

SBA Accumulator Safety Blocks

For working pressures up to 350 Bar (5075 PSI)

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SBA Safety
Blocks

Features

- Available in 3 Sizes
- SAE and BSPP Porting
- CE Certified Relief Valve
- Lockout/Tagout Optional
- Buna or Fluorocarbon Seals
- Electrical Discharge Option

Overview

SBA Safety Blocks

Parker's range of SBA safety blocks is available in NG10, NG20 and NG32 sizes. SBA safety blocks combine all the features required to protect, isolate and discharge a hydraulic accumulator. The shut-off valve turns through 90° to isolate the accumulator instantly from the hydraulic system, in emergency or for maintenance purposes. Once isolated, the accumulator can be discharged to tank via a manual or electrically-controlled discharge valve. System protection is provided by a PED-approved, tamper-proof pressure relief valve.

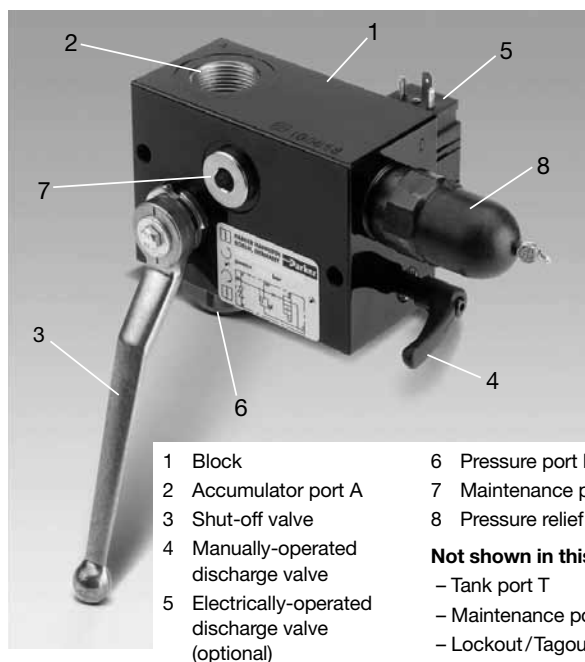
SBA safety blocks permit safe, simple connection of an accumulator to a hydraulic system. Suitable for use with all types of accumulators – bladder, piston and diaphragm – their compact, multi-function design saves space and reduces connections. By cutting the time required for installation and

Introduction

maintenance procedures, SBA safety blocks enable productivity and profitability to be maximized while system downtime is kept to a minimum. To simplify installation, a full range of adapters is available to suit all common port sizes and styles. For diagnostic purposes and continuous pressure monitoring, all SBA safety blocks feature two maintenance ports.

The European Pressure Equipment Directive (PED) 97/23/EC states that a safety device must be fitted to all accumulators to provide a shut-off facility, pressure limiting and pressure release functions, and measurement points. Parker's SBA range fulfils all of these requirements in a single, compact unit.

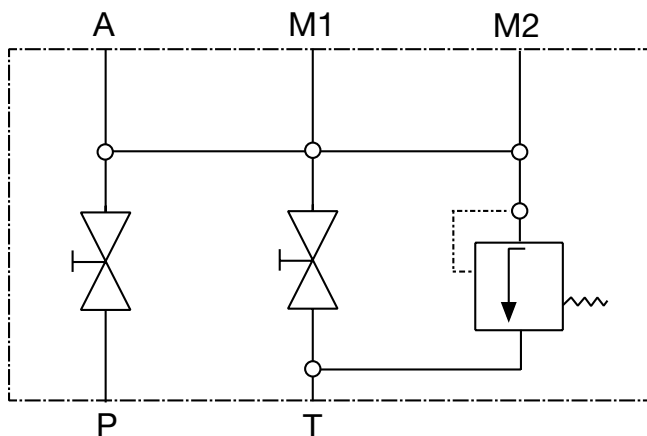
The safety block should always be mounted as close as possible to the accumulator. Commissioning and maintenance of the safety block and associated equipment must be performed by qualified personnel.



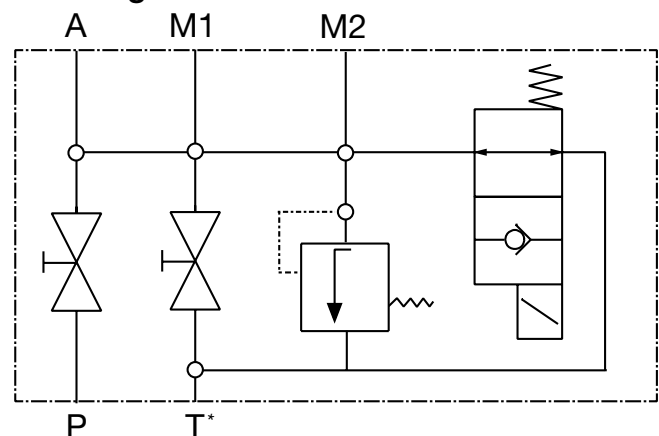
** Note: When using the SBA Type E with a bladder accumulator, it is recommended that an orifice be installed in the "T" line to prevent rapid discharge in the event of a bladder failure.*

Not shown in this view:
 – Tank port T
 – Maintenance port M2
 – Lockout/Tagout Option

**SBA Type M
Manually-Operated Discharge Valve**



**SBA Type E
Manually- and Electrically-Operated Discharge Valves**



Technical Data

Construction

- shut-off valve ball valve
- pressure relief poppet-type valve with damping
- manually-operated discharge valve poppet-type valve
- electrically-operated discharge valve poppet-type valve (where fitted)

Port type see table below

Mounting position accumulator port A facing upwards

Mounting screws (not supplied) M8 to grade 10.9, max. torque 26 + 4Nm

Ambient temperature -30°C (-22°F) to +80°C (176°F)

Max. operating pressure 350 bar (5075 PSI)

Relief flow rate G at p_{nom} see table below

Fluid mineral oil according to DIN/ISO.

For other fluid types, please contact the factory.

Operating temperature -15°C (5°F) to +80°C (176°F)

Viscosity 10 to 800 mm²/s

Δp-Q-graphs see table below

Electrical discharge U=24VDC, 105VDC (for 115V/60 Hz AC supply), P=26W, 100% ED,
IP 65 to DIN 40050, connector to DIN 43650 type A

Finish black zinc phosphated

Seal material Nitrile, Fluorocarbon

Dimensions and Weights

BSPP Version

Type	A ¹	P	T	M1	M2	Weight kg (lb)	Model Number
10M	M33x2	G ¹ / ₂	G ³ / ₈	G ¹ / ₂	G ¹ / ₄	4.4 (9.7)	SBAR10M*
10E	M33x2	G ¹ / ₂	G ³ / ₈	G ¹ / ₂	G ¹ / ₄	4.7 (10.4)	SBAR10E*
20M	M33x2	G1	G ¹ / ₂	G ¹ / ₂	G ¹ / ₄	6.0 (13.2)	SBAR20M*
20E	M33x2	G1	G ¹ / ₂	G ¹ / ₂	G ¹ / ₄	6.5 (14.3)	SBAR20E*
32M	Flange	G1 1/2	G1	G ¹ / ₂	G ¹ / ₄	12.0 (26.5)	SBAR32M*
32E	Flange	G1 1/2	G1	G ¹ / ₂	G ¹ / ₄	12.6 (27.8)	SBAR32E*

SAE Version

Type	A ¹	P	T	M1	M2	Weight kg	Model Number
10M	#16 SAE	#8 SAE	#6 SAE	#8 SAE	#4 SAE	4.4 (9.7)	SBAT10M*
10E	#16 SAE	#8 SAE	#6 SAE	#8 SAE	#4 SAE	4.7 (10.4)	SBAT10E*
20M	#16 SAE	#16 SAE	#6 SAE	#8 SAE	#4 SAE	6.0 (13.2)	SBAT20M*
20E	#16 SAE	#16 SAE	#6 SAE	#8 SAE	#4 SAE	6.5 (14.3)	SBAT20E*
3LM	2" Code 61	#24 SAE	#16 SAE	#8 SAE	#4 SAE	12.0 (26.5)	SBAT3LM*
3LE	2" Code 61	#24 SAE	#16 SAE	#8 SAE	#4 SAE	12.6 (27.8)	SBAT3LE*
3PM	1 1/2" Code 62	#24 SAE	#16 SAE	#8 SAE	#4 SAE	12.0 (26.5)	SBAT3PM*
3PE	1 1/2" Code 62	#24 SAE	#16 SAE	#8 SAE	#4 SAE	12.6 (27.8)	SBAT3PE*

¹A range of adapters is available for accumulator port A – see page 104.

Pressure Relief Valve

The function of the pressure relief valve is to protect the accumulator in service. If pressure exceeds the relief valve setting, the valve lifts off its seat and fluid is discharged to tank, allowing pressure in the system to fall to a safe level.

Pressure Settings

Pressure p bar (PSI)	Item Number
50 (725)	SV050
70 (1015)	SV070
100 (1450)	SV100
120 (1740)	SV120
140 (2030)	SV140
160 (2320)	SV160
200 (2900)	SV200
210 (3045)	SV210
250 (3625)	SV250
280 (4060)	SV280
300 (4350)	SV300
330 (4785)	SV330

Because of its cartridge design, the pressure relief valve can be readily replaced by a valve with a different pressure setting, selected from the table. A new approval under PED 97/23/EC is not required following this change. The pre-set relief pressure, in bar, is stamped onto the identification plate.

Type Approval

The pressure relief valve is checked and securely sealed following approval, according to pressure vessel regulations. It carries a CE mark, type approval number and serial number. All valves are supplied with a certificate

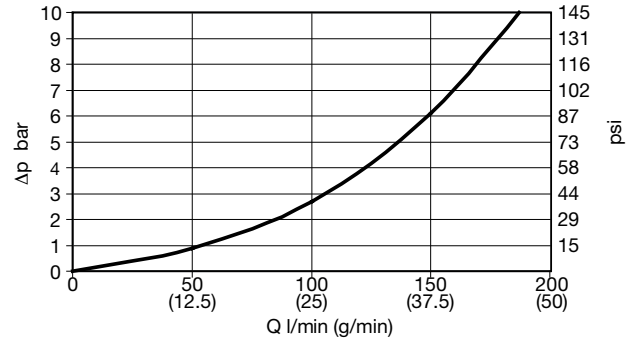
showing the pressure setting. The documents supplied with the pressure relief valve must be retained by the manufacturer, as they will be required in the event of repeat tests.

Manual and Electrical Discharge Valves

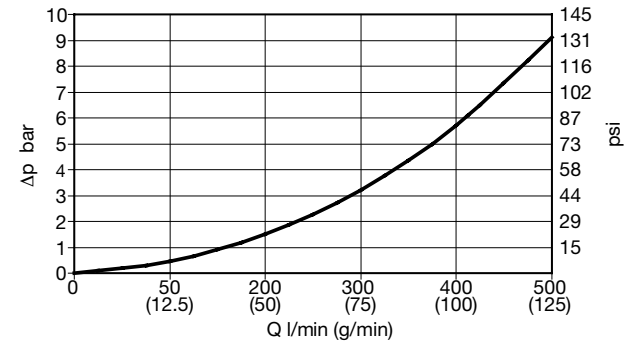
The discharge valve allows fluid stored in the accumulator to be discharged to tank. All models of SBA safety block are fitted with a manually-operated discharge valve. As an optional feature, an electrical discharge valve is available in addition to the manual valve. An electrical discharge valve should be specified where the safety block is to be mounted in a remote or inaccessible location. Manual-only versions of the SBA safety block are denoted by an M in the model code, see page 96, while models with both a manual and an electrical discharge valve are designated E.

Flow – Accumulator (A) to Pressure Port (P)

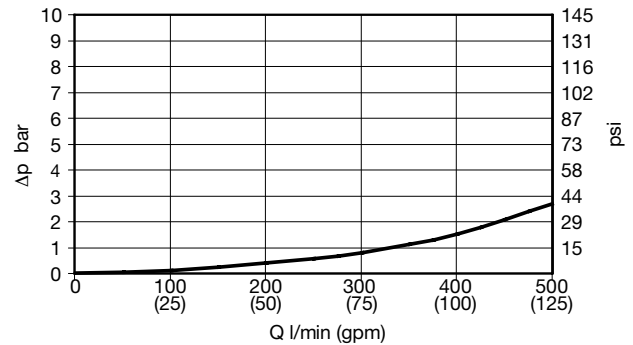
SBA10



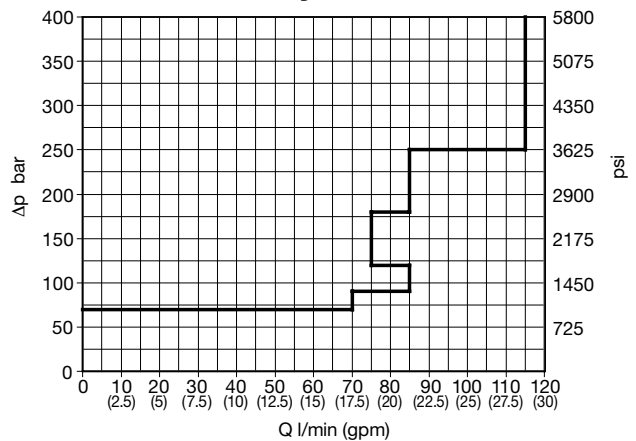
SBA20



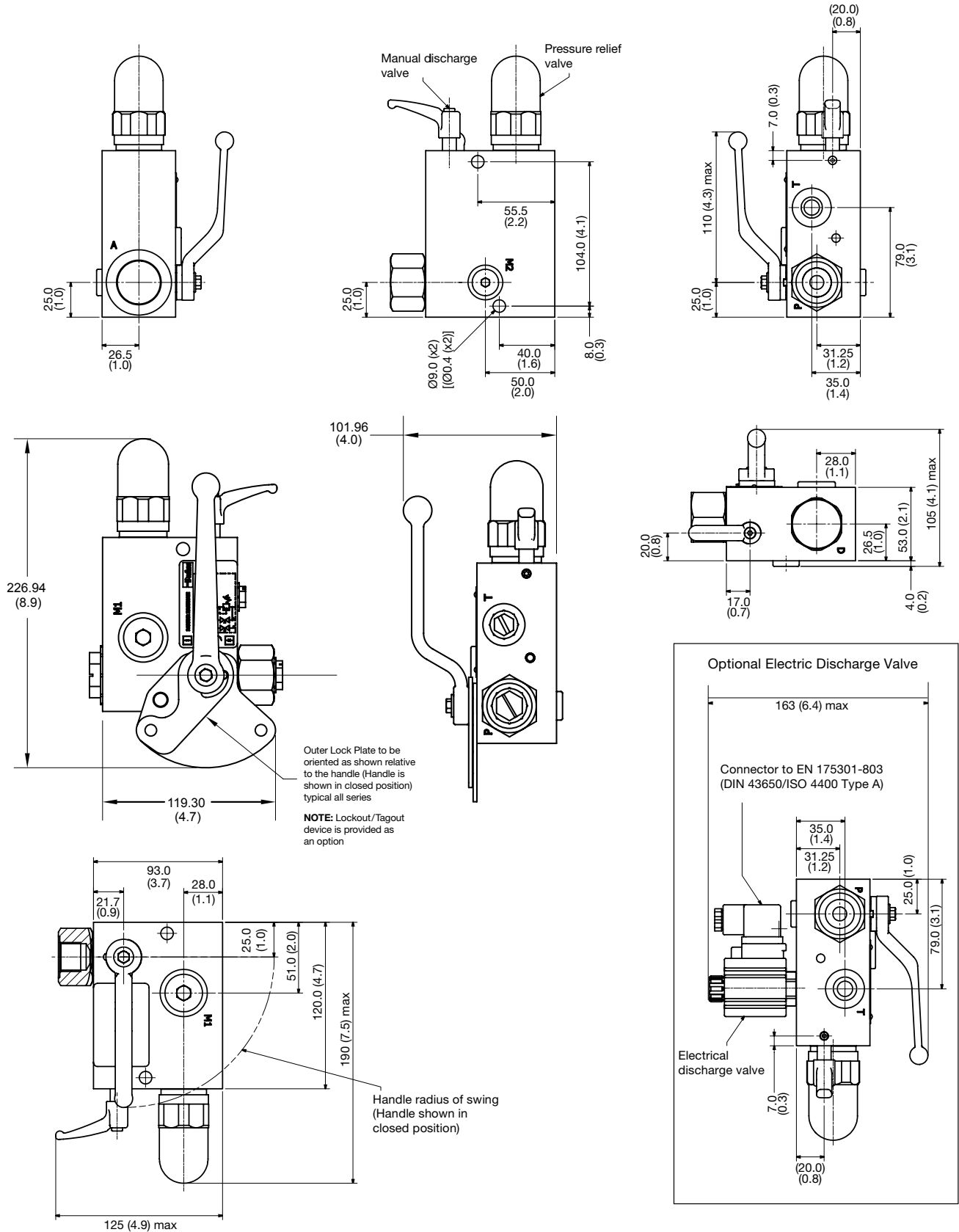
SBA32, 3L, 3P



Flow Limits for Safety Valve SV – All Models



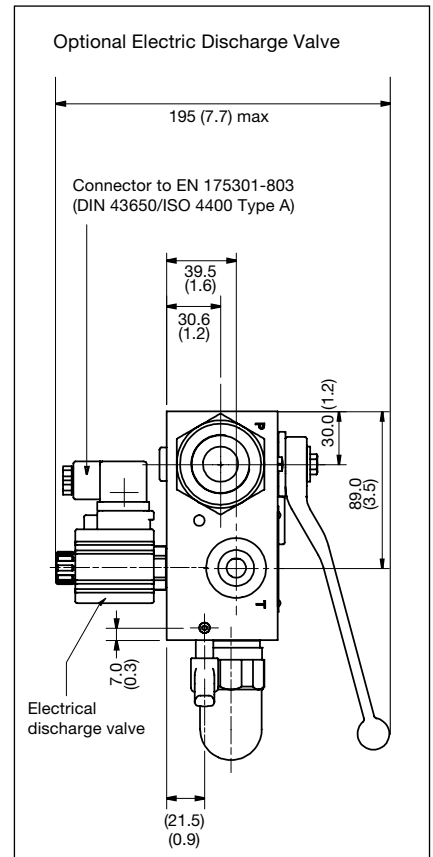
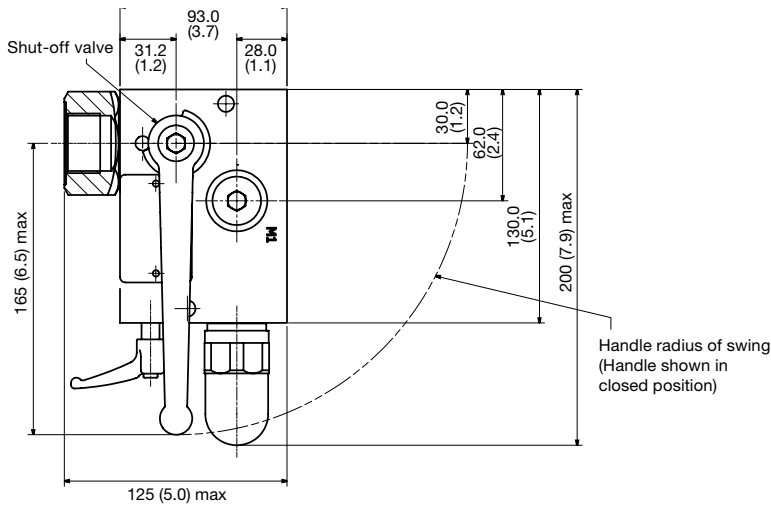
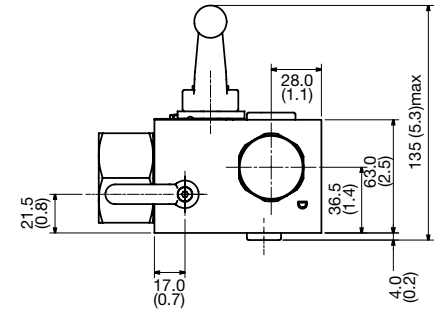
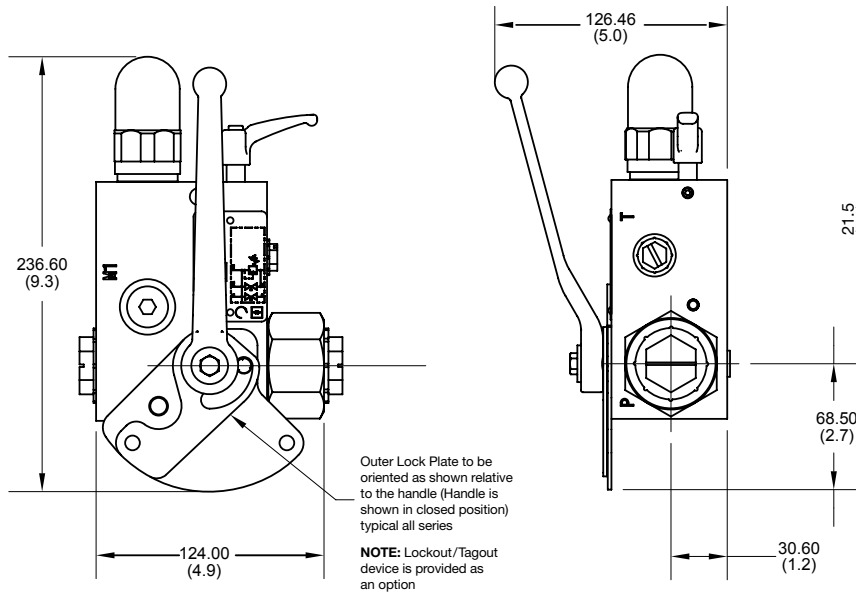
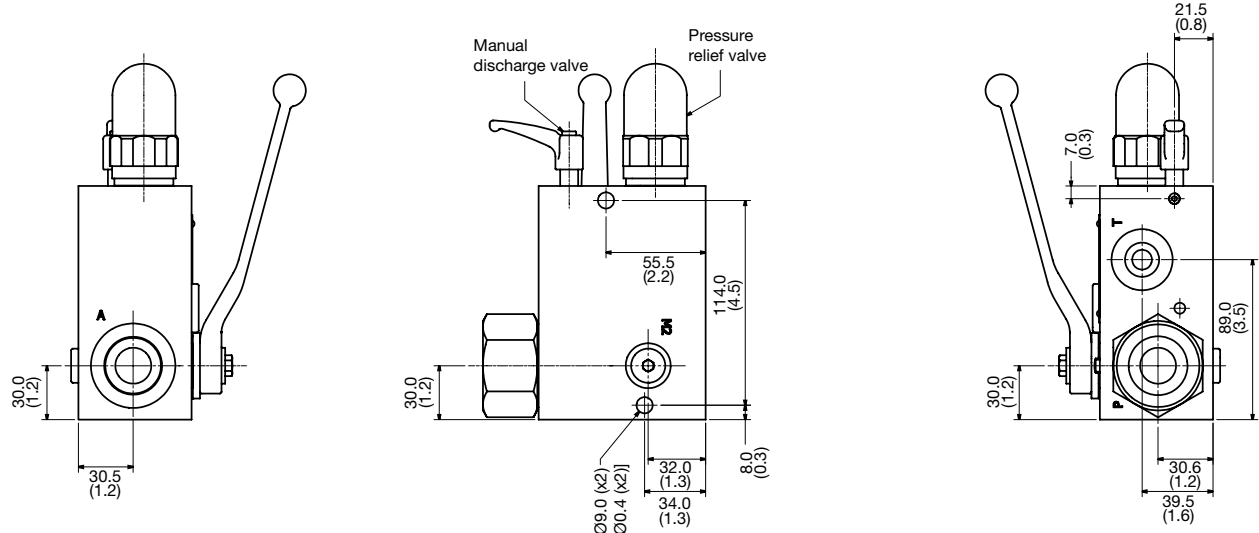
Reference Dimensions – SBAR10 and SBAT10



All dimensions are in millimeters (inches).

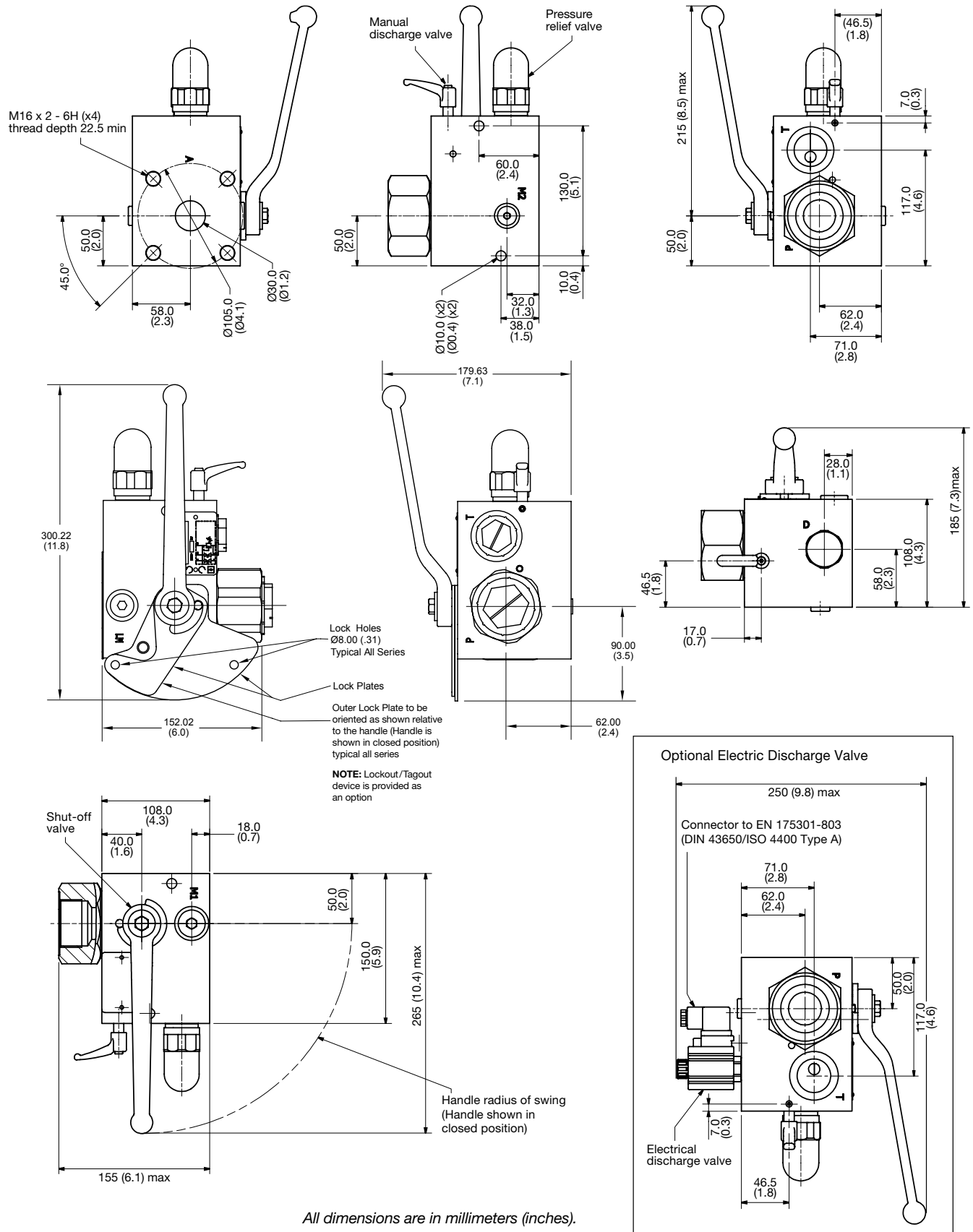
**SBA Safety
 Blocks**

Reference Dimensions – SBAR20 and SBAT20



All dimensions are in millimeters (inches).

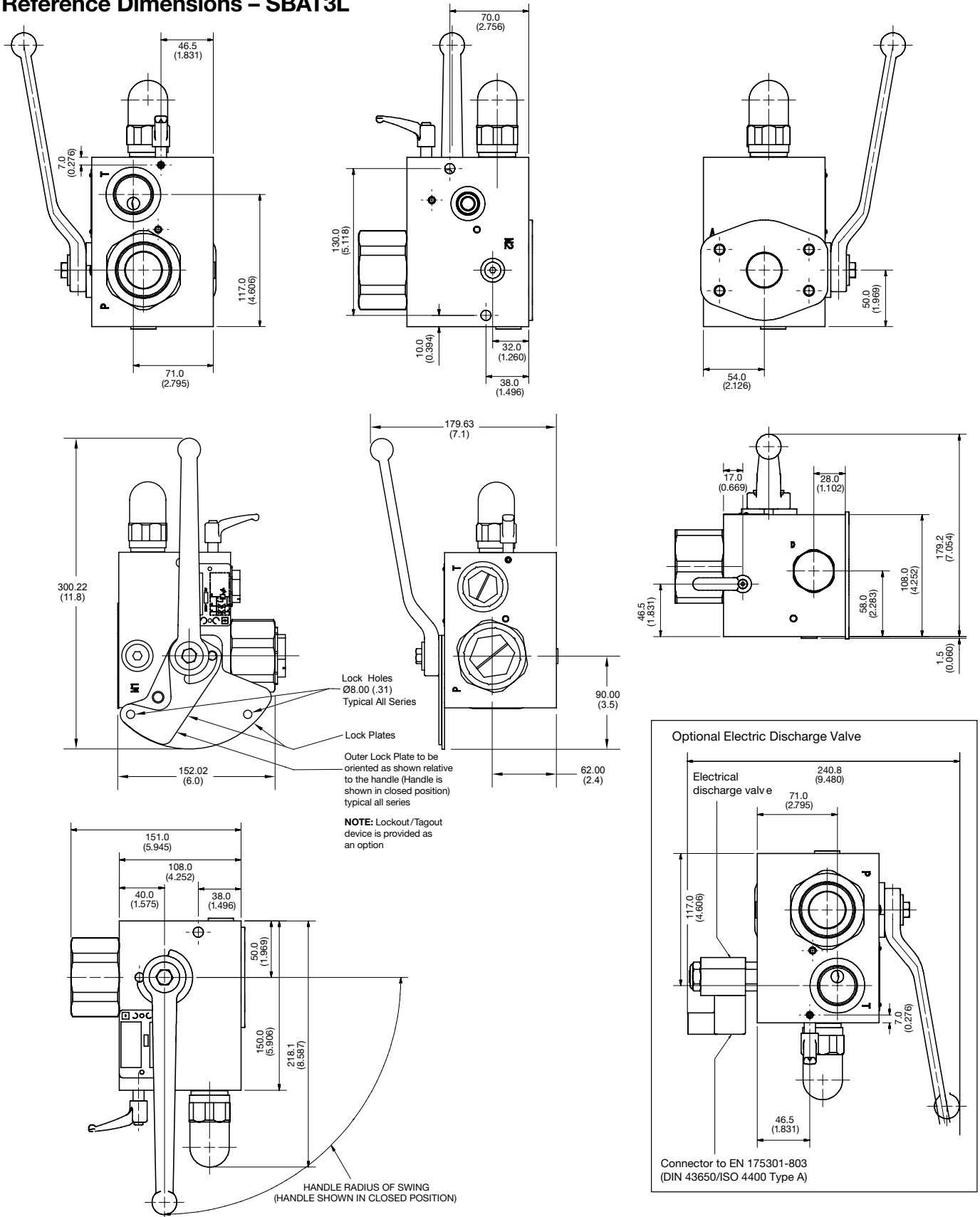
Reference Dimensions – SBAR32



All dimensions are in millimeters (inches).

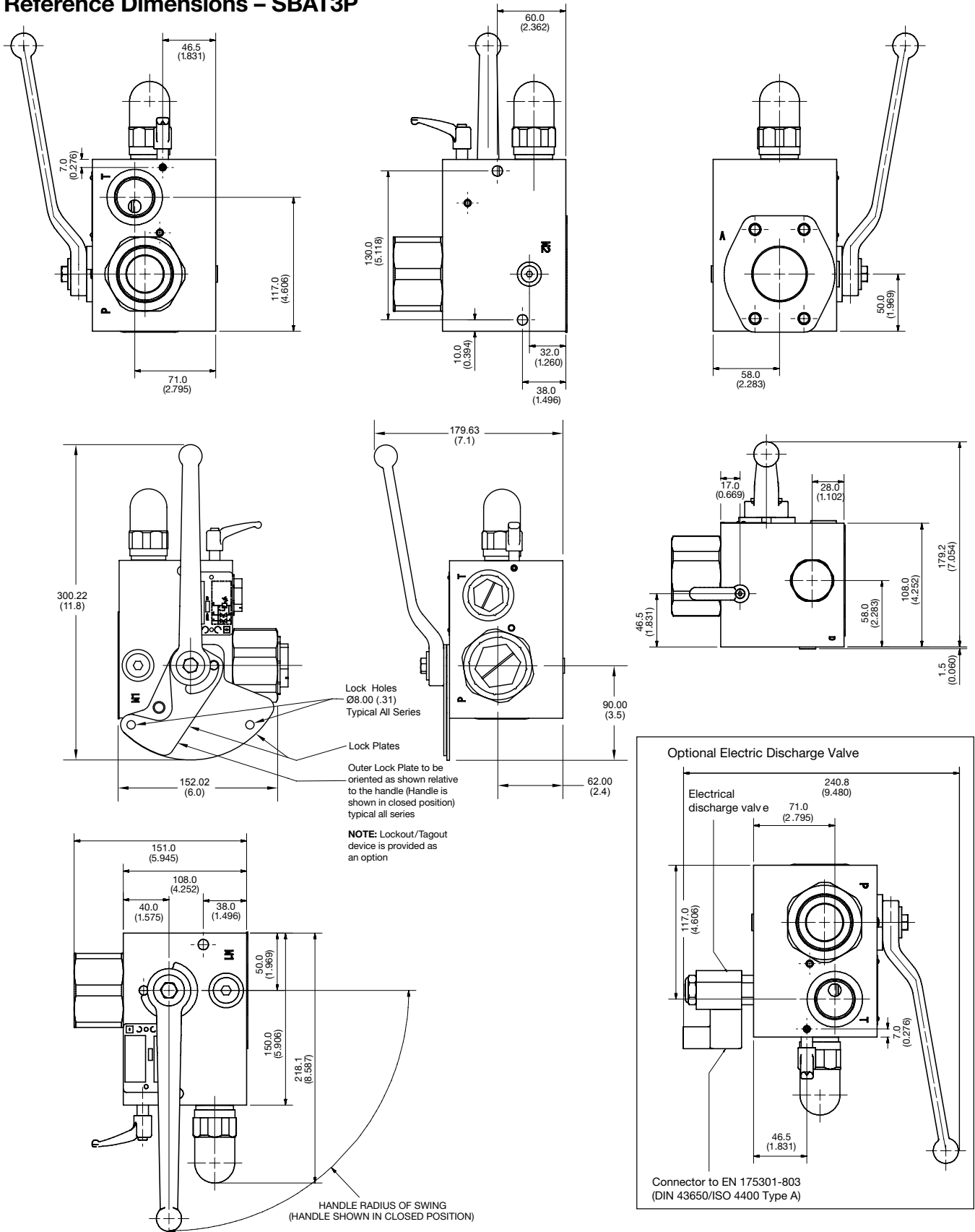
**SBA Safety
 Blocks**

Reference Dimensions - SBAT3L



All dimensions are in millimeters (inches).

Reference Dimensions – SBAT3P



All dimensions are in millimeters (inches).

**SBA Safety
 Blocks**

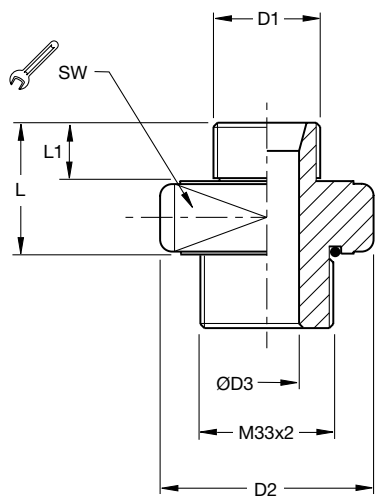
Adapters – Accumulator to Safety Block

SBAR Series

Accumulator Fluid Port D1		Safety Block Port A	SW	L	L1	D2	D3	Part Number	Use with SBAR	For Accumulator Type		
										Bladder	Diaphragm	Piston
G ^{3/4}	ISO 228	M33x2	46	33	16	53	16	UEST-T- ^{3/4}	10 & 20	X		
G1- ^{1/4}	ISO 228	M33x2	55	41	20	63	20	UEST-T-1- ^{1/4}	10 & 20	X		
G2	ISO 228	M33x2	80	46	22	90	20	UEST-T-2	10 & 20	X		
G2	ISO 228	Flange 100	-	50	22	-	30	UEST-F-2	32	X		
G ^{1/2}	ISO 228	M33x2	46	34	14	53	12	UEST-T- ^{1/2} ED	10 & 20		X	X
G ^{3/4}	ISO 228	M33x2	46	36	16	53	16	UEST-T- ^{3/4} ED	10 & 20		X	X
G1- ^{1/2}	ISO 228	Flange 100	-	70	22	-	30	UEST-F-1- ^{1/2}	32			X

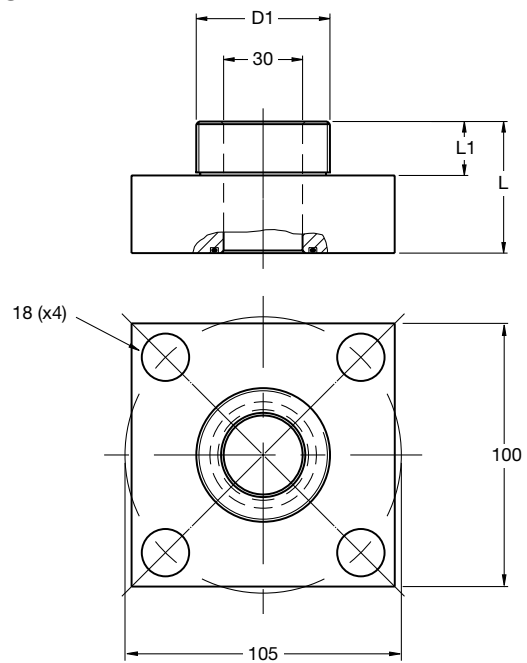
Threaded Adapter

UEST-T-xx



Flanged Adapter

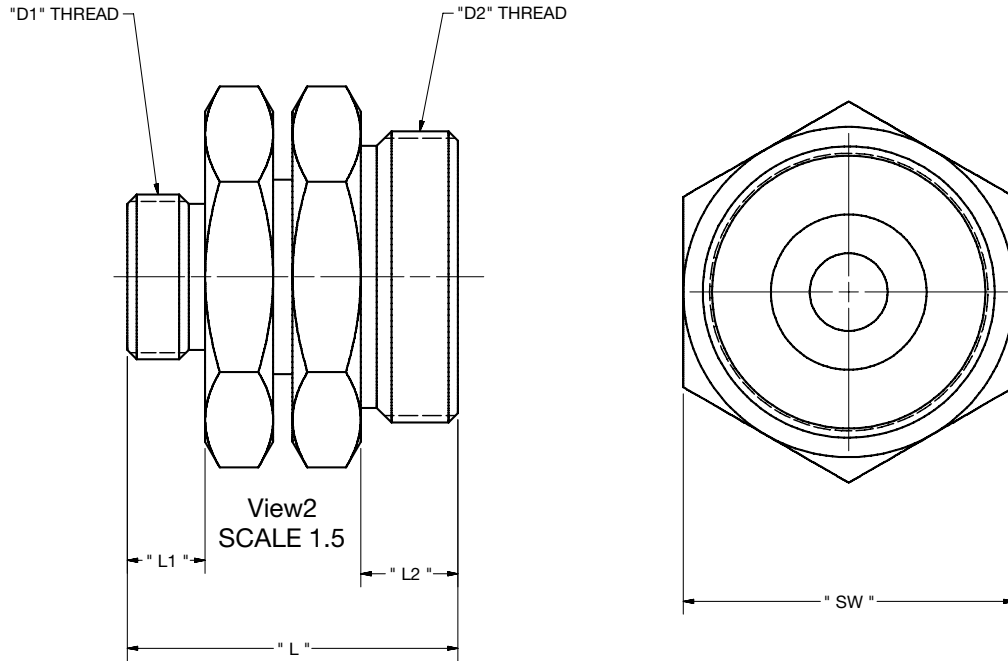
UEST-F-xx



SBAT Series

Accumulator Fluid Port D1		Safety Block Port A	SW	L	L1	D2	D3	Part Number	Use with SBAT	For Accumulator Type		
										Bladder	Diaphragm	Piston
3/4-16	UNF-2A	#16 SAE	1-1/2	2.20	0.594	1-5/16-12	-	8727991608	10		X	X
1-1/16-12	UNF-2A	#16 SAE	1-1/2	2.20	0.594	1-5/16-12	-	8727991612	10			X
1-5/16-12	UNF-2A	#16 SAE	1-1/2	2.44	0.594	1-5/16-12	-	8727991616	10			X
1-5/8-12	UNF-2A	#16 SAE	1-1/2	2.60	0.594	1-5/16-12	-	8727991620	10	X		X
1-7/8-12	UNF-2A	#16 SAE	2-1/8	2.44	0.594	1-7/8-12	-	8727992416	10 / 20	X		X

SAE to SAE Adapter



SBA Safety Blocks

How to Order – Safety Block Model Code Structure

