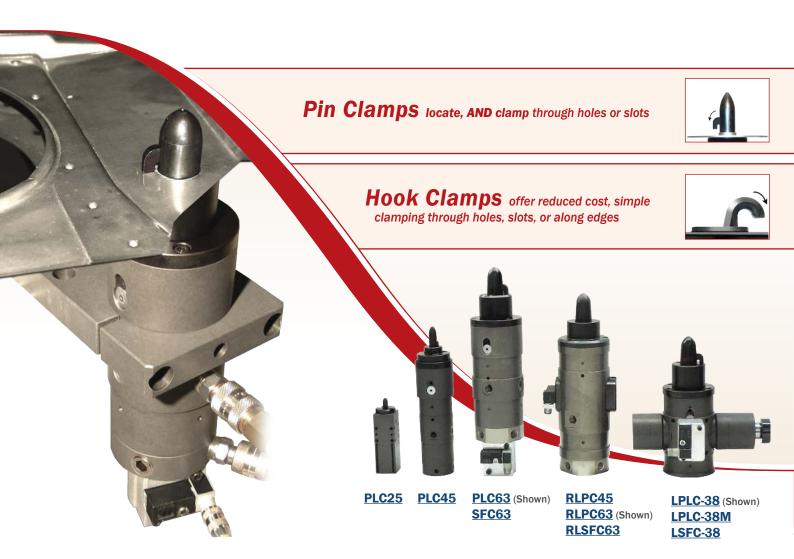
PIN & HOOK CLAMPS

Reduce cost by clamping through holes, slots or along edges.



View our Pin & Hook Clamp Line of Products Online!

www.btm-europe.de





www.btm-europe.de





SAFETY NOTE

Customer is responsible for the safe operation and use of the products shown in this literature.

INTRODUCTION

BTM Pin Clamps reduce cost by both accurately locating through datum holes and clamping a part with one device. XYZ location register is achieved by incorporating a clamping finger or hook inside the locator pin thereby eliminating expensive swing arm power clamps.

The less expensive Hook Clamps are used when accurate part location is not required.

BTM Hook Clamps provide simple clamping through holes, slots or along edges further reducing cost. Hooked style fingers clamp over flanged holes.

Pin Clamps and Hook Clamps come in 3 types: Clamping, Retaining, and Locking.

Clamping – PLC and SFC – Air pressure on a piston multiplies the force required to clamp the part to the net surface.

Retaining - RLPC and RLFPC - Air pressure applies both clamping force and retracts a spring loaded rod locker, which upon loss of air engages the finger/hook to retain the clamped part. This light weight and compact clamp is best for material handling and robotic EOAT.

Locking – LPLC and LSFC – A patented air driven cam mechanism maintains clamp force upon removal of air making this clamp ideal for moving fixtures. Clamp force is available within the last 3mm of finger/hook travel making this clamp ideal for clamping multiple part thicknesses.

All BTM Pin and Hook clamps feature 90° positioning of the finger/hook to avoid part obstructions or weld spatter. Round body clamps feature full 360° positioning of the finger/hook.







HOW THEY WORK

PIN CLAMPS (PLC, LPLC, RLPC)



STEP ONE

With the clamp finger retracted, the part is loaded over the locating pin.



STEP TWO

The material rests on the clamp Rest Block ("Donut").



STEP THREE

The finger swings out of the locating pin with 5mm of rotational travel.



STEP FOUR

The finger has 10mm of straight travel. LPLCs clamp and lock in the last 3mm.

HOOK CLAMPS (SFC, LSFC, RLSFC)

STEP ONE

The part is loaded over the retracted finger and rests on the clamp rest block "donut".



STEP TWO

The finger swings in the direction of its clamping surface with 5mm of rotational travel.



STEP THREE

The finger has 10mm of straight travel. LSFCs clamp and lock in the last 3mm.



BTM reserves the right to make changes to its literature without any prior notice. Go to www.btm-europe.de for latest version.



TABLE OF CONTENTS

		Hole/Slot Range	6mm-12.00mm	Features
		Clamping Force	231N @ 5.5BAR (52lbf @ 80PSI)	Compact & Light Weight 25mm bore pneumatic cylinder Magnetic Position Sensing Switch Option
Ŋ		PLC45 Pin Locating	Clamp	<u>6-7</u>
ቯ		Hole/Slot Range	12.50mm-18.00mm	Features
NON-LOCKING MODELS		Clamping Force	578N @ 5.5BAR (130lbf @ 80PSI)	Clamps on top of a flange.
5	R	PLC63 Pin Locating	Clamp	
בָּ	0	Hole/Slot Range	18.00mm-40.00mm	Features
Z-L		Clamping Force	1334N @ 5.5BAR (300lbf @ 80PSI)	Finger relief for flanged hole clearance (25mm, 30mm, 40mm)
Ž		SFC63 Hook Clamp .		
		Hole/Slot Range	18.00mm-40.00mm	Features
		Clamping Force	1334N @ 5.5BAR (300lbf @ 80PSI)	A single clamp finger without a locating pin.



	RLPC45	RLPC63
Hole/Slot Range	12.50mm-18.00mm	18.00mm-40.00mm
Clamping Force	578N @ 5.5BAR (130lbf @ 80PSI)	1334N @ 5.5BAR (300lbf @ 80PSI)

Features

- Retains the part when air pressure is removed or lost.
- Finger relief for flanged hole clearance (25mm, 30mm, 40mm)



OCKING MODELS

Hole/Slot Range 18.00mm-40.00mm Clamping Force 1334N @ 5.5BAR (300lbf @ 80PSI)

Features

RLPC45 & 63 Rod-Locking Pin Locator Clamps __________12-13

- Retains the part when air pressure is removed or lost.
- A single clamp finger without a locating pin.



Hole/Slot Range 18.00mm-40.00mm Clamping Force 900 - 1334N @ 5.5BAR (200 - 300lbf @ 80PSI)

- Maintains clamping force when locked, even if air pressure is removed or lost.
- (200 300lbf @ 80PSI)

 Finger relief for flanged hole clearance
 (25mm, 30mm, 40mm)

 LSFC38 Locking Hook Clamp

 18-19



Hole/Slot Range	18.00mm-40.00mm
Clamping Force	900 - 1334N @ 5.5BAR (200 - 300lbf @ 80PSI)

Features

- Maintains clamping force when locked, even if air pressure is removed or lost.
- A single clamp finger without a locating pin.

Mounting Information		<u>22</u>
Switch Information		<u>23</u>
Warranty Information	Back	Cover



PLC25 LIGHT DUTY PIN CLAMP

A non-locking light duty pin locator clamp designed to clamp through small holes or slots.

Hole/Slot Size	6mm - 12mm
Clamping Force	222N @ 5.5BAR (50lbf @ 80PSI)
Finger Travel	6mm [0.24"] Total Consists of: • 3mm [0.12in] rotational • 3mm [0.12in] straight line pull down stroke
Bore Diameter	25.4mm [1.00in]
Cylinder Stroke	7.0mm [0.28in]
Recommended Operating Pressure	4.0 - 6.9 BAR [60 - 100 PSI]
Approximate Weight	0.28 kg [0.62 lbs] (depending on pin size)





Open Position

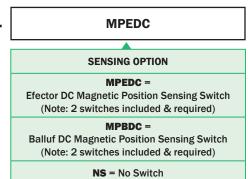


Closed Position

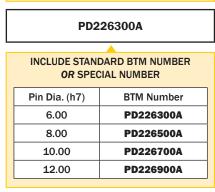
HOW TO ORDER

Email info@btm-europe.de to request a quote!

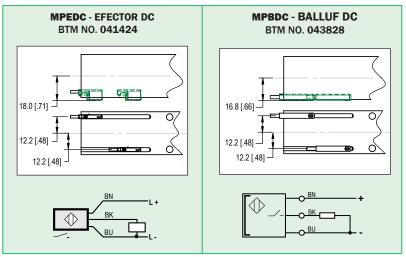




SENSING

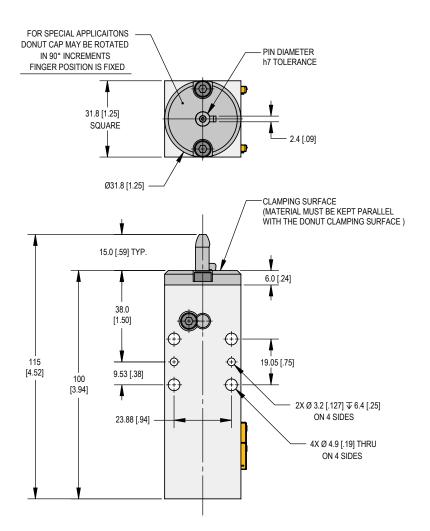


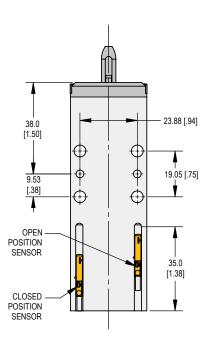
ASSEMBLY NUMBER

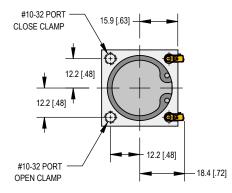


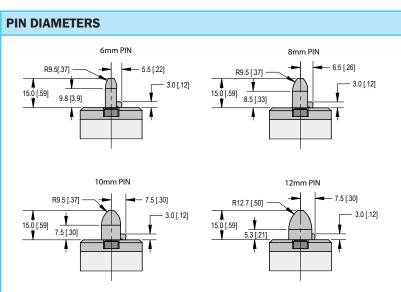


PLC25 LIGHT DUTY PIN CLAMP









NOTE: BTM Pin Clamps can be ordered with custom designed (non-standard) pins, donuts, and/or fingers. In such instances, a SPECIAL OPTION number will be issued by BTM's Product Engineering Department. This number must be referenced when ordering a non-standard pin clamp.



PLC45 PIN CLAMP

A non-locking pin locator clamp designed to clamp through holes or slots.

Hole/Slot Size	12.5mm - 18mm	
Clamping Force	578N @ 5.5BAR [130lbf @ 80PSI]	
Finger Travel	15mm [0.590in] Total. Consists of:	
Bore Diameter	44.5mm [1.75in]	
Cylinder Stroke	15.0mm [0.59in]	



Hardened pin Rc 58-62

90° Positive Locating Detents for Spring Locator in Standard Blade Mount.

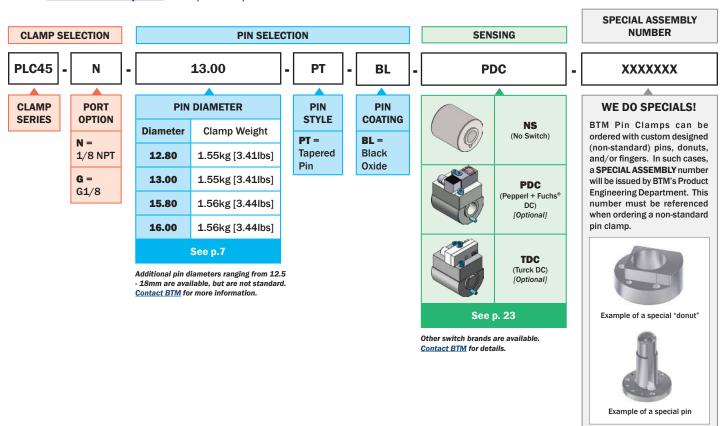
(4) locations



World Switch Package Can be mounted in four different orientations on PLC45 clamps.

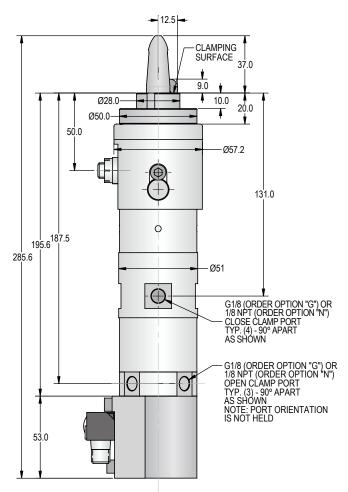


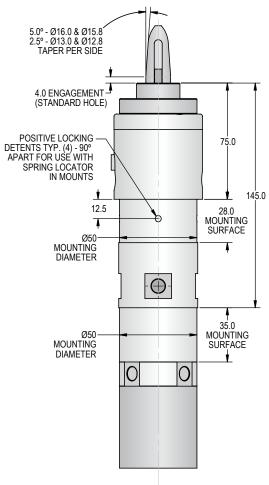
HOW TO ORDER

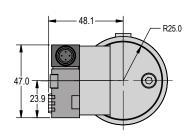




PLC45 PIN CLAMP





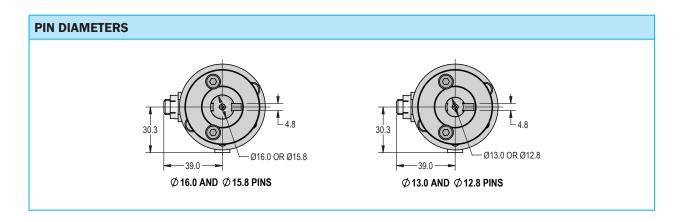




Note: If the PLC45 clamp is used on a flanged hole, the finger will clamp on top of the flange.



The material must be kept parallel with the rest block's clamping surface when loading over the pin.



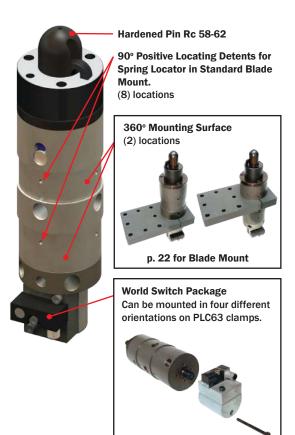


PLC63 PIN CLAMP

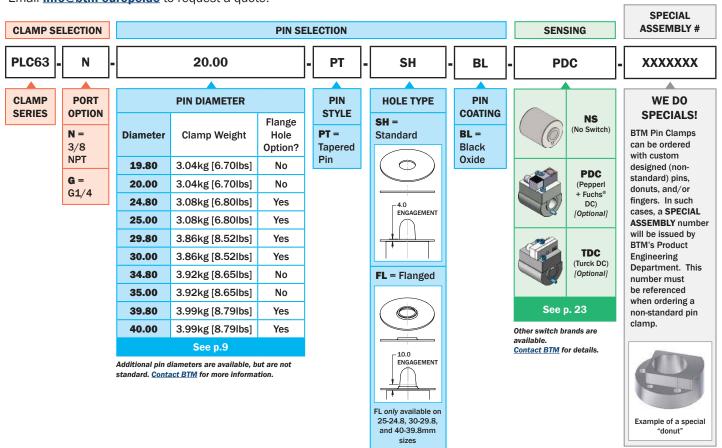
A non-locking pin locator clamp designed to clamp through holes or slots.

Hole/Slot Size	18mm - 40mm	
Clamping Force 1334N @ 5.5BAR [300lbf @ 80PSI]		
Finger Travel	15mm [0.590in] Total. Consists of:	
Bore Diameter	63mm [2.50in]	
Cylinder Stroke	15.0mm [0.59in]	



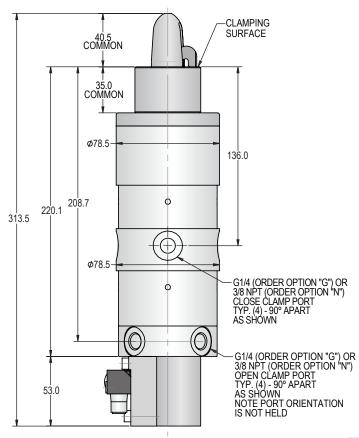


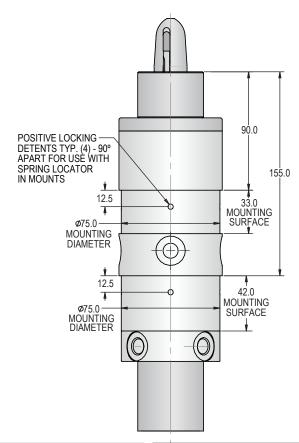
HOW TO ORDER

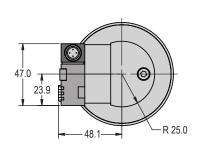




PLC63 PIN CLAMP





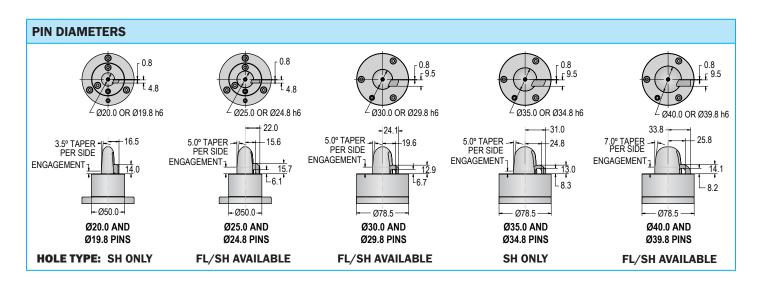




Note: If the PLC63 clamp is used on a flanged hole, the finger will clamp over of the flange. (25mm, 30mm, and 40mm only)



The material must be kept parallel with the rest block's clamping surface when loading over the pin.





SFC63 HOOK CLAMP

A non-locking single finger clamp designed to clamp through holes or slots.

Hole/Slot Size	18mm - 40mm	
Clamping Force 1334N @ 5.5BAR [300lbf @ 80PSI]		
Finger Travel	15mm [0.590in] Total. Consists of:	
Bore Diameter 63mm [2.50in]		
Cylinder Stroke	15.0mm [0.59in]	



90° Positive Locating Detents for Spring Locator in Standard Blade Mount. (8) locations



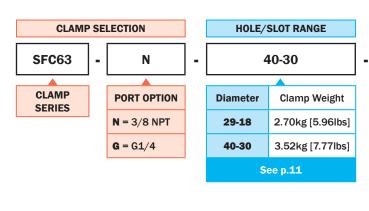


World Switch Package Can be mounted in four different orientations on SFC63 clamps.



HOW TO ORDER

Email info@btm-europe.de to request a quote!





SENSING

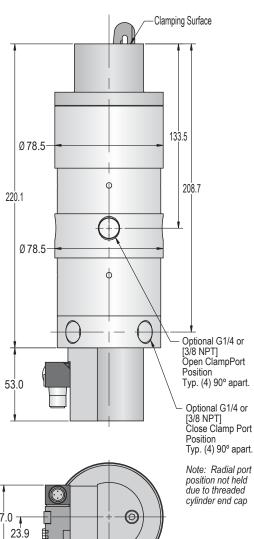
Other switch brands are available. Contact BTM for details.

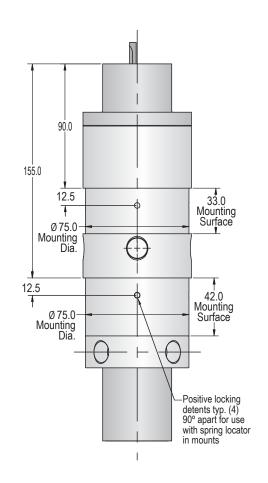
WE DO SPECIALS! BTM Single Finger (Hook) Clamps can be ordered with custom designed (non-standard) donuts, and/or fingers. In such cases, a SPECIAL ASSEMBLY number will be issued by BTM's Product Engineering Department. This number must be referenced when ordering a non-standard single finger (hook) clamp.

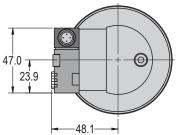
SPECIAL ASSEMBLY NUMBER

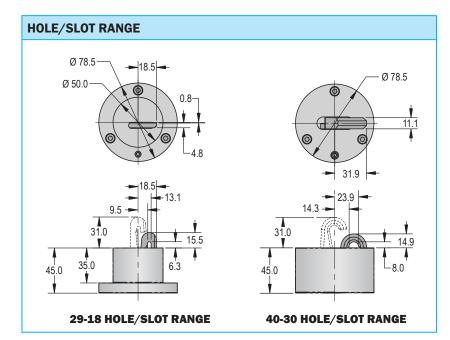


SFC63 HOOK CLAMP











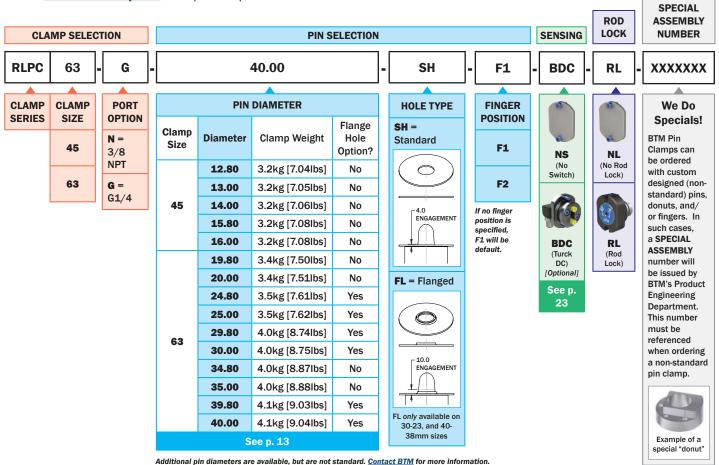
RLPC ROD LOCKING PIN CLAMP

RLPC clamps may be ordered with a rod locking feature, allowing the clamp to retain a part when air pressure is removed/lost. However, clamping force will not maintained. If you need to maintain clamping force after air pressure is removed/lost, please see our LPLC or LSFC.

	RLPC45	RLPC63
Hole/Slot Size	12.5mm - 18mm	18mm - 40mm
Clamping Force	578N @ 5.5BAR [130lbf @ 80PSI]	1334N @ 5.5BAR [300lbf @ 80PSI]
Finger Travel	15mm [0.590in] Total. Consists of:	
Bore Diameter	45mm [1.77in]	63mm [2.50in]
Cylinder Stroke	15mm [0.59in]	

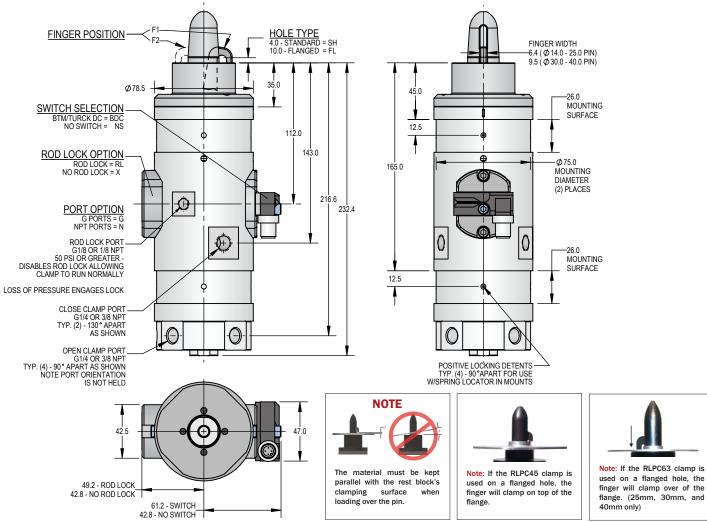


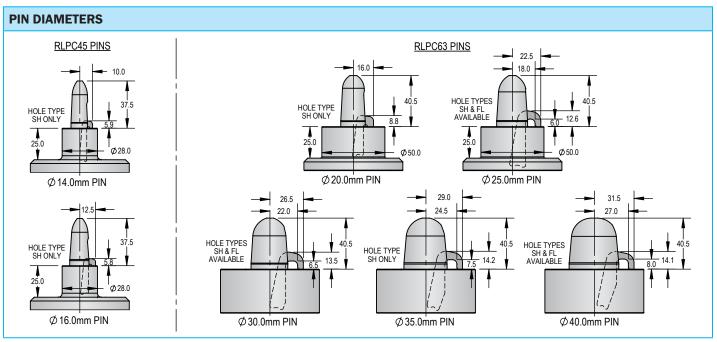
HOW TO ORDER





RLPC ROD LOCKING PIN CLAMP







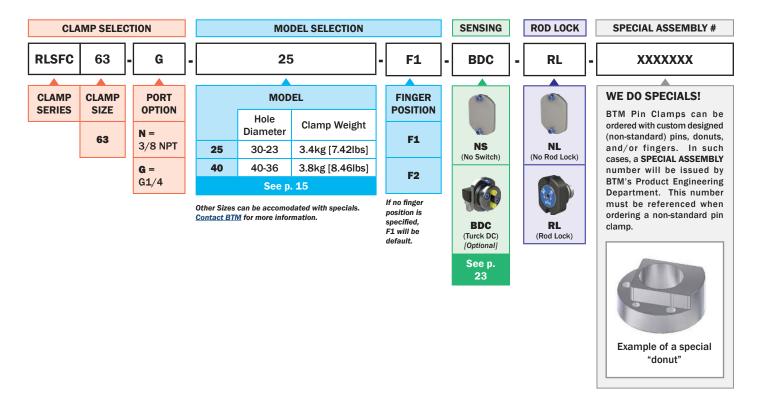
RLSFC63 ROD LOCKING HOOK CLAMP

RLSFC clamps may be ordered with a rod locking feature, allowing the clamp to retain a part when air pressure is removed/lost. However, clamping force will not maintained. If you need to maintain clamping force after air pressure is removed/lost, please see our LPLC or LSFC.

Hole/Slot Size	18mm - 40mm	
Clamping Force	1334N @ 5.5BAR [300lbf @ 80PSI]	
Finger Travel	15mm [0.590in] Total. Consists of:	
Bore Diameter	63mm [2.50in]	
Cylinder Stroke	15mm [0.59in]	

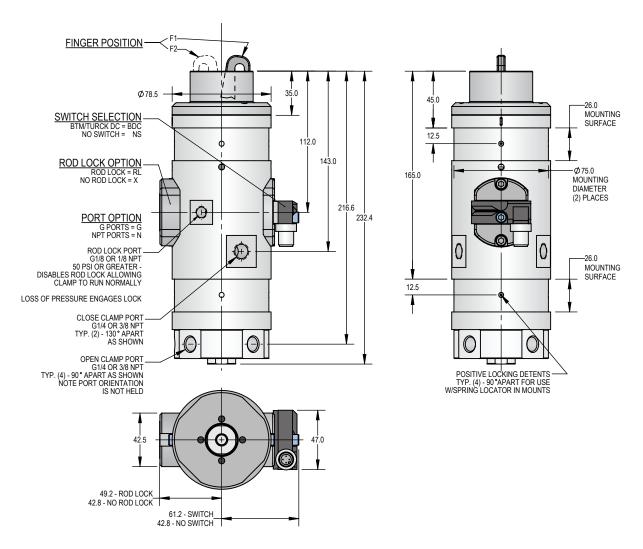


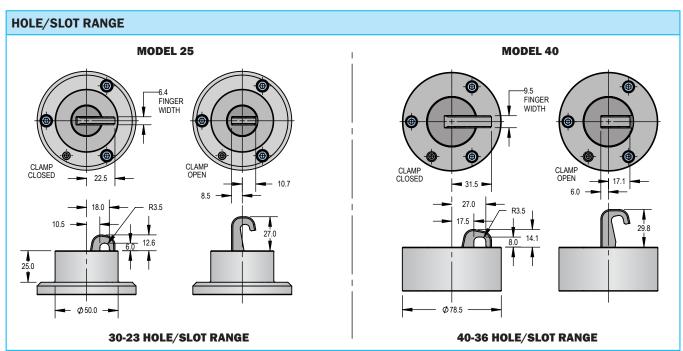
HOW TO ORDER





RLSFC63 ROD LOCKING HOOK CLAMP



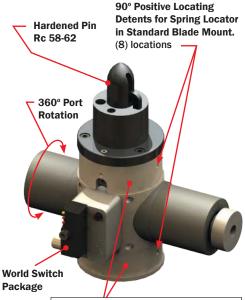




LPLC38 LOCKING PIN CLAMP

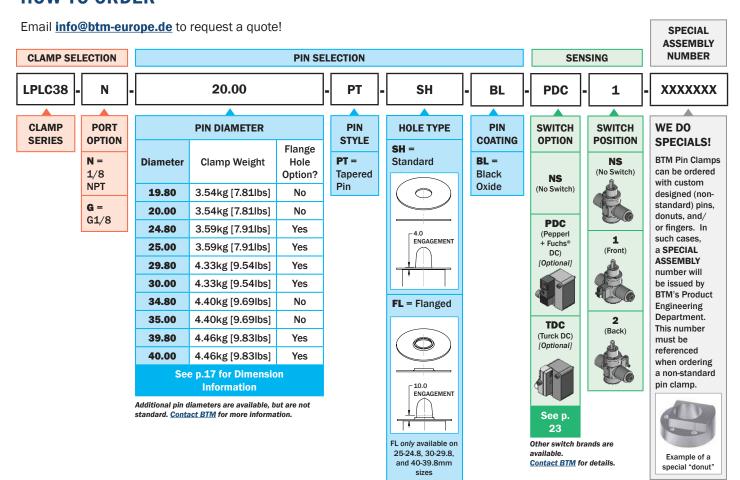
A locking pin locator clamp designed to stay locked *and* maintain clamping force even if air pressure is removed/lost.

Hole/Slot Size	18mm - 40mm	
Clamping Force 890N - 1334N @ 5.5BAR [200 - 300lbf @ 80PSI]		
Finger Travel	15mm [0.590in] Total. Consists of: • 5mm [0.197in] rotational • 10mm [0.394in] straight line pull down stroke • 3mm [0.118in] locking range (from clamping surface)	
Bore Diameter	38mm [1.50in]	
Cylinder Stroke	38.5mm [1.52in]	



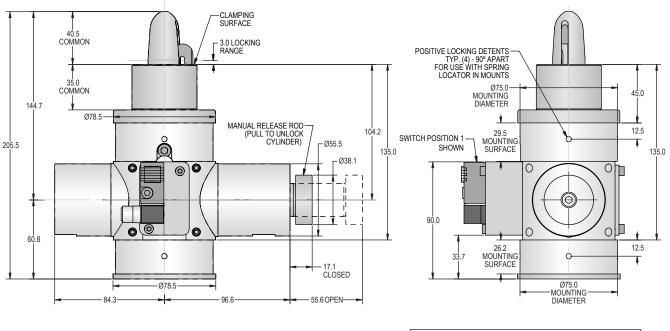


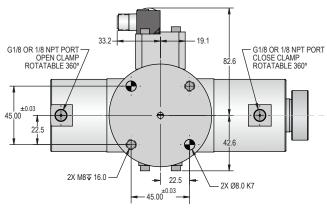
HOW TO ORDER





LPLC38 LOCKING PIN CLAMP





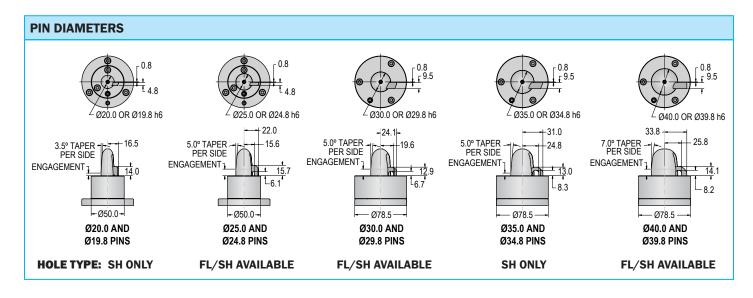




Note: If the LPLC38 clamp is used on a flanged hole, the finger will clamp over of the flange. (25mm, 30mm, and 40mm only)



The material must be kept parallel with the rest block's clamping surface when loading over the pin.

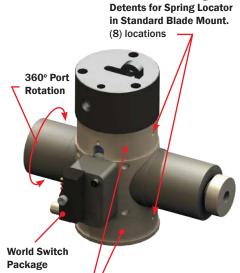




LSFC38 *LOCKING* HOOK CLAMP

A locking single finger clamp designed to stay locked *and* maintain clamping force even if air pressure is removed/lost.

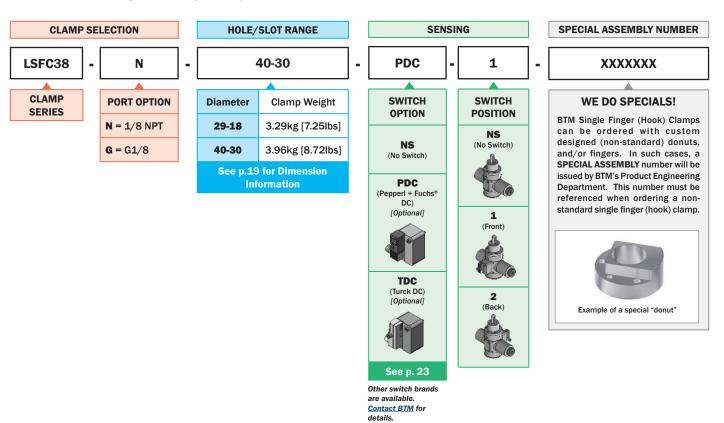
Hole/Slot Size	18mm - 40mm	
Clamping Force	890N - 1334N @ 5.5BAR [200 - 300lbf @ 80PSI]	
Finger Travel	15mm [0.590in] Total. Consists of: • 5mm [0.197in] rotational • 10mm [0.394in] straight line pull down stroke • 3mm [0.118in] locking range (from clamping surface)	
Bore Diameter	38mm [1.50in]	
Cylinder Stroke	38.5mm [1.52in]	



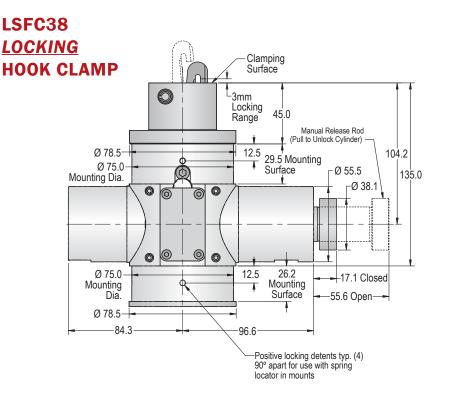
90° Positive Locating

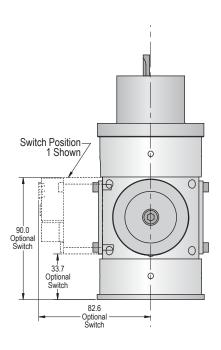


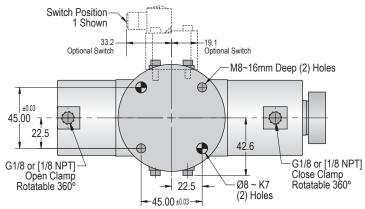
HOW TO ORDER



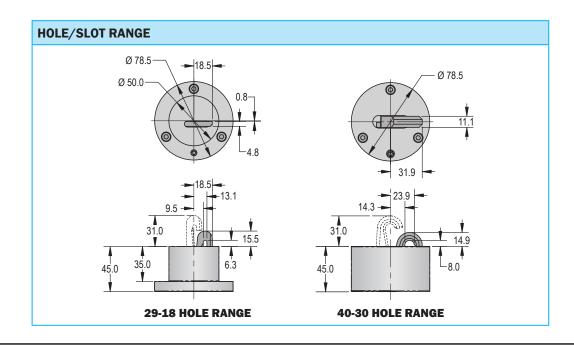










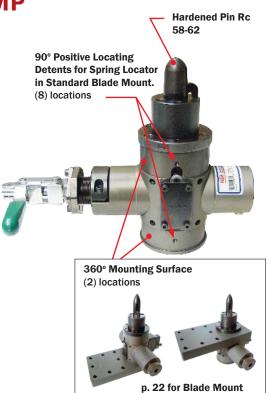




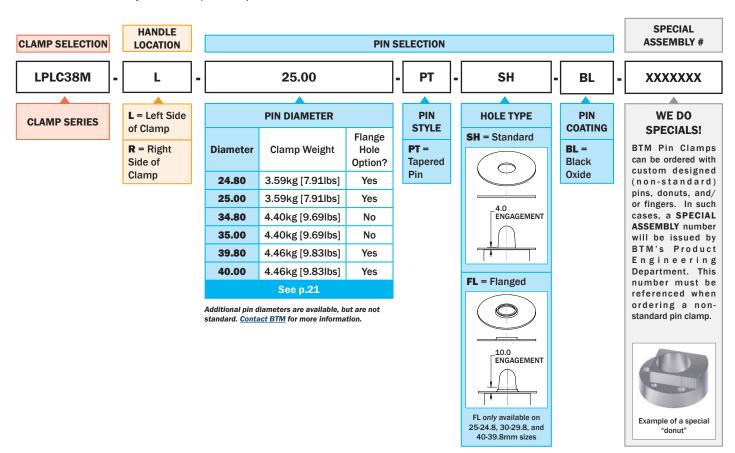
LPLC38M LOCKING MANUAL PIN CLAMP

A locking, manually operated pin locator clamp designed to maintain clamping force in the closed (locked) position.

Hole/Slot Size	18mm - 40mm		
Clamping Force	1112N [250lbf]		
Finger Travel	15mm [0.590in] Total. Consists of: • 5mm [0.197in] rotational • 10mm [0.394in] straight line pull down stroke • 3mm [0.118in] locking range (from clamping surface)		

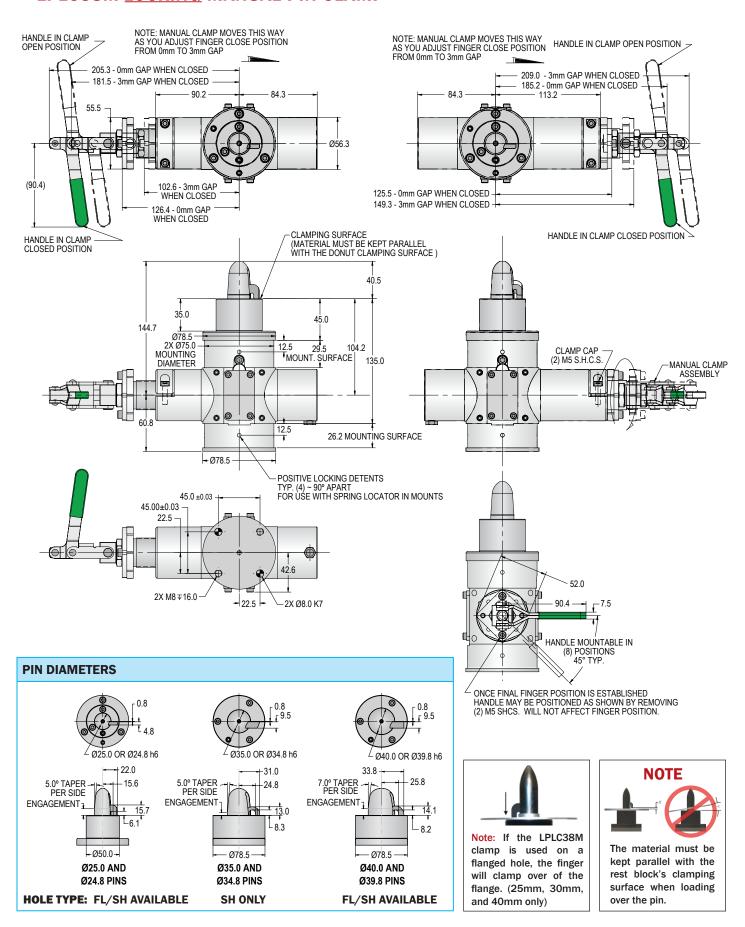


HOW TO ORDER





LPLC38M LOCKING MANUAL PIN CLAMP

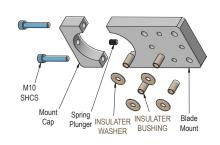


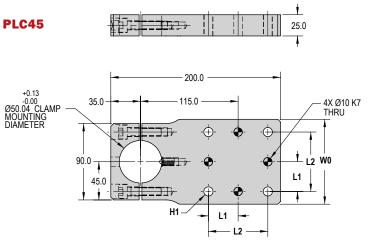


BLADE MOUNT INFORMATION

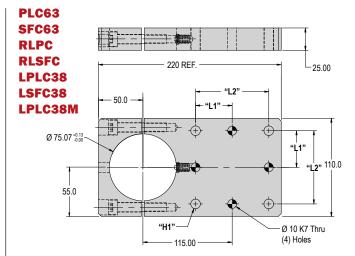
Blade style clamp mounts are currently offered in four different configurations: Insulated or noninsulated for C-flex mounting, and insulated or non-insulated for NAAMS mounting. The insulated mounts are used in welding applications, and come with insulating washers and bushings in the screw holes.







Mount Type	Ø H1 Thru (4) Holes	W0	LO	L1	L2	BTM Number
Insulated C-Flex Mount	12.0 Insulater Bushing	110.0	205.0	41.00	82.00	794400A
C-Flex Mount	12.1	110.0	205.0	41.00	82.00	794400B
Insulated NAAMS Mount	10.0 Insulater Bushing	100.0	200.0	35.00	70.00	794400C
NAAMS Mount	10.8	100.0	200.0	35.00	70.00	794400D



Mount Type	Ø H1 Thru (4) Holes	L1	L2	BTM Part Number
Insulated C-Flex Mount	12.0 Insulator Bushing	41.00	82.00	794100A
C-Flex Mount	12.1	41.00	82.00	794100B
Insulated NAAMS Mount	10.0 Insulator Bushing	35.00	70.00	794100C
NAAMS Mount	10.8	35.00	70.00	794100D

MOUNT PLACEMENT

PLC45, PLC63, SFC63, RLPC, RLSFC, LPLC38, and LSFC38 models have two mounting surfaces from which to apply the blade mount (upper & lower). This allows the user flexibility in choosing the placement of the clamping surface relative to the mounting surface.

PLC, RLPC, SFC & RLSFC Clamps





Lower



LPLC & LSFC Clamps

CLAMP ROTATION

Spring locator for positive locating of mounting reference detents.



Detents are located 4 places 90° apart on round body pin clamps. Detents provided for convenience, but do not need to be used.



3-WAY SHIM MOUNT AVAILABLE

Contact BTM for more information.



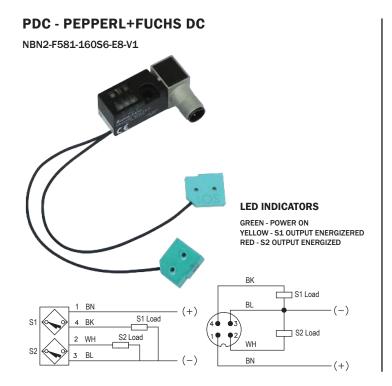
Shims X, Y, Z ± 2.5mm



SWITCH INFORMATION

STANDARD SWITCHES

FOR PLC45, PLC63, SFC63, LPLC38, & LSFC38





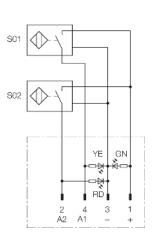
Other switches are also available (including Turck AC), but are not stocked by BTM.

STANDARD SWITCHES

FOR RLPC45, RLPC63, RLSFC63

BDC - TURCK DC







WARRANTY INFORMATION

BTM Company, LLC. warranties its Pin and Hook Clamps against defects in material and workmanship for one (1) million cycles or a period of three (3) years after the ship date from BTM, which ever comes first.

This warranty is limited to replacing or repairing at BTM's option, F.O.B. BTM's factory, any part found by BTM to be defective in materials and/or workmanship. Any application of a BTM product outside the intended use of the product shall not be warranted by BTM Company, LLC. Furthermore, BTM will not be liable for any expenses incurred for repairs or replacement made outside BTM's facilities without written consent (or damages arising out of such replacements or repairs). Under no circumstances will BTM be held responsible for any consequential damages.

The warranty is limited to the repair or replacement of the defective part(s) and does not include installation.

This warranty is the only warranty extended by the seller in connection with any sale made hereunder and is in lieu of all other warranties, express, implied or statutory including warranties of merchantability and fitness for purpose.

BTM ALSO OFFERS XPC PIN LOCATOR CLAMPS



XPC Clamps are Locking Pin Locator Clamps designed with multiple extension lengths to protrude up into hard to reach locator holes while keeping the bulk of the drive cylinder away from the work area.

Model	Hole/Slot Range	Locking?	Manual Option Available?
XPC	24.8-40mm	Yes	Yes



For more information, or to view our other products, please visit:

WWW.BTM-EUROPE.DE