

Pull cylinders - Upper flange models

Shown: PUSS-51, PUSD-121

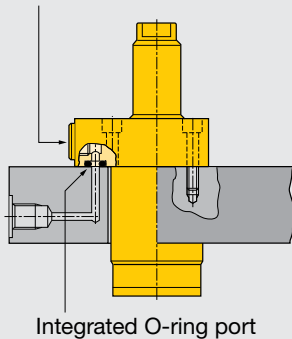


PU series

Upper flange pull cylinders are designed for integrated manifold mounting solutions.

Hydraulic connections are made through SAE or BSPP oil connection or the standard integrated O-ring ports.

Oil connection



Integrated O-ring port

■ Enerpac upper flange pull cylinders in a fixture for gun breech production.



Minimal mounting height

...when space is at a premium

- Guided linear plunger movement
- Flexible design allows for manifold or threaded port connection
- Low profile mounting style allows body to be below mounting surface
- Internal plunger thread allows easy mounting of attachments
- Simple mounting preparation
- Easy to machine fixture hole: does not require tight tolerances
- Easy assembly: 3 or 4 mounting bolts
- Double oil connection: threaded port or manifold mount

Product selection

Cylinder capacity		Stroke	Model number	Cylinder effective area		Oil capacity	
lbs Pull	lbs Push	in		in ² Pull	in ² Push	in ³ Pull	in ³ Push
▼ Single acting							
1250	–	.89	PUSS-51	.28	–	.25	–
2950	–	1.10	PUSS-121	.63	–	.70	–
▼ Double acting							
1400	2950	.89	PUSD-51	.28	.59	.25	.53
2475	6300	.87	PUSD-92	.49	1.25	.42	1.08
3150	6150	1.10	PUSD-121	.63	1.23	.70	1.40
9600	18,400	1.20	PUSD-351	1.92	3.68	2.27	4.35

Note: - Call Enerpac to order models with BSPP oil connections.
- Pull forces for single-acting cylinders reduced due to spring force.

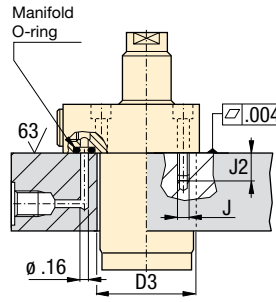
Dimensions in inches []

Model number	A	B	C1	D	D1	D2	E	E1	F	H
				∅			∅	∅		
▼ Single acting										
PUSS-51	5.07	4.18	0.98	1.37	2.13	2.25	0.63	0.59	0.51	0.55
PUSS-121	6.31	5.21	1.00	1.87	2.62	2.88	0.87	0.82	0.68	0.61
▼ Double acting										
PUSD-51	5.07	4.18	0.98	1.37	2.13	2.25	0.63	0.59	0.51	0.55
PUSD-92	5.43	4.57	0.98	1.88	2.76	2.13	0.98	0.93	0.70	0.49
PUSD-121	6.31	5.21	1.00	1.87	2.62	2.88	0.87	0.82	0.68	0.61
PUSD-351	8.04	6.83	0.98	3.14	3.94	3.50	1.50	1.42	1.13	0.49

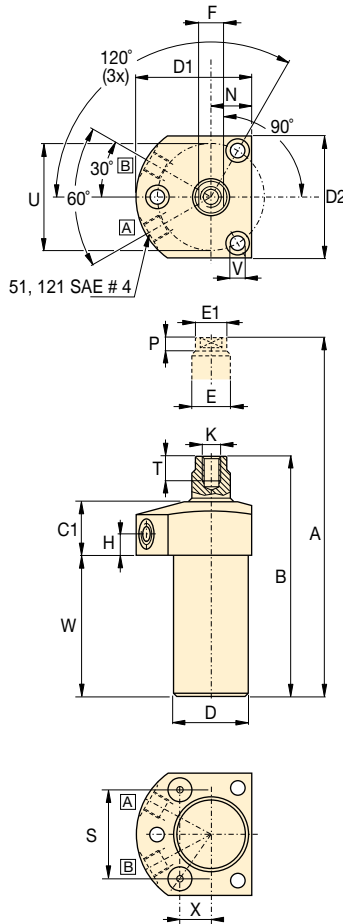
Installation dimensions in inches

Pull force lbs	Fixture hole Ø D3	Mounting thread J UNF	Min. depth J2	Manifold O-ring ¹⁾ ARP numbers or Inside Ø x thickness
1400	1.39	.250-28	.65	568-011
2475	1.93	M6	.59	.17 x .139
3150	1.89	.312-24	.80	568-011
9600	3.06	.375-24	.74	.17 x .139

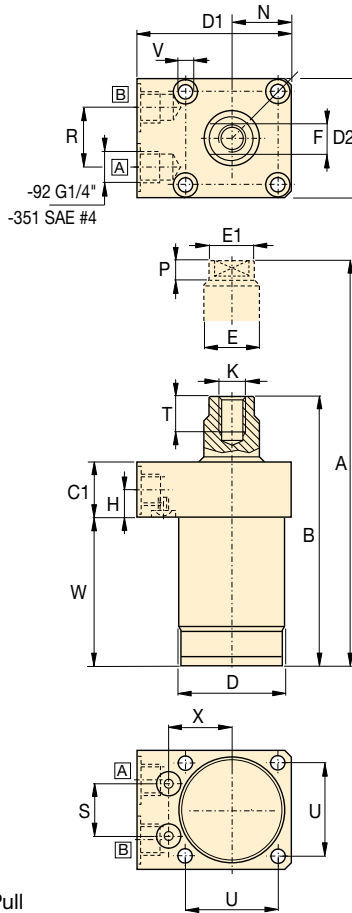
¹⁾ O-ring material: polyurethane, 92 Durometer



-51, 121

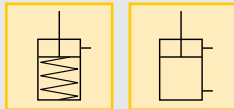


-92, 351



- Pull force: 1250-9600 lbs**
- Push force: 2950-18,400 lbs**
- Stroke: .87-1.20 inch**
- Pressure: 500-5000 psi**

- E Cilindros de tracción**
- F Verins traction**
- D Zugzylinder**



Options

Accessories 86 ▶

Collet-Lok® push cylinders 18 ▶

Swing cylinders 22 ▶

Sequence valves 152 ▶

Important

Single-acting cylinders can be vented through the manifold port.

The upper flange pull cylinder has a bolt pattern which is identical to its lower flange equivalent, enabling interchangeability.

In case there is a risk of machining coolants and debris being inhaled via the breather vent, it is recommended to pipe this port to an area outside the fixture that is protected from machining coolants and debris.

	K	N	P	R	S	T	U	V	W	X	lbs	Model number
								Ø				
												Single acting ▼
	.312-24 UNF	0.75	0.23	-	1.614	0.62	1.97	0.27	2.60	0.565	2.5	PUSS-51
	.500-20 UNF	0.99	0.37	-	2.048	0.75	2.50	0.35	3.38	0.717	3.5	PUSS-121
												Double acting ▼
	.312-24 UNF	0.75	0.23	-	1.614	0.62	1.97	0.27	2.60	0.565	2.5	PUSD-51
	M10 x 1.50	1.04	0.41	1.02	0.934	0.63	1.65	0.26	2.99	1.128	4.4	PUSD-92
	.500-20 UNF	0.99	0.37	-	2.048	0.75	2.50	0.35	3.38	0.717	3.5	PUSD-121
	M16 x 2.00	1.71	0.51	1.02	1.356	1.22	2.76	0.43	3.80	1.637	12.3	PUSD-351

Pull cylinders - Lower flange models

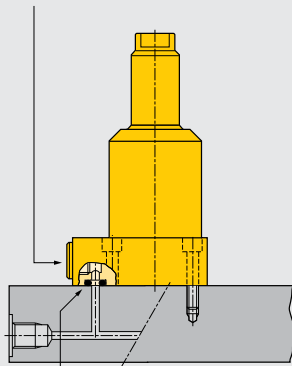
Shown: PLSS-51, PLSS-121



PL series

The lower flange cylinders are designed for integrated manifold mounting solutions. Hydraulic connections are made through SAE or BSPP oil connection or the standard integrated O-ring ports.

Oil connection



Integrated O-ring port

Minimal mounting height

...when space is at a premium

- Guided linear plunger movement
- Flexible design allows for manifold or threaded port connection
- Low profile mounting style allows body to be below mounting surface
- Internal plunger thread allows easy mounting of attachments
- Easiest mounting preparation in the line
- Easy to machine fixture hole: does not require tight tolerances
- Easy assembly: 3 or 4 mounting bolts
- Double oil connection: threaded port or manifold mount

Product selection

Cylinder capacity		Stroke	Model number	Cylinder effective area		Oil capacity	
lbs Pull	Push	in		in ² Pull	Push	in ³ Pull	Push
▼ Single acting							
1250	–	.89	PLSS-51	.28	–	.25	–
2950	–	1.10	PLSS-121	.63	–	.70	–
▼ Double acting							
1400	2950	.89	PLSD-51	.28	.59	.25	.53
2475	6300	.87	PLSD-92	.49	1.25	.42	1.08
3150	6150	1.10	PLSD-121	.63	1.23	.70	1.40
9600	18,400	1.20	PLSD-351	1.92	3.68	2.27	4.35

Note: - Call Enerpac to order models with BSPP oil connections.
- Pull forces for single-acting cylinders reduced due to spring force.

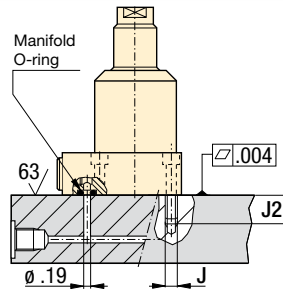
Dimensions in inches []

Model number	A	B	C1	D	D1	D2	E	E1	F	H
				∅			∅	∅		
▼ Single acting										
PLSS-51	5.07	4.18	0.98	1.37	2.13	2.25	0.63	0.59	0.51	0.55
PLSS-121	6.31	5.21	1.00	1.87	2.62	2.88	0.87	0.82	0.68	0.61
▼ Double acting										
PLSD-51	5.07	4.18	0.98	1.37	2.13	2.25	0.63	0.59	0.51	0.55
PLSD-92	5.43	4.57	0.98	1.88	2.76	2.13	0.98	0.93	0.7	0.49
PLSD-121	6.31	5.21	1	1.87	2.62	2.88	0.87	0.82	0.68	0.61
PLSD-351	8.04	6.83	0.98	3.14	3.94	3.5	1.5	1.42	1.13	0.49

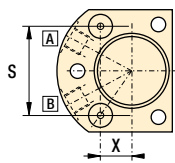
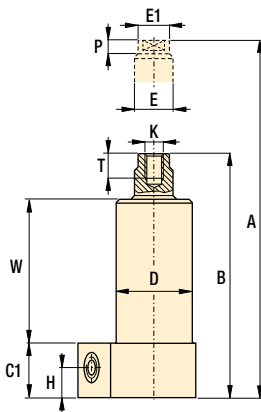
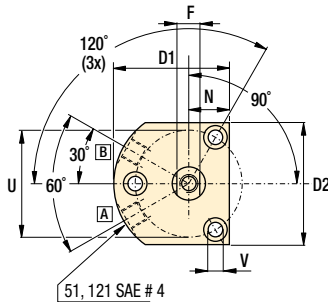
Installation dimensions in inches

Pull force lbs	Mounting thread J UNF	Minimum depth J2	Manifold O-ring ¹⁾ ARP numbers or inside Ø x thickness
1400	.250-28	.65	568-011
2475	M6	.59	.17 x .139
3150	.312-24	.80	568-011
9600	.375-24	.74	.17 x .139

¹⁾ O-ring material: polyurethane, 92 Durometer

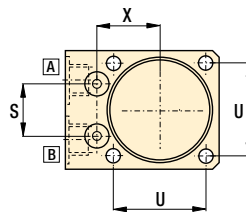
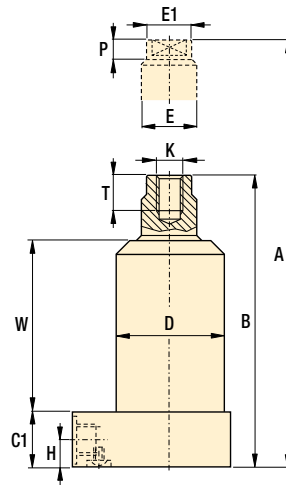
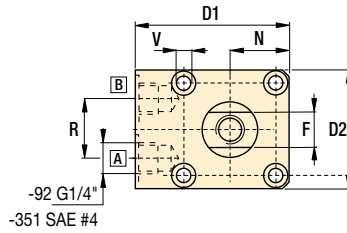


-51, -121



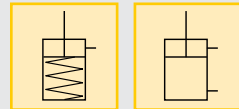
[A] = Pull
[B] = Push (venting)

-92, -351




- Pull force: 1250-9600 lbs**
- Push force: 2950-18,400 lbs**
- Stroke: .86-1.20 inch**
- Pressure: 500-5000 psi**


- E Cilindros de tracción**
- F Verins traction**
- D Zugzylinder**




Options

Accessories  [86](#)

Collet-Lok® push cylinders  [18](#)

Swing cylinders  [22](#)


Sequence valves  [152](#)

Important

Single-acting cylinders can be vented through the manifold port.

The lower flange pull cylinder has a bolt pattern which is identical to its upper flange equivalent, enabling interchangeability.

In case there is a risk of machining coolants and debris being inhaled via the breather vent, it is recommended to pipe this port to an area outside the fixture that is protected from machining coolants and debris.

	K	N	P	R	S	T	U	V	W	X		Model number
								Ø			lbs	
	Single acting ▼											
	.312-24 UNF	0.75	0.23	-	1.614	0.62	1.97	0.27	2.60	0.565	2.5	PLSS-51
	.500-20 UNF	0.99	0.37	-	2.048	0.75	2.50	0.35	3.38	0.717	3.5	PLSS-121
	Double acting ▼											
	.312-24 UNF	0.75	0.23	-	1.614	0.62	1.97	0.27	2.60	0.565	2.5	PLSD-51
	M10 x 1.50	1.04	0.41	1.02	0.934	0.63	1.65	0.26	2.99	1.128	4.4	PLSD-92
	.500-20 UNF	0.99	0.37	-	2.048	0.75	2.50	0.35	3.38	0.717	3.5	PLSD-121
	M16 X 2.00	1.71	0.51	1.02	1.356	1.22	2.76	0.43	3.80	1.637	12.3	PLSD-351

Pull cylinders - Threaded body models

Shown: PTSS-51, PTSD-121

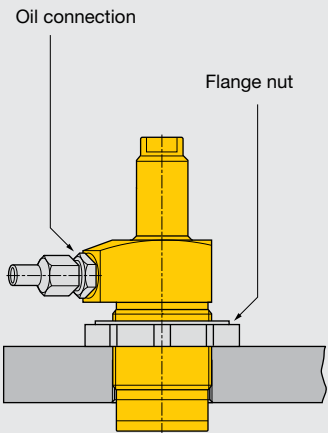


PT-series

The threaded body pull cylinders can be bolted to the fixture.

This allows easy installation or removal of the unit and does not require machined fixture holes.

The cylinder is adjusted to the appropriate height, and then locked in place using a flange nut (□86).



■ Threaded body pull cylinder with modified clamp arm, mounted on a frame-straightening fixture.



Threaded directly into the fixture

...can be secured at any height

- Guided linear plunger movement
- Threaded port connection
- Internal plunger thread allows easy mounting of attachments
- Simple mounting preparation
- Easy installation and removal
- Greatest flexibility in fixture design

Product selection

Cylinder capacity		Stroke in	Model number	Cylinder effective area		Oil capacity	
lbs Pull	Push			in ² Pull	Push	in ³ Pull	Push
▼ Single acting							
1250	–	.89	PTSS-51	.28	–	.25	–
2950	–	1.10	PTSS-121	.63	–	.70	–
▼ Double acting							
1400	2950	.89	PTSD-51	.28	.59	.25	.53
2475	6300	.87	PTSD-92	.49	1.25	.42	1.08
3150	6150	1.10	PTSD-121	.63	1.23	.70	1.40
9600	18,400	1.20	PTSD-351	1.92	3.68	2.27	4.35

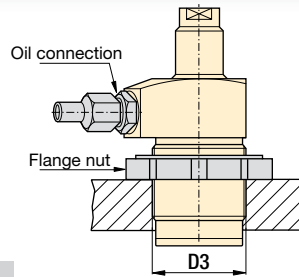
Note: - Call Enerpac to order models with BSPP oil connections.
- Pull forces for single-acting cylinders reduced due to spring force.

Dimensions in inches []

Model number	A	B	C1	D	D1	D2	E
				Thread			Ø
▼ Single acting							
PTSS-51	5.07	4.18	0.98	1.375-18 UNEF	1.88	1.49	0.63
PTSS-121	6.31	5.22	1.00	1.875-16 UN	2.38	2.00	0.87
▼ Double acting							
PTSD-51	5.07	4.18	0.98	1.375-18 UNEF	1.88	1.49	0.63
PTSD-92	5.12	4.25	1.19	M48 x 1,5	2.47	1.90	0.98
PTSD-121	6.31	5.22	1.00	1.875-16 UN	2.38	2.00	0.87
PTSD-351	7.72	6.52	1.26	3.125-16 UN	3.48	3.15	1.50

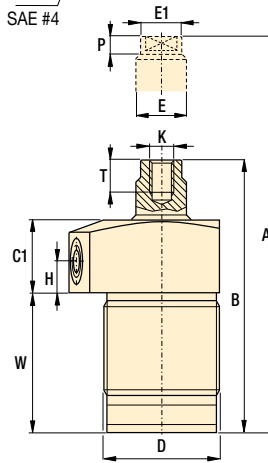
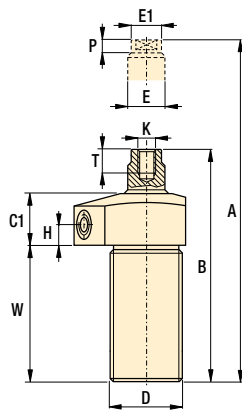
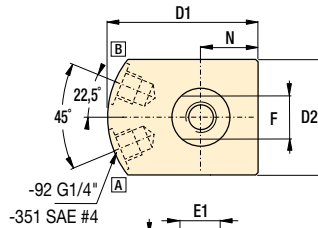
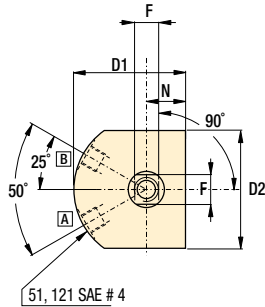
Installation dimensions in inches

Pull force lbs	Fixture hole thread size D3
1400	1.375-18 UNEF
2475	M48 x 1.5
3150	1.875-16 UNF
9600	3.125-16 UN



-51, 121

-92, -351



A = Pull
B = Push (venting)

Accessory chart

Model number	Mounting flange Sold separately 87 ▶	Flange nut Sold separately 86 ▶	Yoke Sold separately
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▼ Single acting

PTSS-51	MF-351	FN-351	Y3121
PTSS-121	MF-481	FN-811	

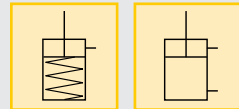
▼ Double acting

PTSD-51	MF-351	FN-351	Y3121
PTSD-92	MF-482	FN-482	
PTSD-121	MF-481	FN-481	
PTSD-351	MF-801	FN-801	

	E1	F	H	K	N	P	T	W	lbs	Model number
	∅									
										Single acting ▼
	.59	.51	.38	.313-24 UNF	.75	.23	.62	2.60	2.5	PTSS-51
	.82	.68	.38	.500-20 UNF	1.00	.38	.75	3.38	3.5	PTSS-121
										Double acting ▼
	.59	.51	.38	.313-24 UNF	.75	.23	.62	2.60	2.5	PTSD-51
	.93	.70	.51	M10 x 1.5	.95	.41	.63	2.47	4.4	PTSD-92
	.82	.68	.38	.500-20 UNF	1.00	.38	.75	3.38	3.5	PTSD-121
	1.42	1.13	.51	M16 x 2.0	1.57	.51	1.22	3.22	10.4	PTSD-351

- Pull force: 1250-9600 lbs**
- Push force: 2950-18,400 lbs**
- Stroke: .87-1.20 inch**
- Pressure: 500-5000 psi**

- E** Cilindros de tracción
- F** Verins traction
- D** Zugzylinder



Options

- Accessories** 86 ▶
- Collet-Lok® swing cylinders** 18 ▶
- Swing cylinders** 22 ▶
- Sequence valves** 152 ▶

Important

Single-acting cylinders can be vented through the manifold port.

In case there is a risk of machining coolants and debris being inhaled via the breather vent, it is recommended to pipe this port to an area outside the fixture that is protected from machining coolants and debris.