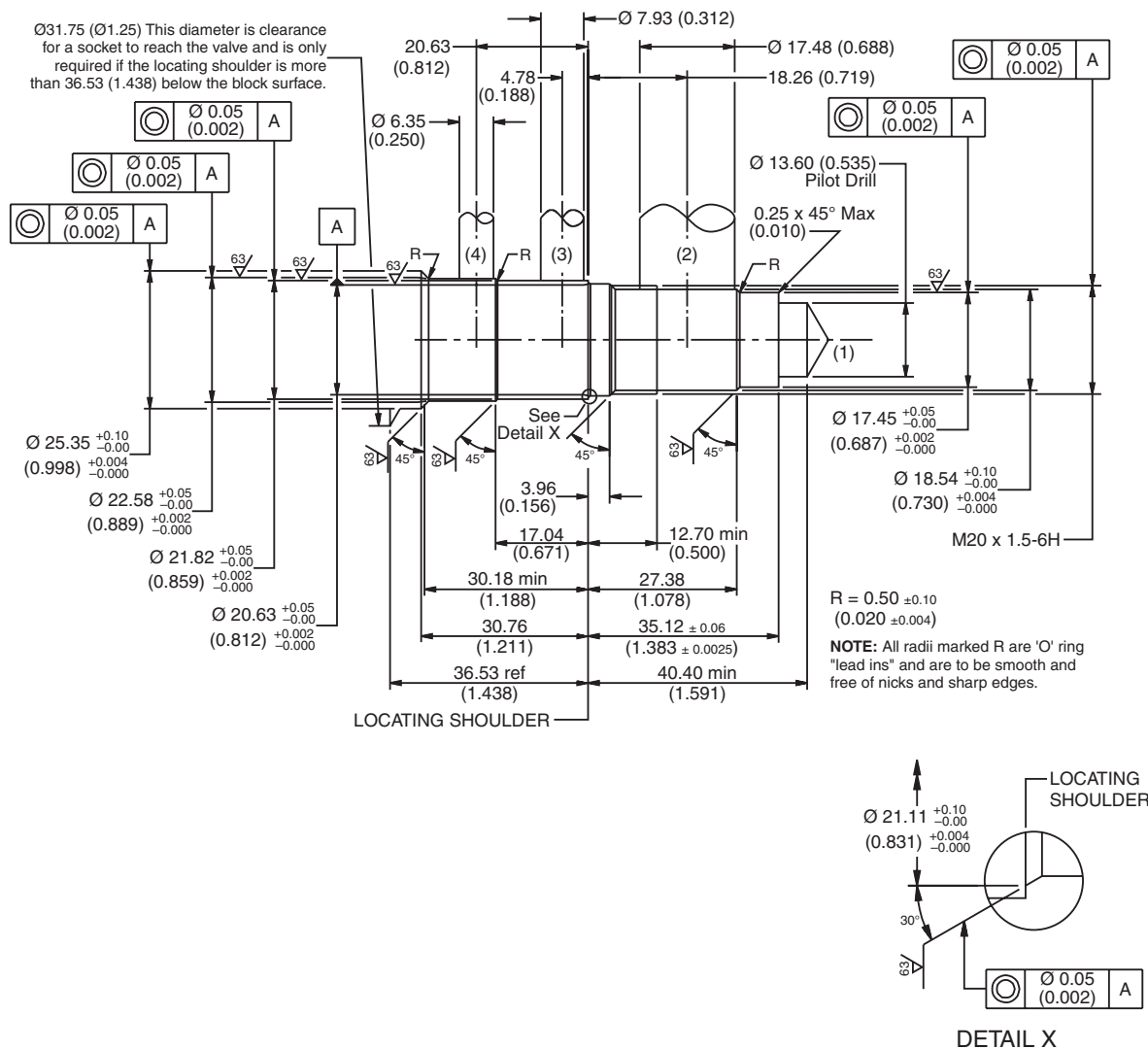
Technical Information

CAVT21A, 4-Way

For additional information see Technical Tips on pages BC1-BC6.

Dimensions

Millimeters (Inches)



Ordering Information

LB10

**Line
Body**

1

Port
Size

7

Body Material

Code	Port Size
830	1/2 SAE (Main) 3/8 + 1/4 SAE (Aux.)
831	1/2 BSP (Main) 3/8 + 1/4 BSP (Aux.)

Code	Body Material
A	Aluminum
S	Steel

Cavity Tooling For CAVT11A

Pilot Drill Ø	13.60 (0.535)
Step Drill	8DS31388
Reamer (Alum)	8RM31096A
Reamer (Steel)	8RM31096S
Counterbore	—
Tap	8TP31209

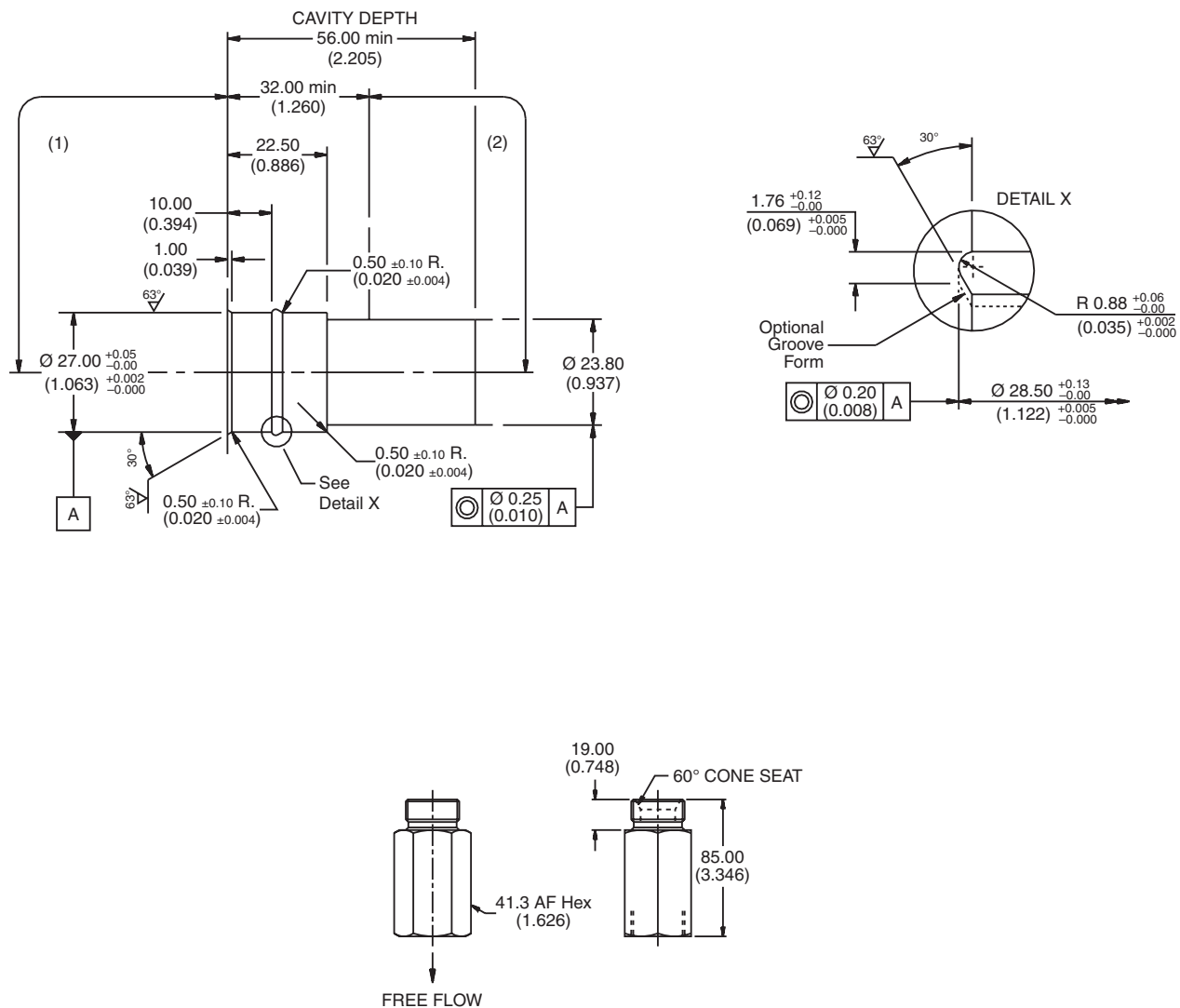
Technical Information

2C, 2-Way

For additional information see Technical Tips on pages BC1-BC6.

Dimensions

Millimeters (Inches)



Ordering Information

LB10

**Line
Body**

Port
Size

**Body
Material**

Code	Port Size
210	1 BSP
212	1 SAE

Code	Body Material
A	Aluminum
S	Steel

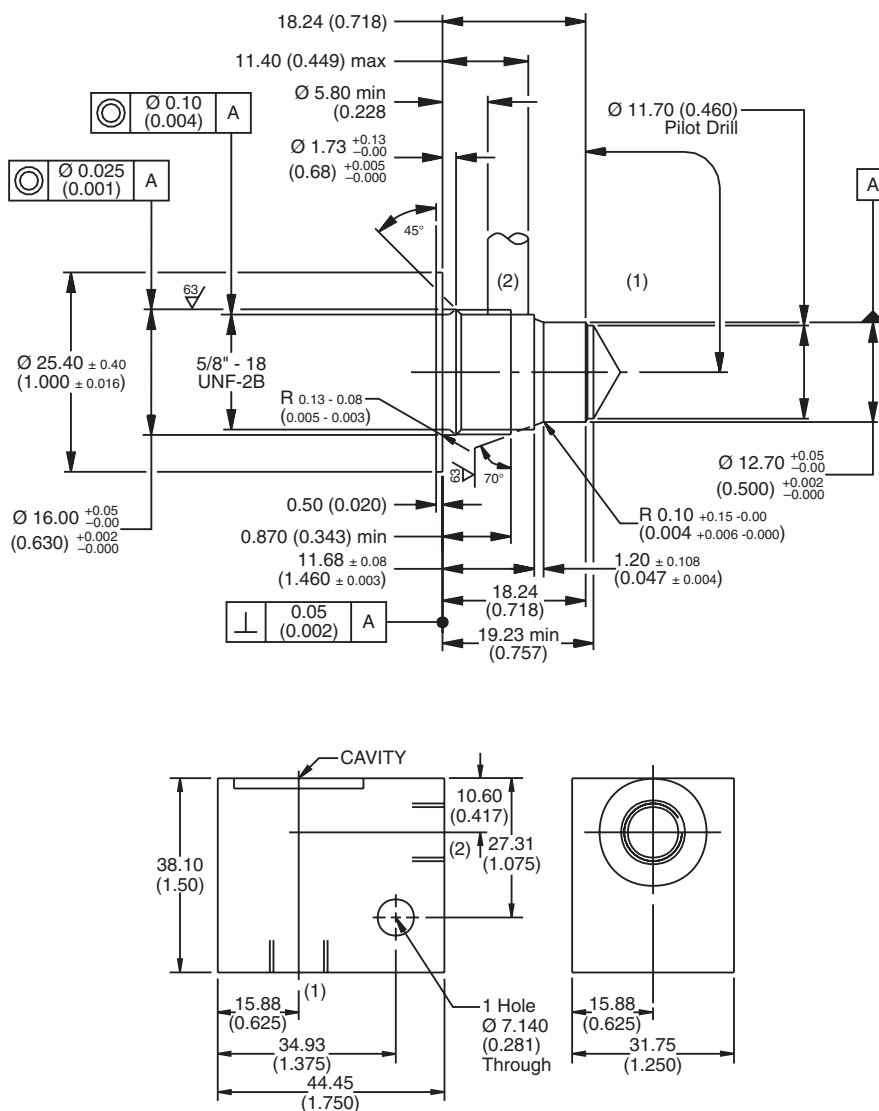
Cavity Tooling For 2C

Pilot Drill Ø	—
Step Drill	—
Reamer (Alum)	—
Reamer (Steel)	—
Counterbore	—
Tap	—

For additional information see Technical Tips on pages BC1-BC6.

Dimensions

Millimeters (Inches)



Ordering Information

LB10		
Line Body	Port Size	Body Material

Code	Port Size
324	1/4 SAE
325	1/4 BSP

Code	Body Material
A	Aluminum
S	Steel

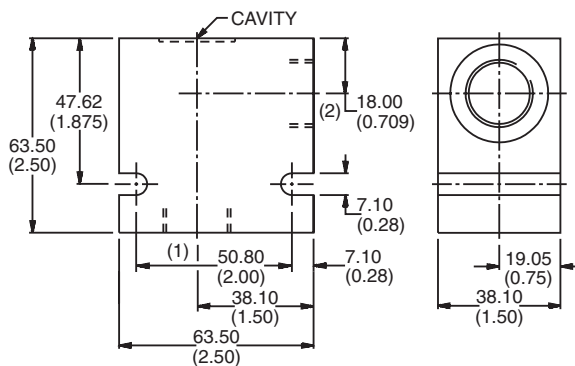
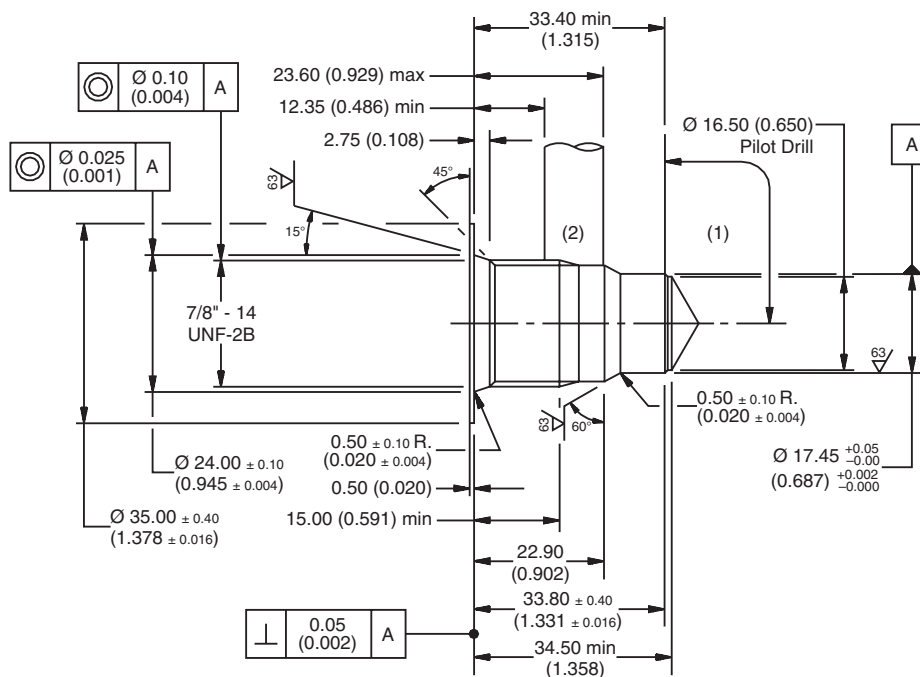
Cavity Tooling For 2G

Pilot Drill $\varnothing$	11.70 (0.46)
Step Drill	8DS31384
Reamer (Alum)	8RM31092A
Reamer (Steel)	8RM31092S
Counterbore	—
Tap	8TP31223

For additional information see Technical Tips on pages BC1-BC6.

Dimensions

Millimeters (Inches)



Ordering Information

LB10

Line
Body



Port
Size



Body
Material

Code	Port Size
543	1/2 SAE
545	1/2 BSP

Code	Body Material
A	Aluminum
S	Steel

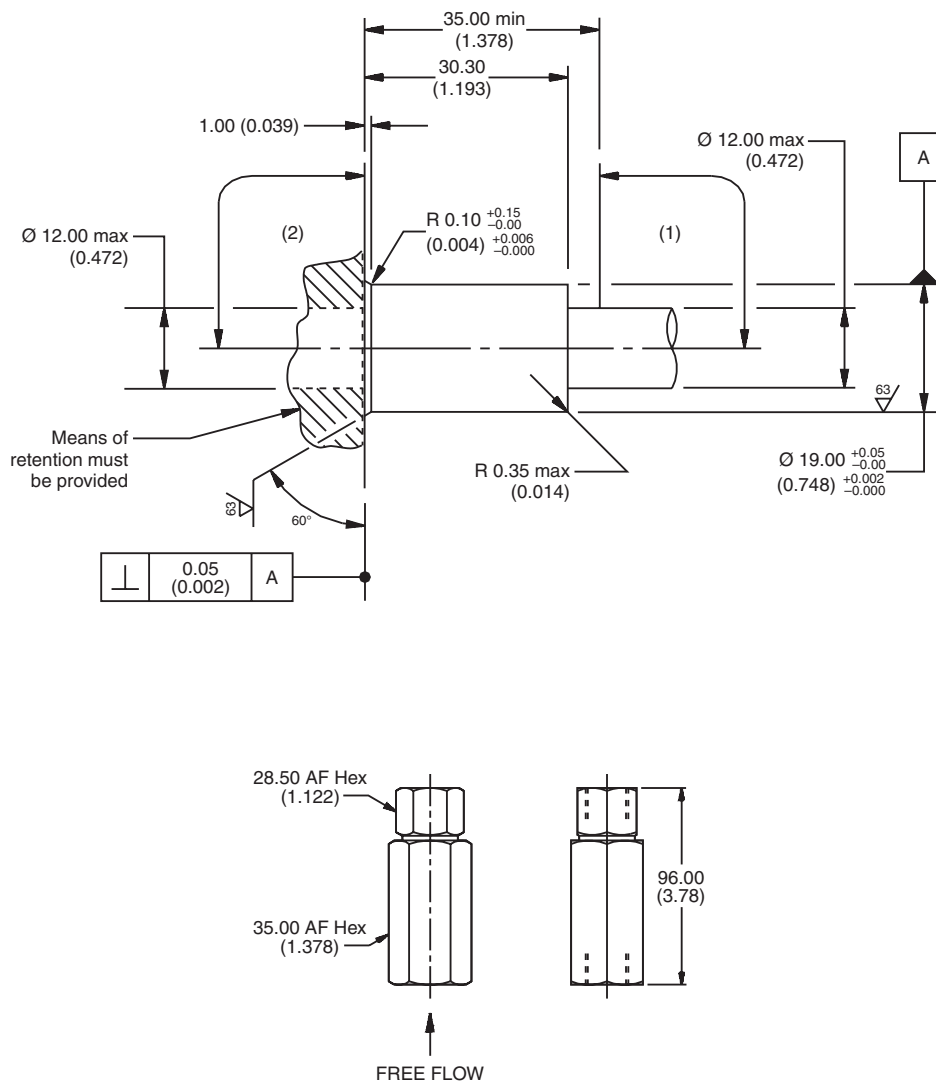
Cavity Tooling For 2R

Pilot Drill Ø
Step Drill
Reamer (Alum)
Reamer (Steel)
Counterbore
Tap

For additional information see Technical Tips on pages BC1-BC6.

Dimensions

Millimeters (Inches)



Ordering Information

Line Body	Port Size	Body Material
LB10		

Code	Port Size
205	1 BSP
220	1 SAE

Code	Body Material
S	Steel

Cavity Tooling For 2U

Pilot Drill $\varnothing$	—
Step Drill	—
Reamer (Alum)	—
Reamer (Steel)	—
Counterbore	—
Tap	—

CV

Check Valves

SH

Shuttle Valves

LM

Load/Motor Controls

FC

Flow Controls

PC

Pressure Controls

LE

Logic Elements

DC

Directional Controls

MV

Manual Valves

SV

Solenoid Valves

PV

Proportional Valves

CE

Coils & Electronics

BC

Bodies & Cavities

TD

Technical Data

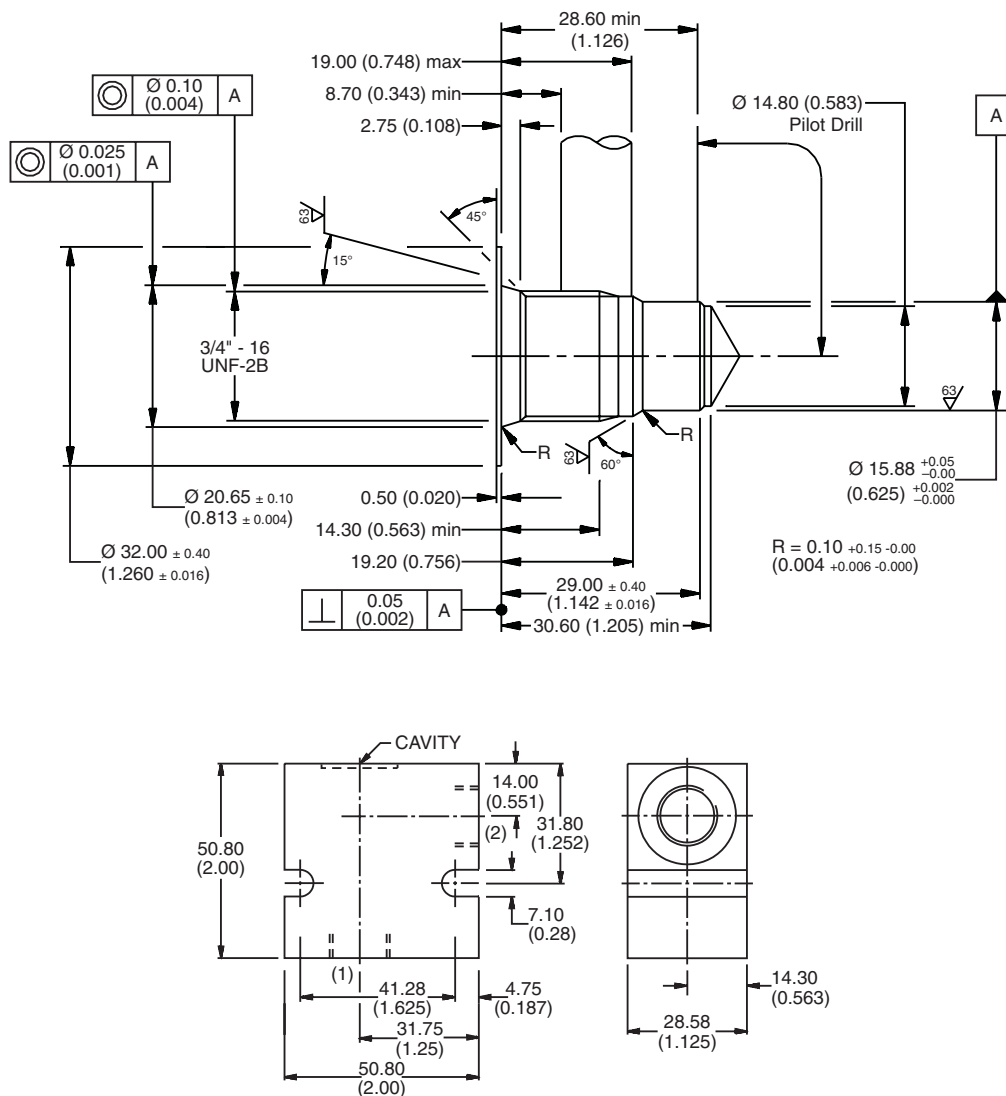
Technical Information

2X, 2-Way

For additional information see Technical Tips on pages BC1-BC6.

Dimensions

Millimeters (Inches)



Ordering Information

LB10

**Line
Body**

Port
Size

**Body
Material**

Code	Port Size
513	3/8 SAE
515	1/4 BSP

Code	Body Material
A	Aluminum
S	Steel

Cavity Tooling For 2X

Pilot Drill Ø	14.80 (0.583)
Step Drill	8DS31344
Reamer (Alum)	8RM31057A
Reamer (Steel)	8RM31057S
Counterbore	—
Tap	8TP31202

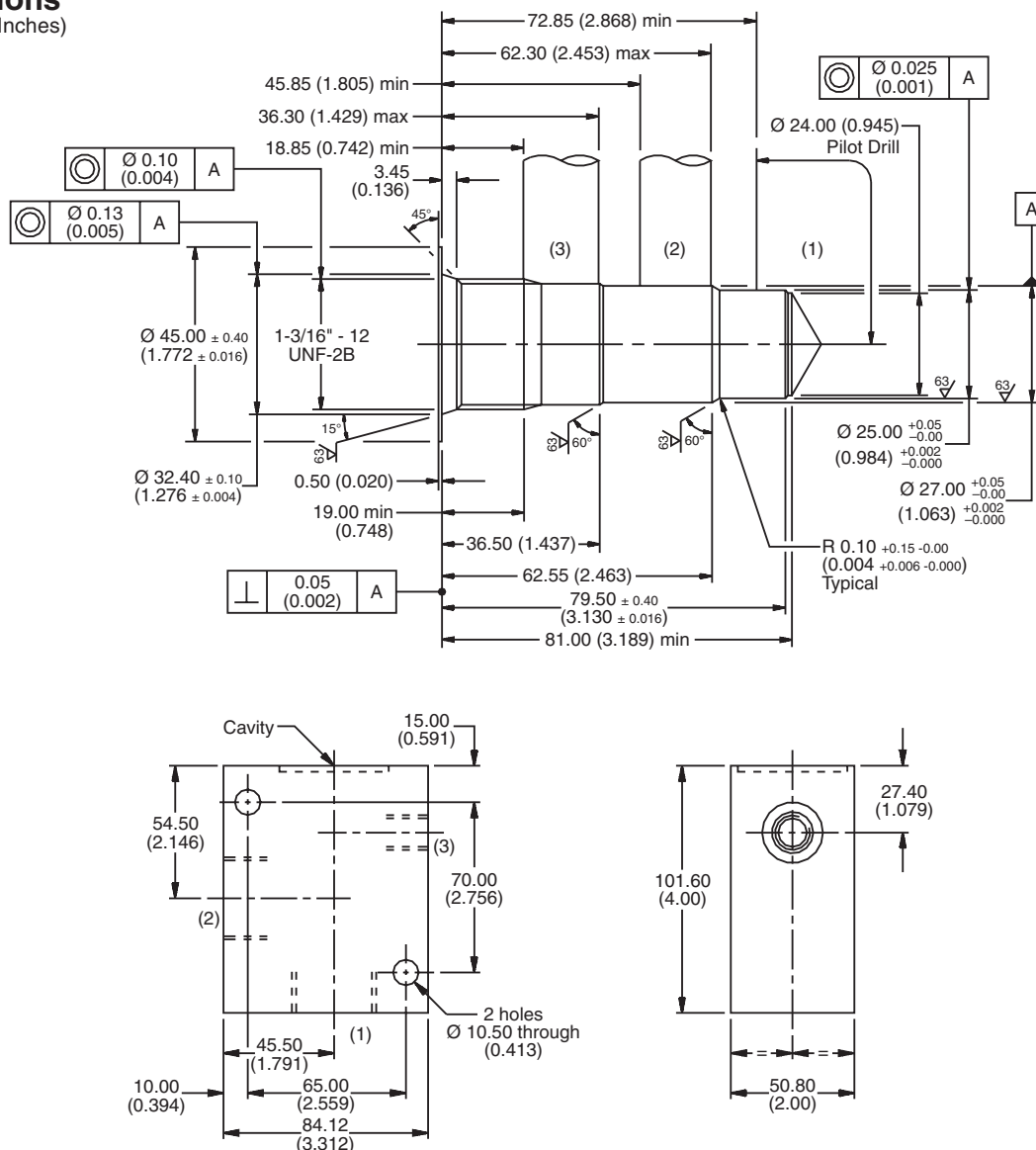
NOTE:

NOTE:
Use parker C09-2 cavity and body.

For additional information see Technical Tips on pages BC1-BC6.

Dimensions

Millimeters (Inches)



Ordering Information

LB10		
Line Body	Port Size	Body Material

Code	Port Size
007	3/4 BSP
066	1 SAE

Code	Body Material
A	Aluminum
S	Steel

Cavity Tooling For 3A

Pilot Drill Ø	24.00 (0.94)
Step Drill	8DS31303
Reamer (Alum)	8RM31003A
Reamer (Steel)	8RM31003S
Counterbore	8CB31100
Tap	8TP31200

CV

Check
Valves

SH

Shuttle
Valves

LM

Load/Motor
Controls

FC

Flow
Controls

PC

Pressure
Controls

LE

Logic
Elements

DC

Directional
Controls

MV

Manual
Valves

SV

Solenoid
Valves

PV

Proportional
Valves

CE

Coils &
Electronics

BC

Bodies &
Cavities

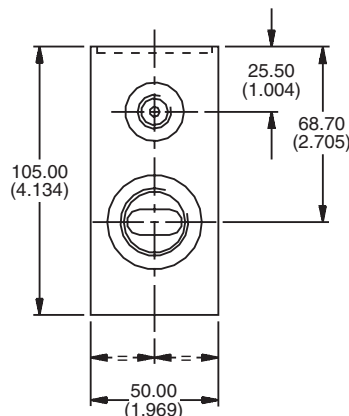
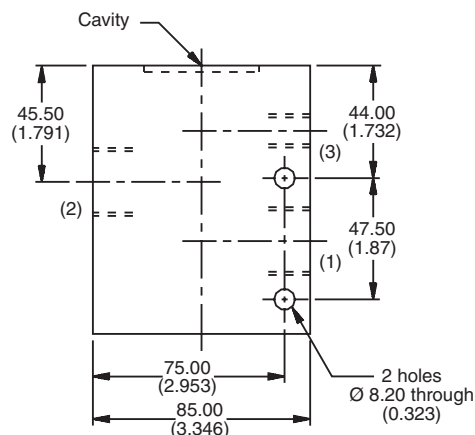
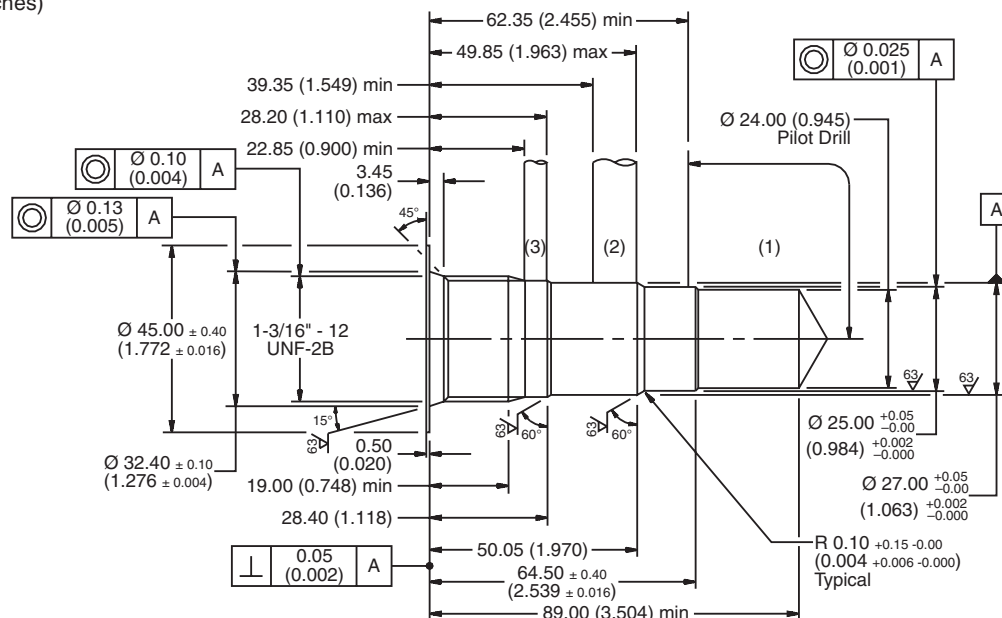
TD

Technical
Data

For additional information see Technical Tips on pages BC1-BC6.

Dimensions

Millimeters (Inches)



Ordering Information

LB10	Port Size	Body Material
Line Body	Port Size	Body Material

Code	Port Size
039	3/4 BSP (Main) 1/4 BSP (Aux.)
069	1 SAE (Main) 1/4 SAE (Aux.)
034	3/4 BSP Dual Cavity
234	3/4 SAE Dual Cavity

Code	Body Material
A	Aluminum
S	Steel

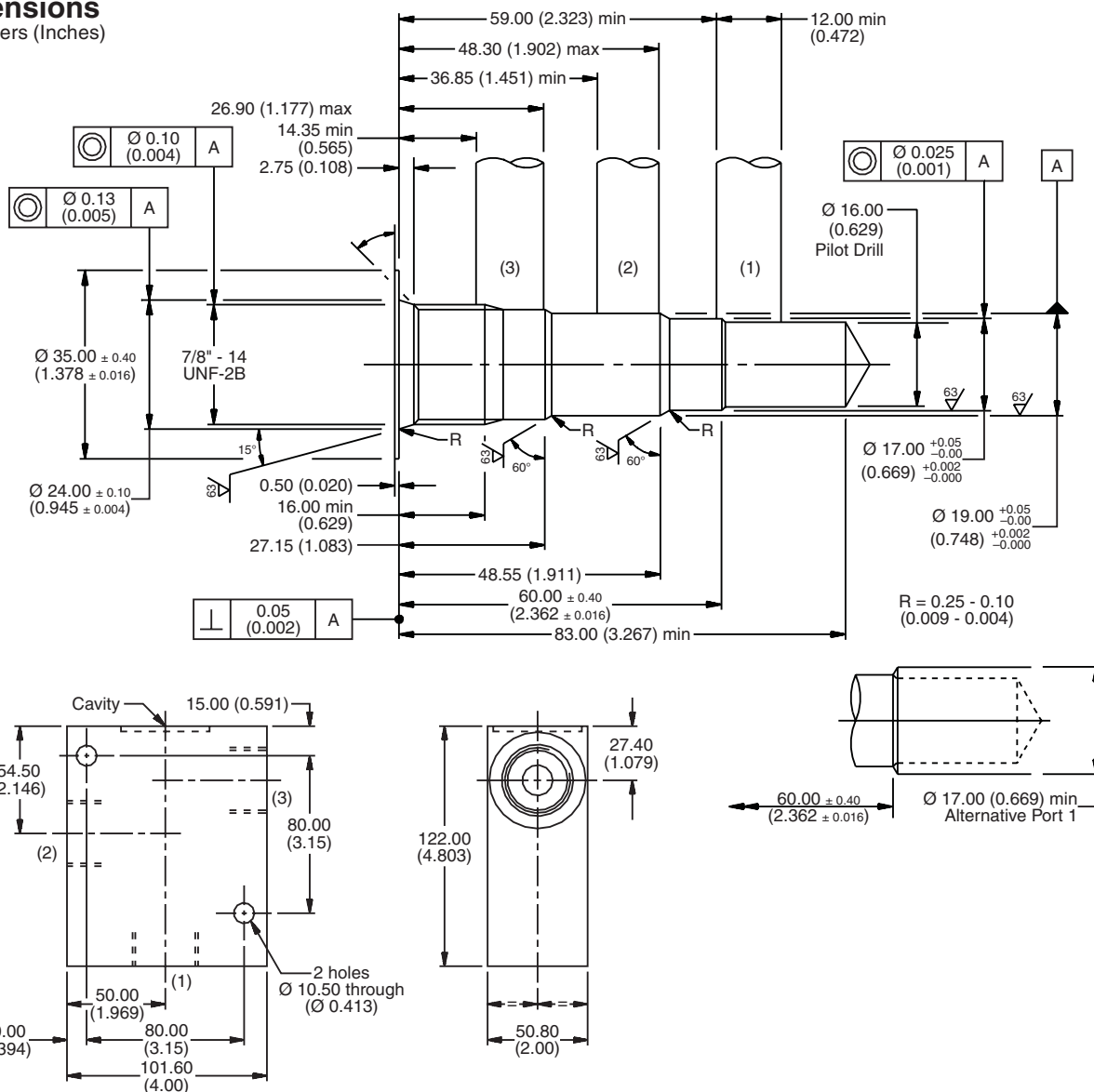
Cavity Tooling For 3C

Pilot Drill $\varnothing$	24.00 (0.94)
Step Drill	8DS31305
Reamer (Alum)	8RM31005A
Reamer (Steel)	8RM31005S
Counterbore	8CB31100
Tap	8TP31200

For additional information see Technical Tips on pages BC1-BC6.

Dimensions

Millimeters (Inches)



Ordering Information

Line Body	Port Size	Body Material
LB10		

Code	Port Size
092	3/4 BSP
093	1 SAE

Code	Body Material
A	Aluminum
S	Steel

Cavity Tooling For 3J

Pilot Drill $\varnothing$
 Step Drill
 Reamer (Alum)
 Reamer (Steel)
 Counterbore
 Tap

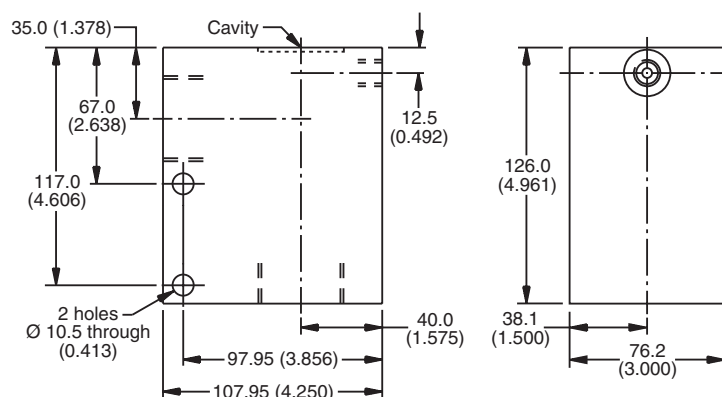
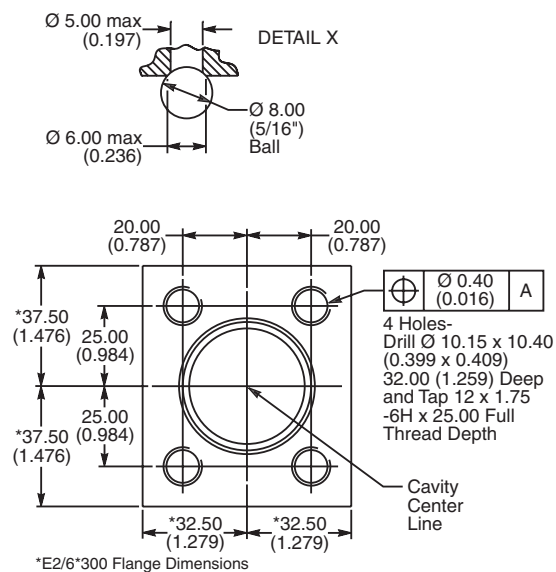
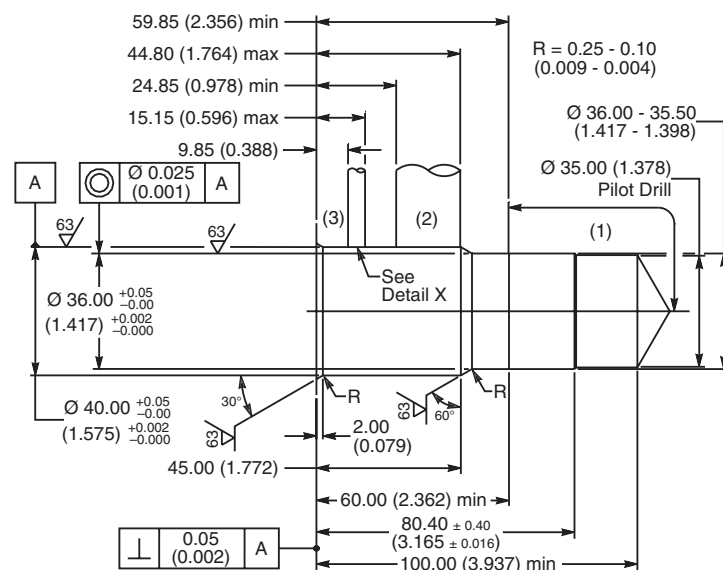
Technical Information

3K, 3-Way

For additional information see Technical Tips on pages BC1-BC6.

Dimensions

Millimeters (Inches)



Ordering Information

LB10

**Line
Body**

1

Port
Size

7

**Body
Material**

Code	Port Size
089	1-1/4 BSP (Main) 1/4 BSP (Aux)

Code	Body Material
A	Aluminum
S	Steel

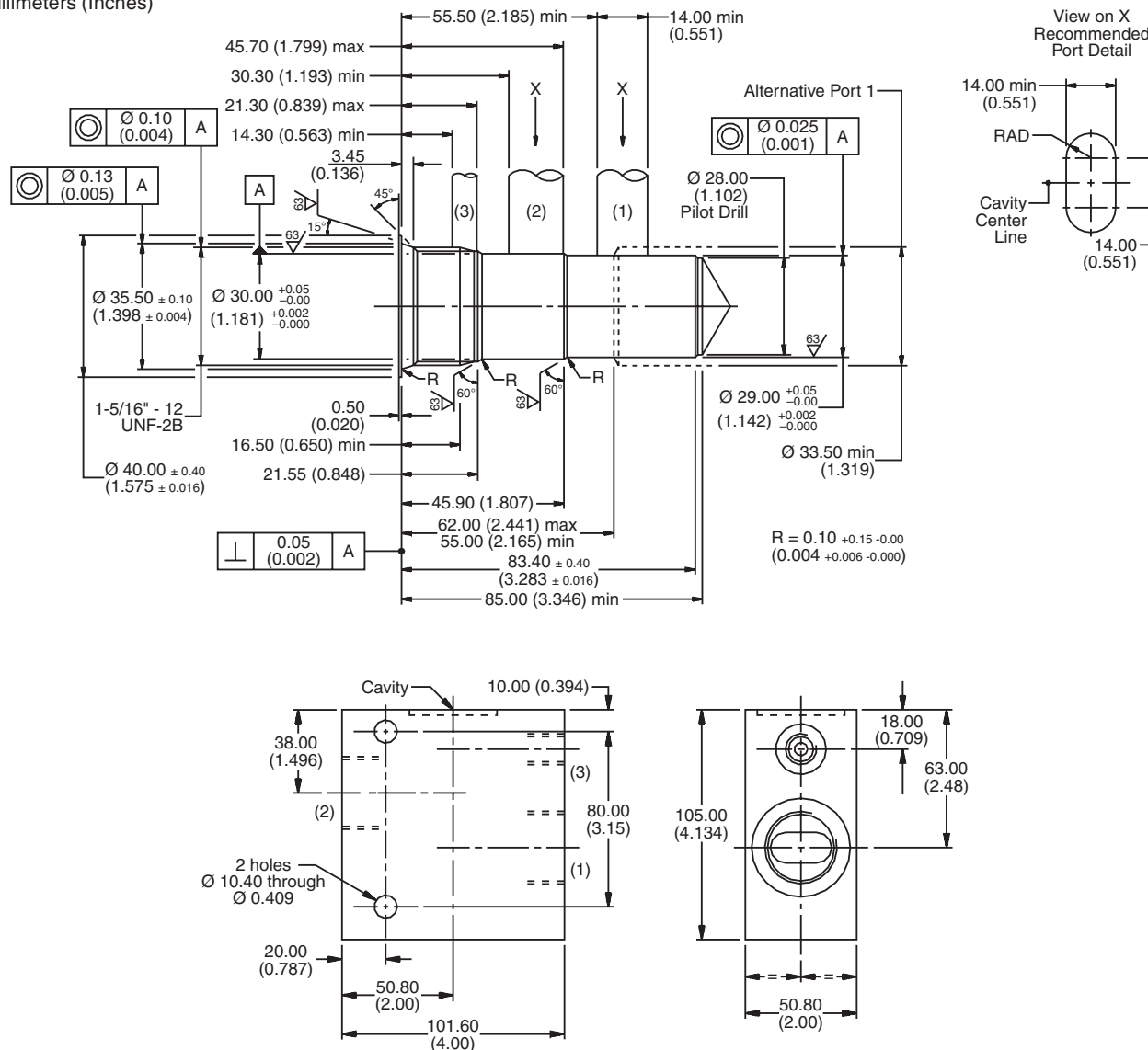
Cavity Tooling For 3K

Pilot Drill Ø	35.00 (1.38)
Step Drill	8DS31310
Reamer (Alum)	8RM31010A
Reamer (Steel)	8RM31010S
Counterbore	—
Tap	8TP31215

For additional information see Technical Tips on pages BC1-BC6.

Dimensions

Millimeters (Inches)



Ordering Information

LB10		
Line	Port	Body
Body	Size	Material

Code	Port Size
076	1 BSP (Main) 1/4 BSP (Aux.)
078	1 SAE (Main) 1/4 SAE (Aux.)
104	1 BSP Dual Cavity
105	1 SAE Dual Cavity

Code	Body Material
A	Aluminum
S	Steel

Cavity Tooling For 3M	
Pilot Drill Ø	28.00 (1.10)
Step Drill	8DS31311
Reamer (Alum)	8RM31011A
Reamer (Steel)	8RM31011S
Counterbore	8CB31103
Tap	8TP31203

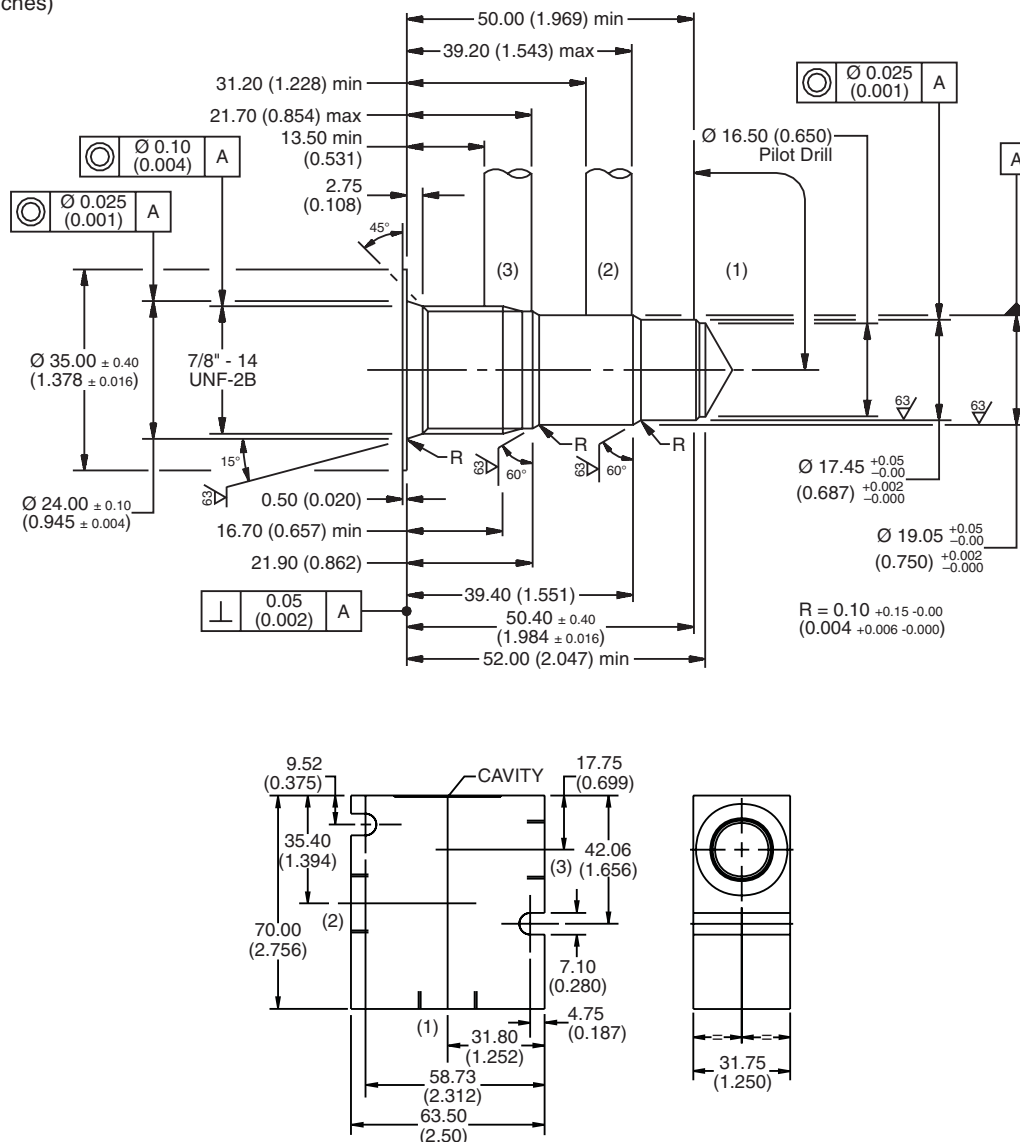
Technical Information

3X, 3-Way

For additional information see Technical Tips on pages BC1-BC6.

Dimensions

Millimeters (Inches)



Ordering Information

LB10

**Line
Body**

Port
Size

Body Material

Code	Port Size
553	1/2 SAE
554	3/8 BSP

Code	Body Material
A	Aluminum
S	Steel

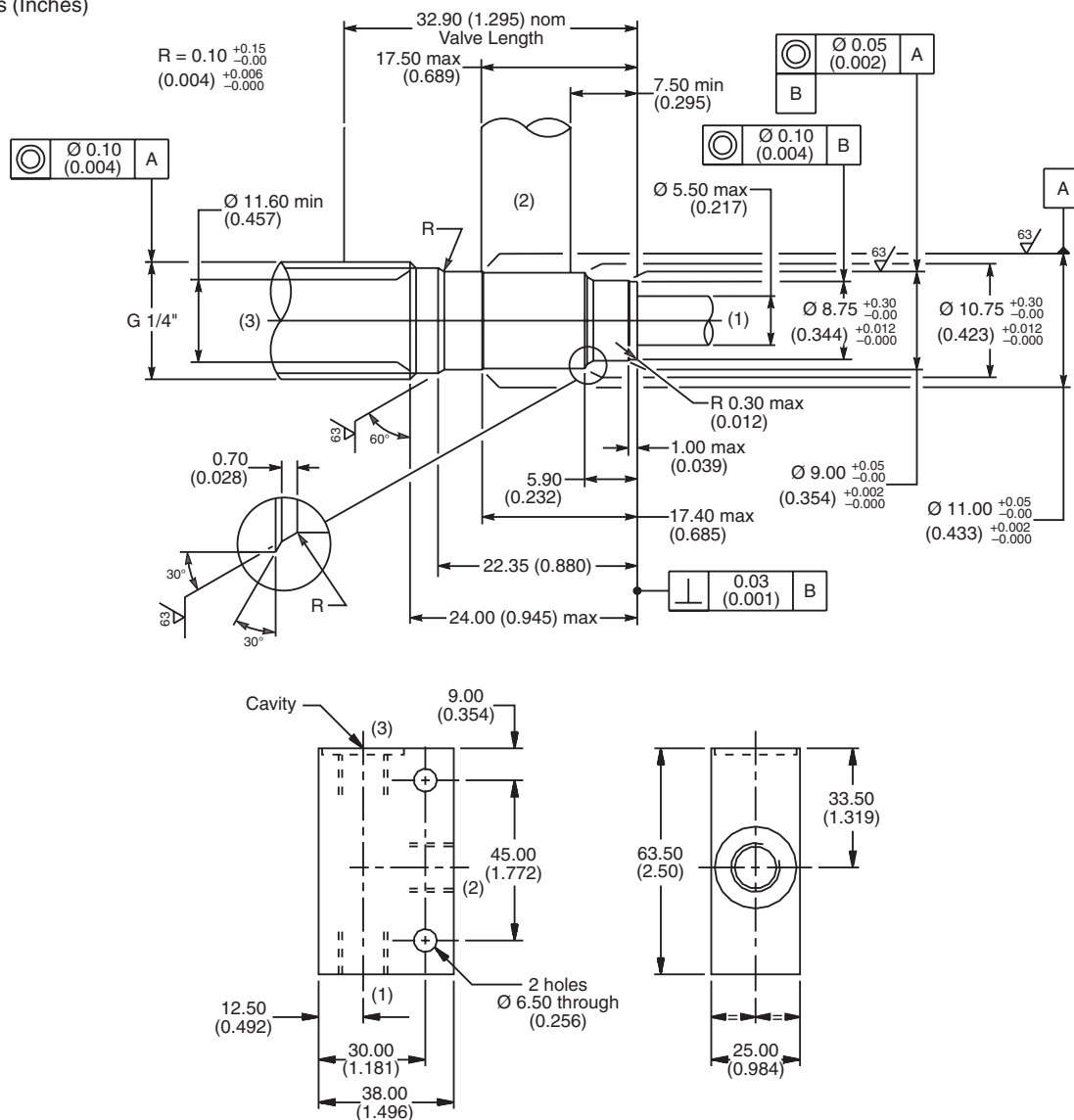
Cavity Tooling For 3X

Pilot Drill Ø	16.50 (0.650)
Step Drill	8DS31343
Reamer (Alum)	8RM31062A
Reamer (Steel)	8RM31062S
Counterbore	—
Tap	8TP31201

For additional information see Technical Tips on pages BC1-BC6.

Dimensions

Millimeters (Inches)



Ordering Information

LB10		
Line Body	Port Size	Body Material

Code	Port Size
313	1/4 BSP
320	1/4 SAE

Code	Body Material
A	Aluminum
S	Steel

Cavity Tooling For 3Z

Pilot Drill Ø	8.50 (0.335)
Step Drill	8DS31355
Reamer (Alum)	8RM31055A
Reamer (Steel)	8RM31055S
Counterbore	—
Tap	8TP31219

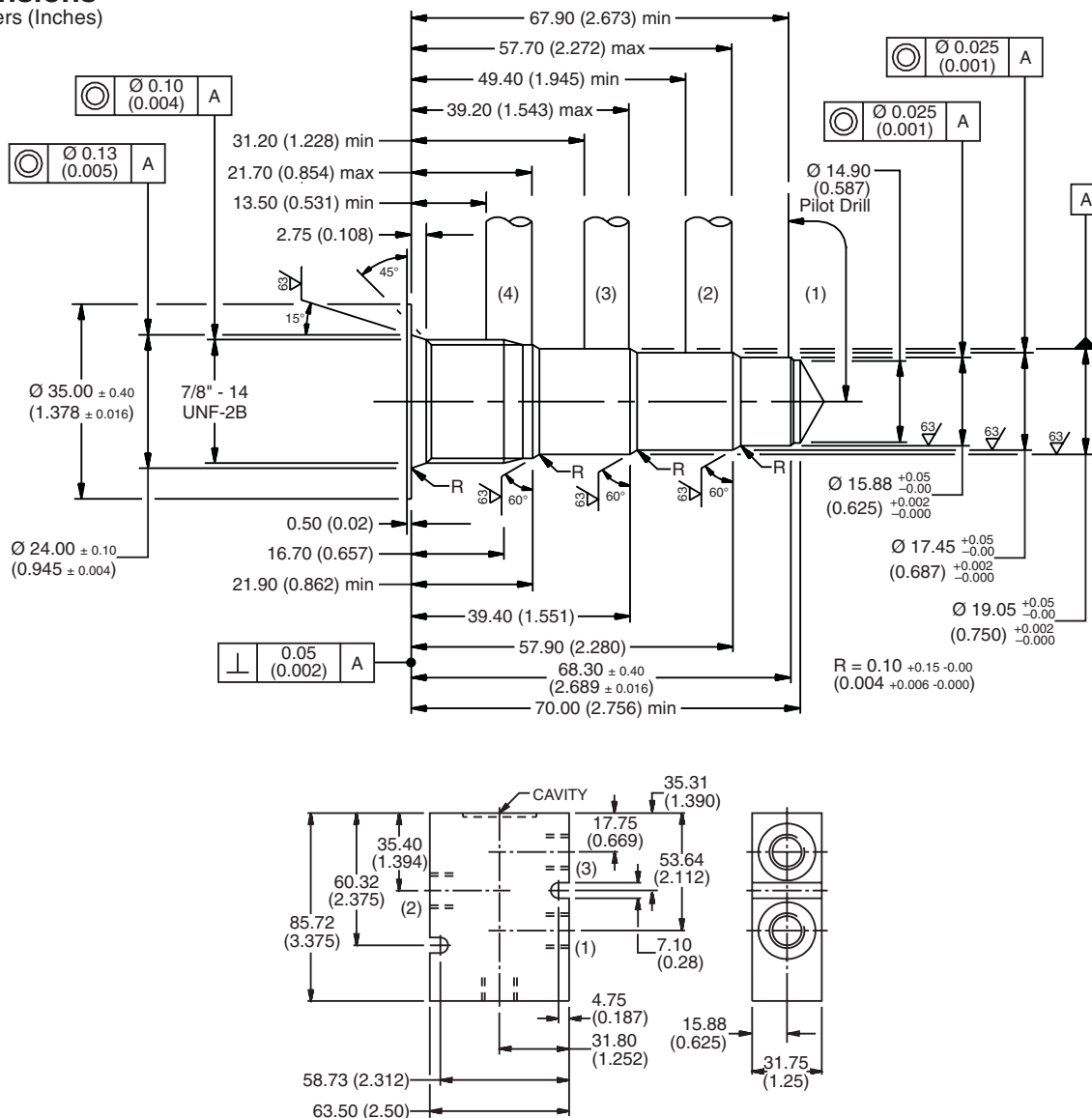
Technical Information

4C, 3-Way

For additional information see Technical Tips on pages BC1-BC6.

Dimensions

Millimeters (Inches)



Ordering Information

Line	Port Size	Body Material
LB10		

Code	Port Size
562	1/2 SAE
563	3/8 BSP

Code	Body Material
A	Aluminum
S	Steel

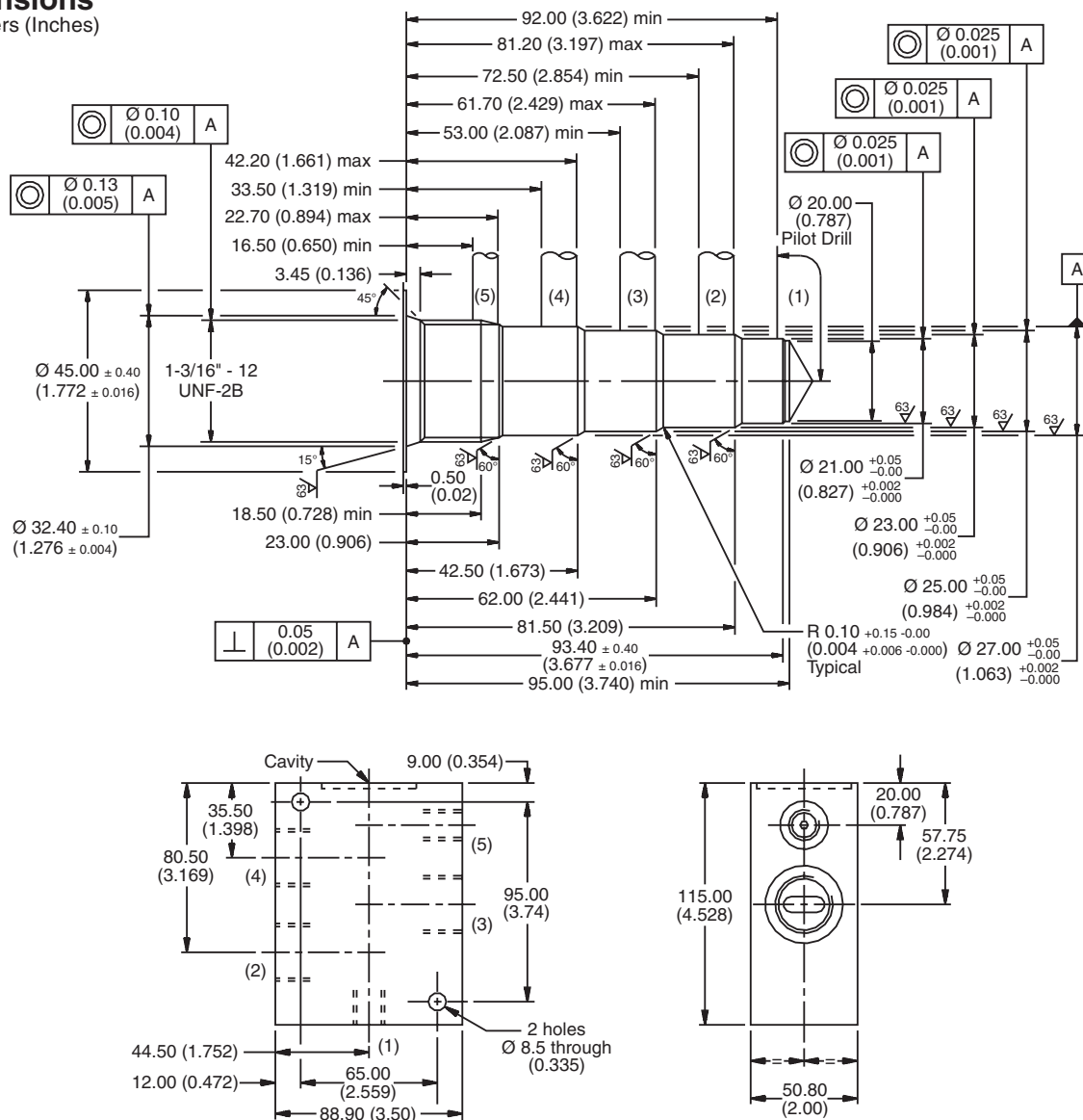
Cavity Tooling For 4C

Pilot Drill $\varnothing$	14.90 (0.587)
Step Drill	8DS31346
Reamer (Alum)	8RM31063A
Reamer (Steel)	8RM31063S
Counterbore	—
Tap	8TP31201

For additional information see Technical Tips on pages BC1-BC6.

Dimensions

Millimeters (Inches)



Ordering Information

Line	Port	Body
LB10	Size	Material

Code	Port Size
314	3/4 BSP (Main) 1/4 BSP (Aux.)
321	3/4 SAE (Main) 1/4 SAE (Aux.)

Code	Body Material
A	Aluminum
S	Steel

Cavity Tooling For 5A	
Pilot Drill $\varnothing$	20.00 (0.78)
Step Drill	8DS31353
Reamer (Alum)	8RM31053A
Reamer (Steel)	8RM31053S
Counterbore	8CB31100
Tap	8TP31200

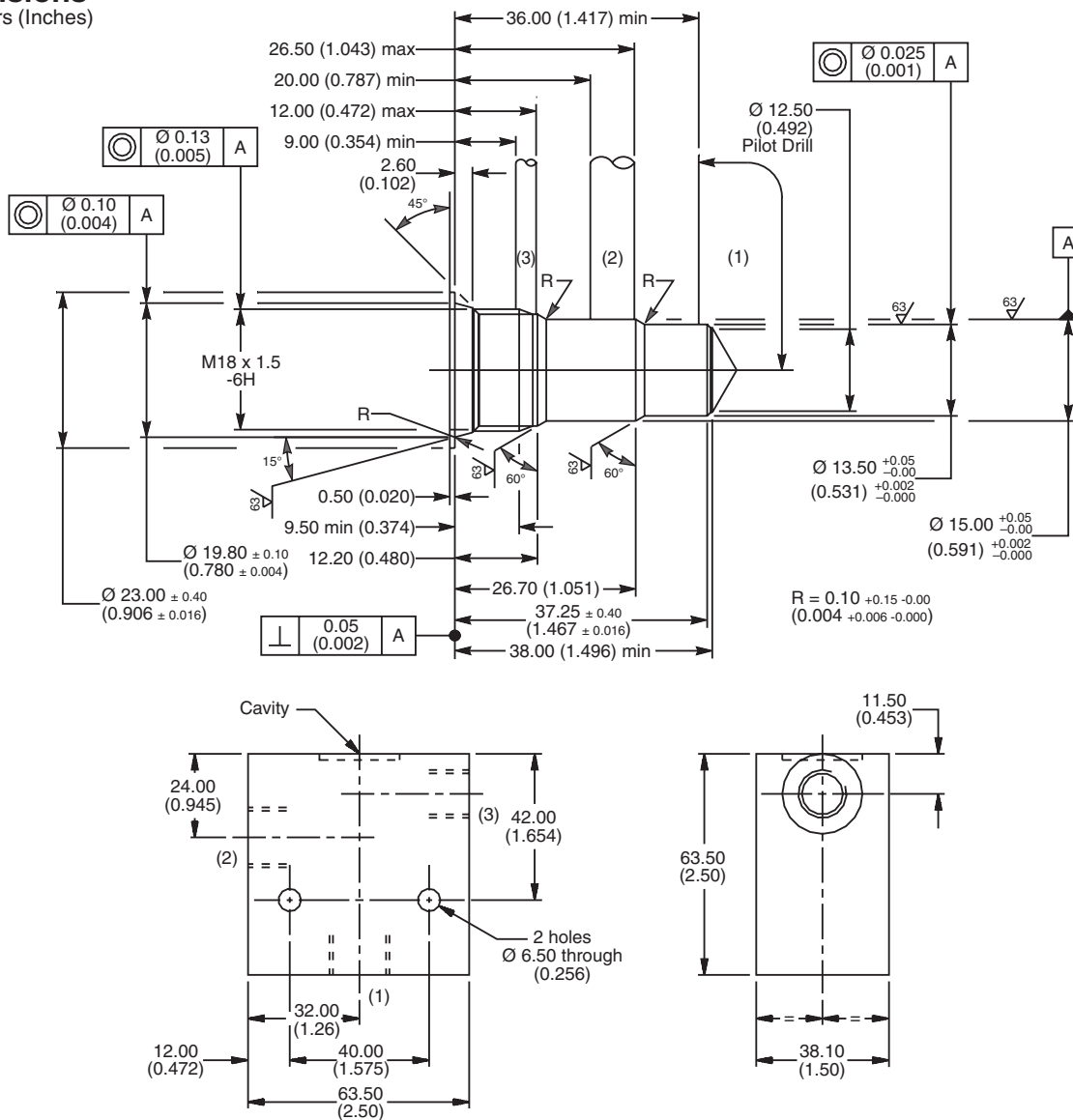
Technical Information

53-1, 3-Way

For additional information see Technical Tips on pages BC1-BC6.

Dimensions

Millimeters (Inches)



Ordering Information

LB10



**Line
Body**

Port
Size

Body Material

Code	Port Size
310	3/8 BSP (Main) 1/4 BSP (Aux.)
318	3/8 SAE (Main) 1/4 SAE (Aux.)
312	3/8 BSP Dual Cavity

Code	Body Material
A	Aluminum
S	Steel

Cavity Tooling For 53-1

Pilot Drill Ø	12.50 (0.49)
Step Drill	8DS31349
Reamer (Alum)	8RM31081A
Reamer (Steel)	8RM31081S
Counterbore	—
Tap	8TP31207

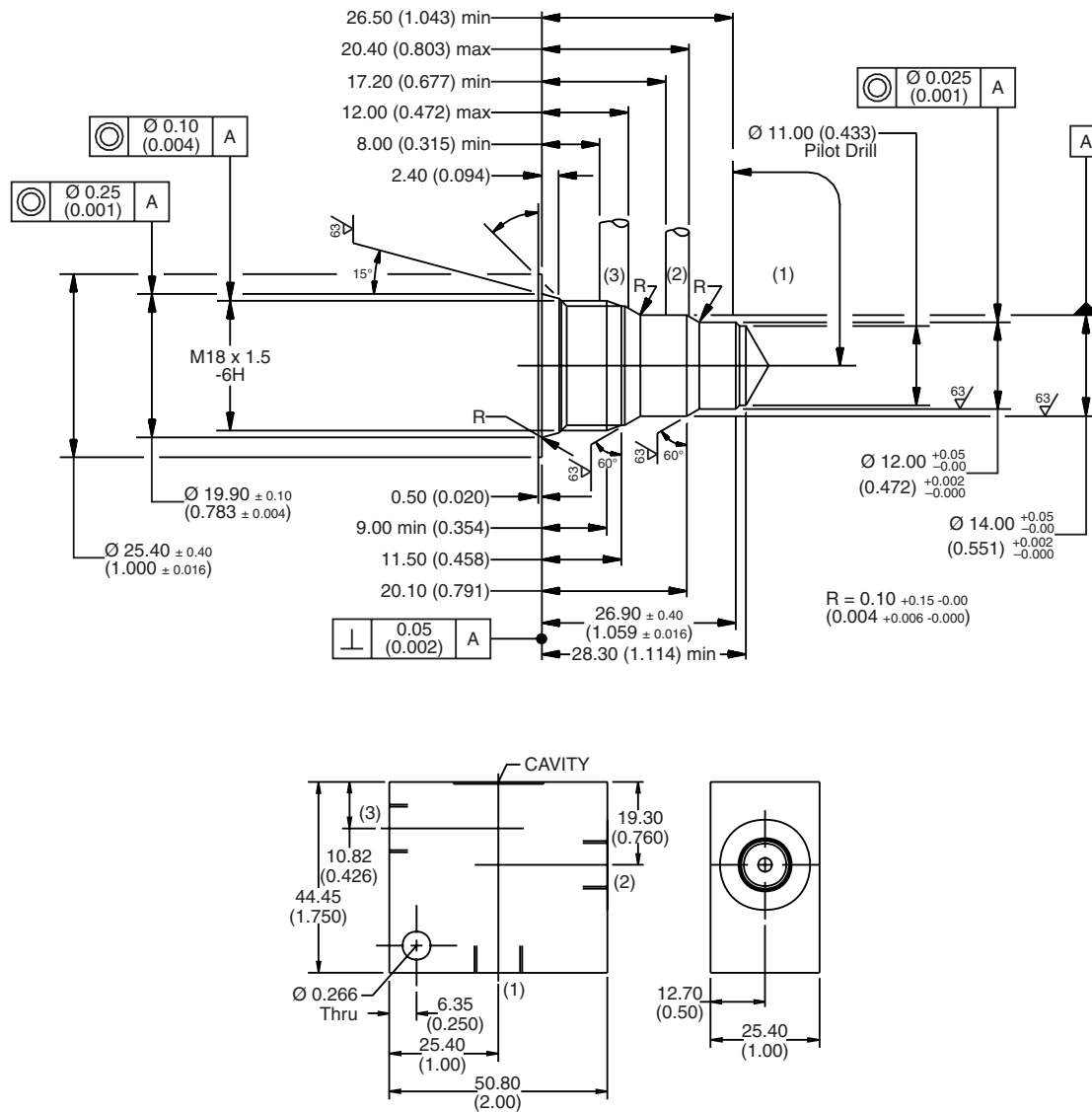
Technical Information

54-1, 3-Way

For additional information see Technical Tips on pages BC1-BC6.

Dimensions

Millimeters (Inches)



Ordering Information

LB10

**Line
Body**

10

Port
Size

1

**Body
Material**

Code	Port Size
591	1/4 SAE

Code	Body Material
A	Aluminum
S	Steel

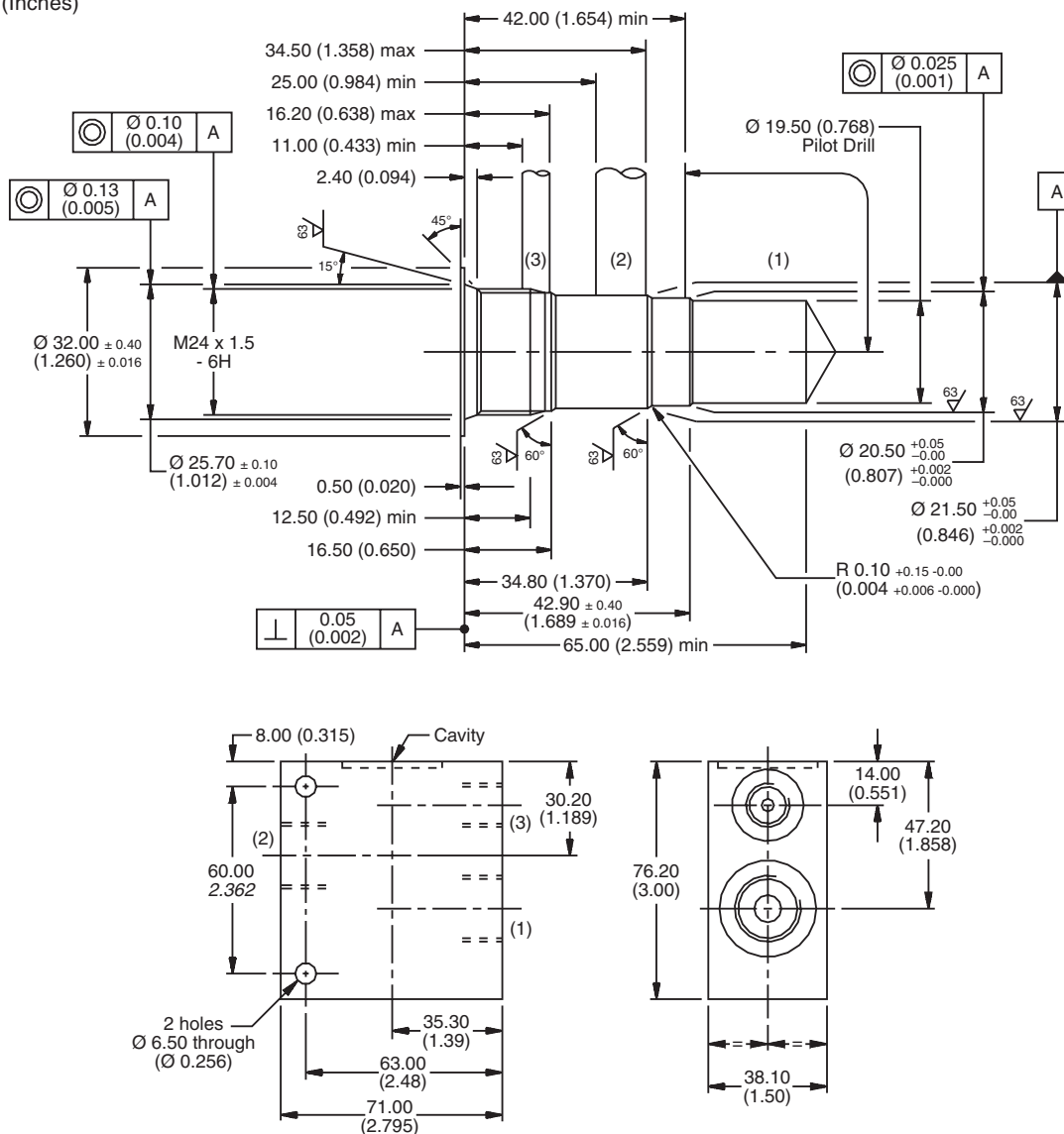
Cavity Tooling For 54-1

Pilot Drill Ø	11.00 (0.433)
Step Drill	8DS31379
Reamer (Alum)	8RM31087A
Reamer (Steel)	8RM31087S
Counterbore	—
Tap	8TP31207

For additional information see Technical Tips on pages BC1-BC6.

Dimensions

Millimeters (Inches)



Ordering Information

Line Body	Port Size	Body Material
LB10		

Code	Port Size
251	1/2 BSP (Main) 1/4 BSP (Aux.)
253	1/2 SAE (Main) 1/4 SAE (Aux.)

Code	Body Material
A	Aluminum
S	Steel

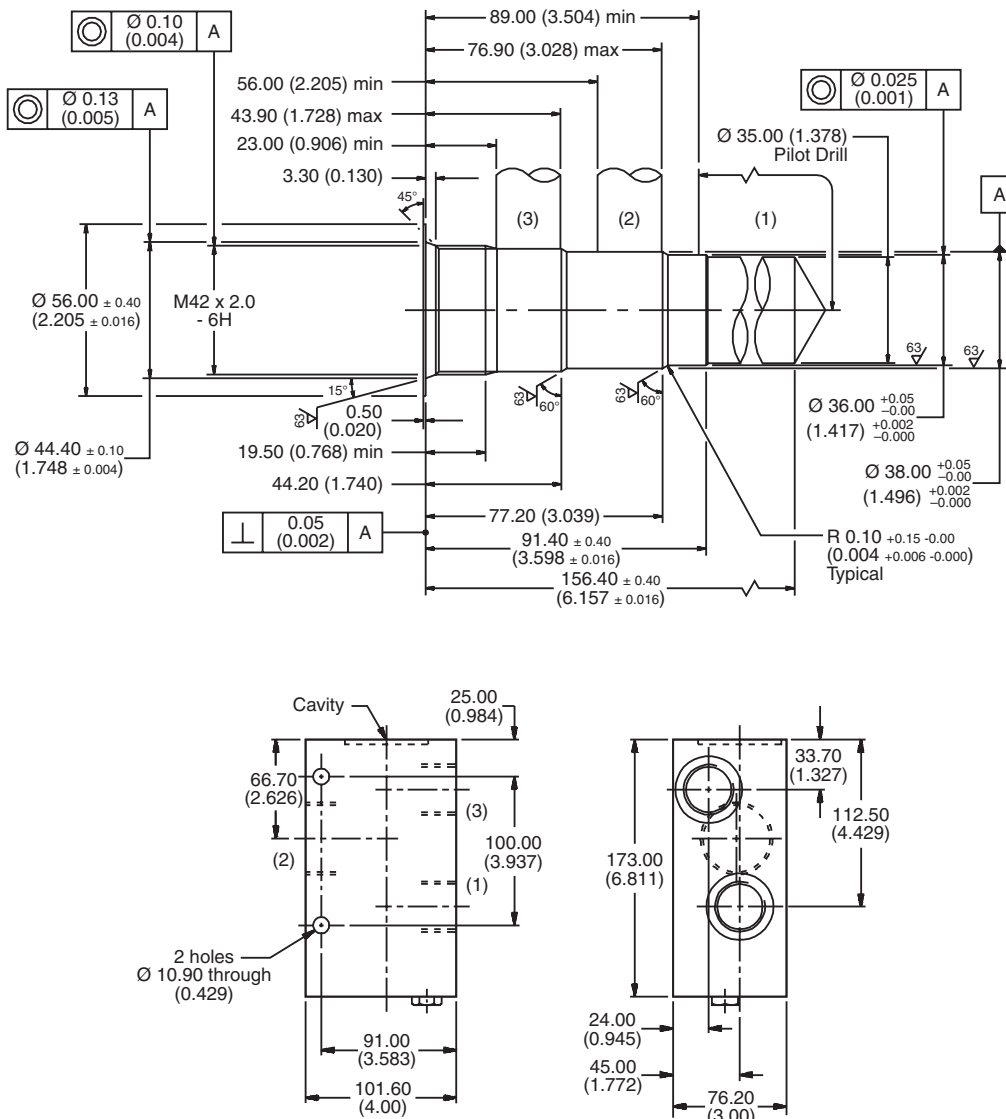
Cavity Tooling For 68-1

Pilot Drill $\varnothing$	19.50 (0.77)
Step Drill	8DS31341
Reamer (Alum)	8RM31041A
Reamer (Steel)	8RM31041S
Counterbore	8CB31116
Tap	8TP31216

For additional information see Technical Tips on pages BC1-BC6.

Dimensions

Millimeters (Inches)



Ordering Information

Line Body	Port Size	Body Material
LB10		

Code	Port Size
156	2 x 1 BSP (Main) 1 x 1-1/2 BSP (Aux.)
157	2 x 1 SAE (Main) 1 x 1-1/2 SAE (Aux.)

Code	Body Material
A	Aluminum
S	Steel

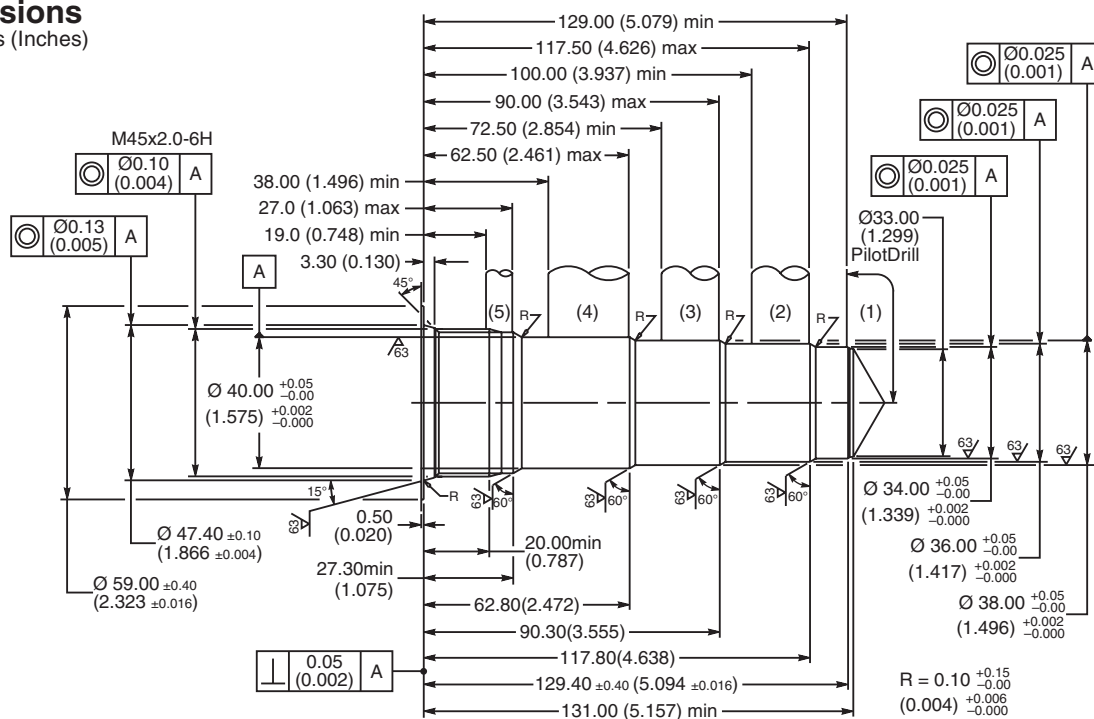
Cavity Tooling For 91-1

Pilot Drill $\varnothing$	35.00 (1.378)
Step Drill	8DS31332
Reamer (Alum)	8RM31032A
Reamer (Steel)	8RM31032S
Counterbore	8CB31118
Tap	8TP31213

For additional information see Technical Tips on pages BC1-BC6.

Dimensions

Millimeters (Inches)



Ordering Information

LB10		
Line Body	Port Size	Body Material

Code	Port Size
316	1-1/4 BSP (Main) 3/8 BSP (Aux)
317	1-1/4 SAE (Main) 3/8 SAE (Aux)

Code	Body Material
A	Aluminum
S	Steel

Cavity Tooling (100-1 Cavity)

Pilot Drill Ø	33.00 (1.30)
Step Drill	8DS31350
Reamer (Alum)	8RM31050A
Reamer (Steel)	8RM31050S
Counterbore	8CB31119
Tap	8TP31218