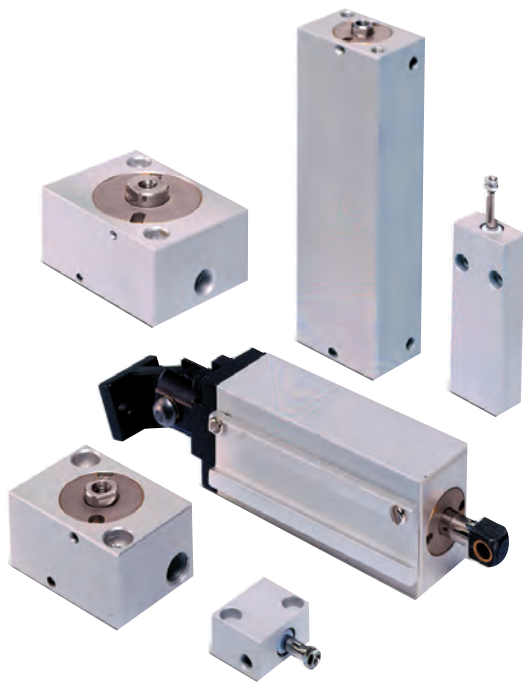


Metric Cylinders



COMPACT[®]
AUTOMATION PRODUCTS

LDA belgium

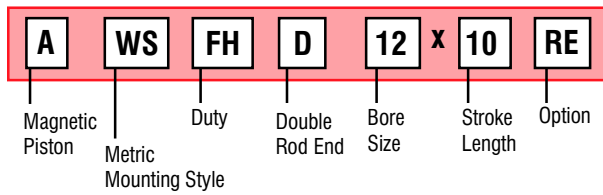


How To Order

Metric Cylinders

Creating a Part Number

Example: AWSFHD12x10RE



A *Optional Magnetic Piston*

WS *Metric Mounting Style*

FH *Optional Duty Type*

D *Optional Double Rod End*

12 *Bore Size*

10 *Stroke Length*

RE *Option*

Modifications Welcome

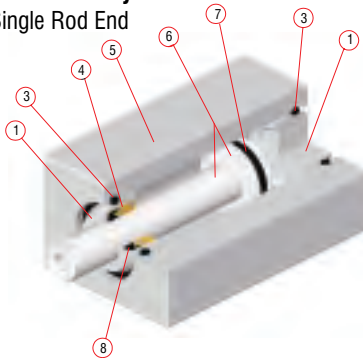
Special stroke lengths, port orientation, mounting configuration, rod ends.

Compact Air Products, Inc. • P.O. Box 499 • Westminster, SC 29693 • **Phone:** 864-647-9521 • **Fax:** 864-647-9574 **Website:** www.compactair.com • **E-Mail:** techsales@compactair.com

3

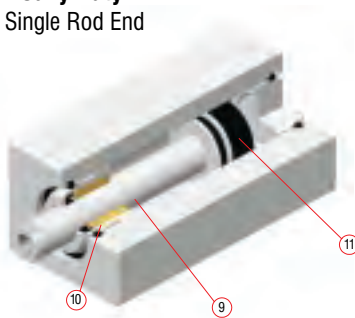
8mm and 12mm Bore Double Acting, Snap-Cap® Design

Standard Duty Single Rod End



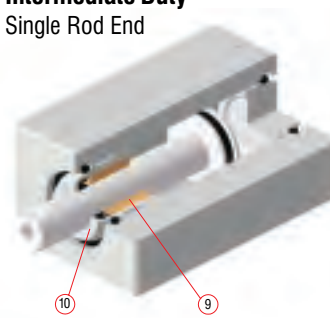
Heavy Duty

Single Rod End

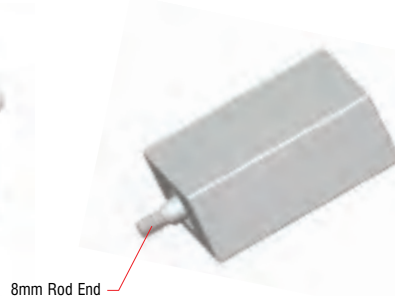
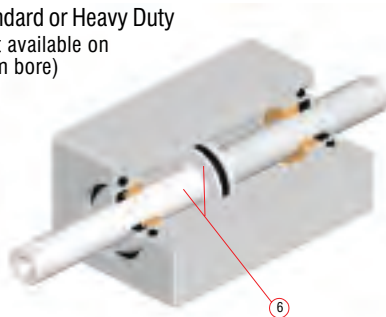


Intermediate Duty

Single Rod End



Double Rod End
Standard or Heavy Duty
(Not available on
8mm bore)

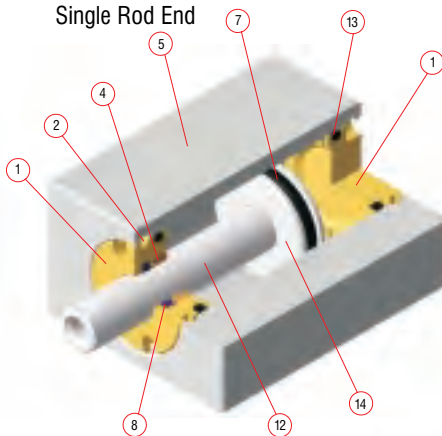


No.	Description	Material
1	End Cap	8mm: Plastic 12mm-40mm: Aluminum
3	Retainer Seal	O-ring
4	Rod Bearing	Bronze
5	Cylinder Body	Aluminum
6	Solid Piston Rod Assembly	Stainless Steel
7	Piston Seal	Low Friction Nitrile
8	Rod Seal	Low Friction Nitrile
9	Husky® Rod Bearing	Bronze
10	Husky® End Cap	Aluminum
11	Wear Collar	Aluminum with "TFE" Coating

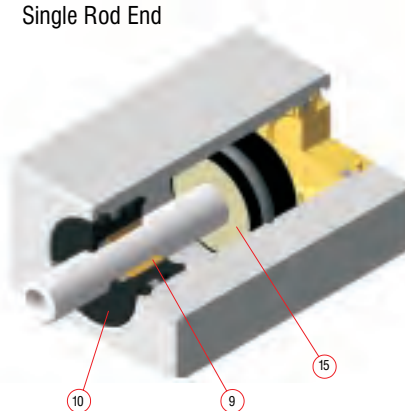
Snap-Cap®, Magnetic Piston and Hydraulic option cylinder constructions may deviate from above listing — consult factory for additional information.

20mm - 40mm Bore Double Acting, Retaining Wire Design

Standard Duty Single Rod End

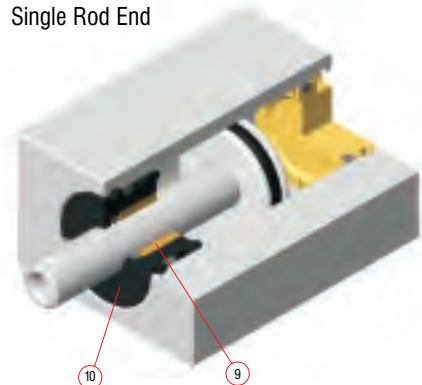


Heavy Duty Single Rod End



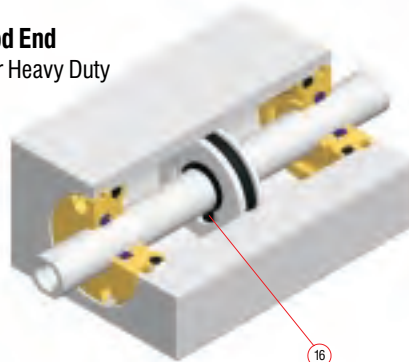
Intermediate Duty

Single Rod End



Double Rod End

Standard or Heavy Duty



No.	Description	Material
1	End Cap	Aluminum
2	Retaining Wire	Stainless Steel
4	Rod Bearing	Bronze
5	Cylinder Body	Aluminum
7	Piston Seal	Low Friction Nitrile
8	Rod Seal	Low Friction Nitrile
9	Husky® Rod Bearing	Bronze
10	Husky® End Cap	Aluminum
12	Tuf-Coat II® Piston Rod	Stainless Steel with Custom Finish
13	End Cap Seal	O-ring
14	Piston	Aluminum
15	Tuf-Coat® Piston	Aluminum with "TFE" Coating
16	Snap Ring	Carbon Steel Spring

Magnetic Piston and Hydraulic option cylinder constructions may deviate from above listing — consult factory for additional information.



Optional Magnetic Piston -
Available on any cylinder, style or duty.

Available Strokes

Key

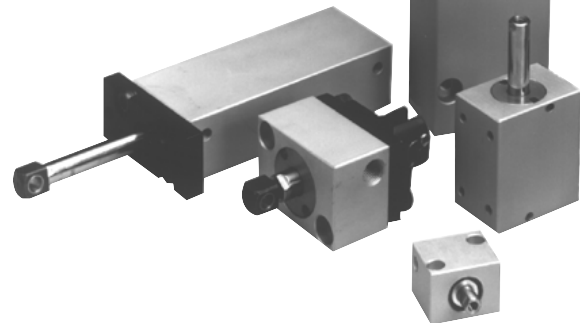
	Available stroke lengths for styles “S”, “B”, & “T”
	Available stroke lengths for styles “S” & “B” only
	Non-available stroke lengths

8mm - 40mm Bores

			Stroke Lengths									
Bore	Non-magnetic Piston		5	10	15	20	25	30	35	40	45	50
8	Duty	Standard	•	•	•	•	•					
		Intermediate	•	•	•	•	•	•				
		Heavy	•	•	•	•	•	•	•	•		
	Magnetic Piston		5	10	15	20	25	30	35	40	45	50
	Duty	Standard	•	•	•	•	•					
		Intermediate	•	•	•	•	•	•				
Heavy		•	•	•	•	•	•					



Other stroke lengths
available, consult factory.

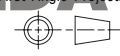
[illegible][illegible][illegible]



8mm Bore

Snap-Cap® Design

Non Magnetic and Magnetic Piston

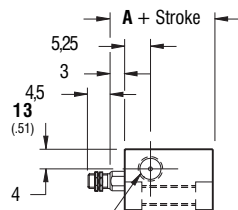
☐ First Angle Projection ☐ Double Acting

Fitting: 10-32 inch thread will fit and function in M5 port.

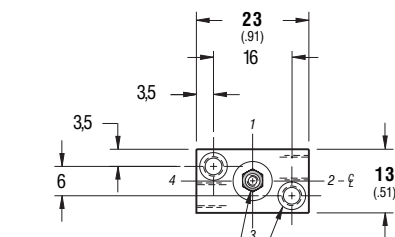
		Part Number		
Duty		Single Rod	Stock Stroke Length	A
Non Magnetic Piston	Standard	WS8x____	5	16

Standard Mounting:

TF	TR
TM	TBE

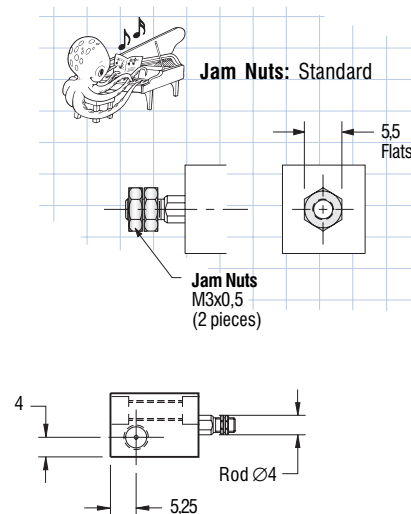


Port
M5x0,8 Tap x 5 Dp
(2 Places)



Rod End
M3x0,5 Turned Male Threads
3,5 Wrench Flats
(See jam nut note above)

Mounting Hole
M4x0,7 Tap Thru
Thru Mount for M3x0,5 SHCS
5,65 Dia C'bore x 3,5 Dp
(2 Per End)



Jam Nuts: Standard

Jam Nuts
M3x0,5
(2 pieces)

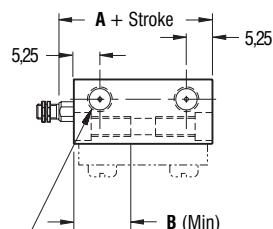
		Part Number			
Duty		Single Rod	Stock Stroke Length (in 5mm increments)	A	B
Non Magnetic Piston	Standard	WS8x_____	10 - 15	16	9,5
	Intermediate	WSHH8x_____	5 -10	21	9,5
	Heavy	WSFH8x_____	5	26	9,5
Magnetic Piston	Standard	AWS8x_____	5	26	11,5

Standard Mounting:

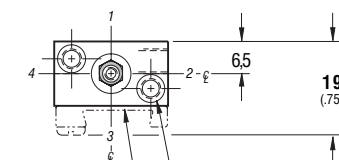
TF TR TM TBE

This stroke length allows only one sensor.

— Information same as above except where noted —



— **Port**
M5x0,8 Tap x 5 Dp
(2 Places)



Optional Sensor Mounting Track

– **Mounting Hole**
M4x0,7 Tap
Thru Mount for M3x0,5 SHCS
5,65 Dia C'bore x 3,5 Dp
(2 Per End)

		Part Number		
Duty		Single Rod	Stock Stroke Length (in 5mm increments)	A
Non Magnetic Piston	Standard	WS8x 1/2" dia. x 8" long	20 - 25	16
	Intermediate	WSHH8x 1/2" dia. x 8" long	15 - 30	21
	Heavy	WSFH8x 1/2" dia. x 8" long	10 - 40	26
Magnetic Piston	Standard	AWS8x 1/2" dia. x 8" long	10 - 25	26
	Intermediate	AWSHH8x 1/2" dia. x 8" long	5 - 30	31
	Heavy	AWSFH8x 1/2" dia. x 8" long	5 - 30	36

Standard Mounting: **TF**

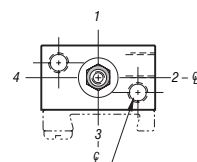
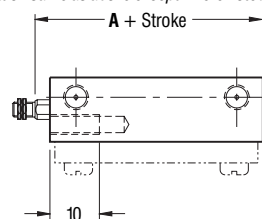
Optional Mounting: Specify suffix

TR	TBE	TM*
----	-----	-----

*38mm body length and shorter

Body lengths 42mm and shorter
allow only one sensor.

—Information same as above except where noted—



- **Mounting Hole**
M4x0,7 Tap
(2 Places)





First Angle Projection

Double Acting

Fitting: 10-32 inch thread will fit and function in M5 port.

Snap-Cap® Design

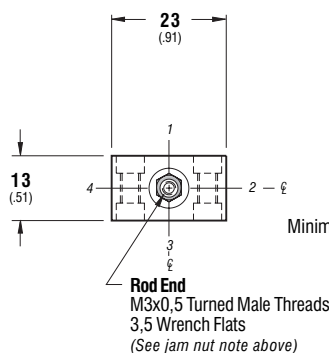
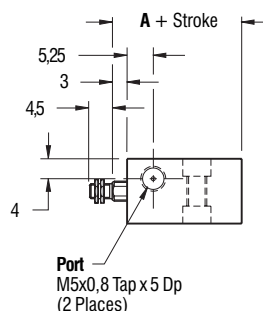
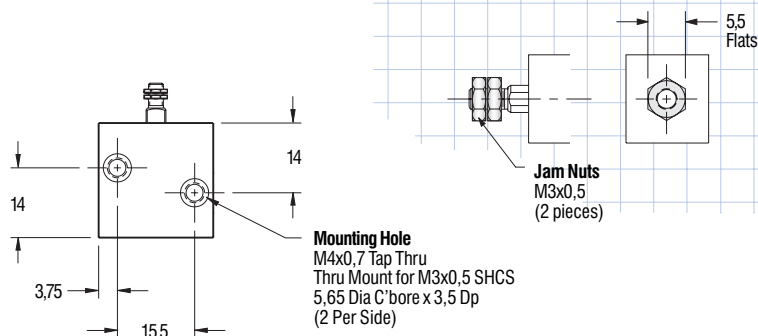
8mm Bore

Non Magnetic and Magnetic Piston

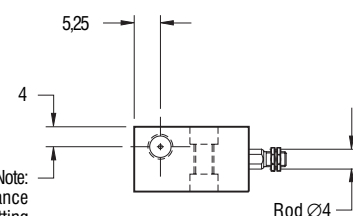
		Part Number		
Duty	Single Rod	Stock Stroke Length (in 5mm increments)	A	
Non Magnetic Piston	Standard	WB8x_____	5 - 10	16
	Intermediate	WBHH8x_____	5	21



Jam Nuts: Standard

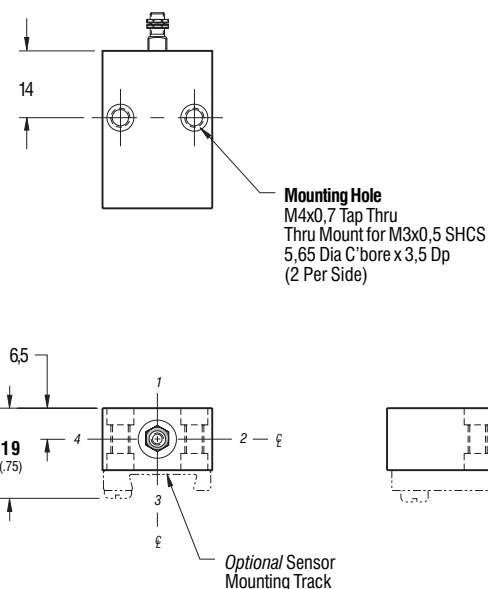
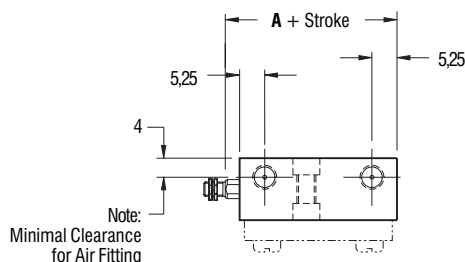


Note:
Minimal Clearance
for Air Fitting



		Part Number		
Duty	Single Rod	Stock Stroke Length (in 5mm increments)	A	
Non Magnetic Piston	Standard	WB8x_____	15 - 25	16
	Intermediate	WBHH8x_____	10 - 30	21
	Heavy	WBFH8x_____	5 - 40	26
Magnetic Piston	Standard	AWB8x_____	5 - 25	26
	Intermediate	AWBHH8x_____	5 - 30	31
	Heavy	AWBFH8x_____	5 - 30	36

—Information same as above except where noted—



All dimensions are in millimeters
unless otherwise noted.



8mm Bore

Snap-Cap® Design

Non Magnetic and Magnetic Piston

First Angle Projection



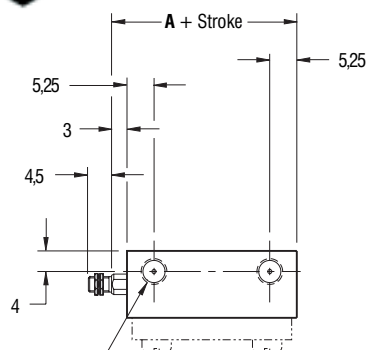
Double Acting



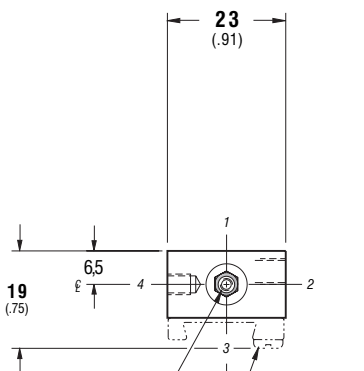
Fitting: 10-32 inch thread will fit and function in M5 port.

		Part Number		
Duty		Single Rod	Stock Stroke Length (in 5mm increments)	A
NonMagnetic Piston	Standard	WT8x WATER TIGHT 8mm STROKE	10 - 25	16
	Intermediate	WTHH8x WATER TIGHT HIGH 8mm STROKE	5 - 30	21
	Heavy	WTFH8x WATER TIGHT FUL 8mm STROKE	5 - 40	26
Magnetic Piston	Standard	AWT8x AWT 8mm STROKE	5 - 25	26
	Intermediate	AWTHH8x AWT HIGH 8mm STROKE	5 - 30	31
	Heavy	AWTFH8x AWT FUL 8mm STROKE	5 - 30	36

Body lengths 42mm and shorter
allow only one sensor.

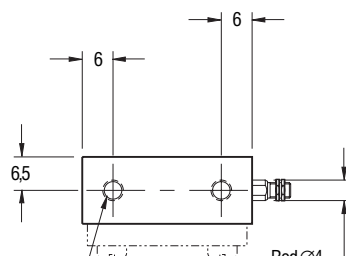


Port
M5x0,8 Tap x 5 Dp
(2 Places)



Rod End —
M3x0,5 Turned
Male Threads
3,5 Wrench Flats
(See *jam nut* note)

Optional Sensor Mounting Track



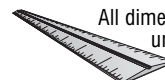
Mounting Hole
M4x0,7 Tap x 4,5 Dp
(2 Places)

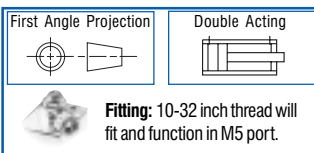
Jam Nuts: Standard



→ ← 5,5 Flats

Jam Nuts
M3x0,5
(2 pieces)





Snap-Cap® Design

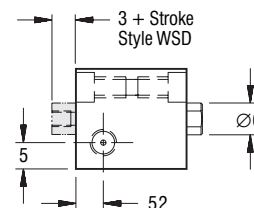
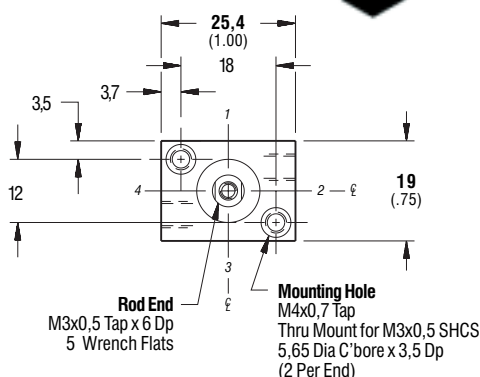
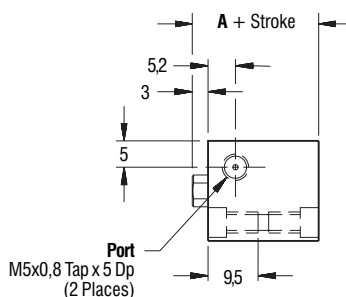
12mm Bore

Non Magnetic and Magnetic Piston

		Part Number		Stock Stroke Length (in 5mm increments)	A
Duty		Single Rod	Double Rod		
Non Magnetic Piston	Standard	WS12x__	WSD12x__	5	19

Standard Mounting:
TF TR TM TBE

This stroke length allows only one sensor.

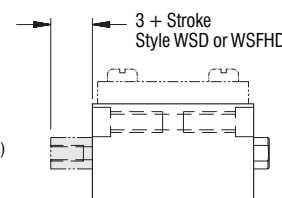
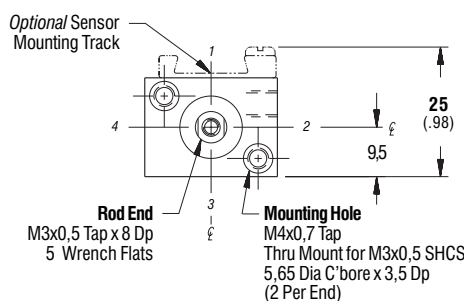
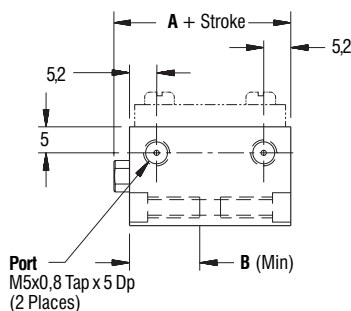


		Part Number		Stock Stroke Length (in 5mm increments)	A	B
Duty		Single Rod	Double Rod			
Non Magnetic Piston	Standard	WS12x__	WSD12x__	10 - 15	19	11.5
	Intermediate	WSHH12x__		5 - 10	24	11.5
	Heavy	WSFH12x__	WSFHD12x__	5	29	13.5
Magnetic Piston	Standard	AWS12x__	AWSD12x__	5	29	13.5

Standard Mounting:
TF TR TM TBE

This stroke length allows only one sensor.

—Information same as above except where noted—

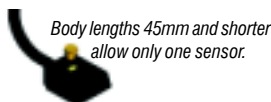


		Part Number		Stock Stroke Length (in 5mm increments)	A
Duty		Single Rod	Double Rod		
Non Magnetic Piston	Standard	WS12x__	WSD12x__	20 - 50	19
	Intermediate	WSHH12x__		15 - 50	24
	Heavy	WSFH12x__	WSFHD12x__	10 - 50	29
Magnetic Piston	Standard	AWS12x__	AWSD12x__	10 - 50	29
	Intermediate	AWSHH12x__		5 - 50	34
	Heavy	AWSFH12x__	AWSFHD12x__	5 - 50	39

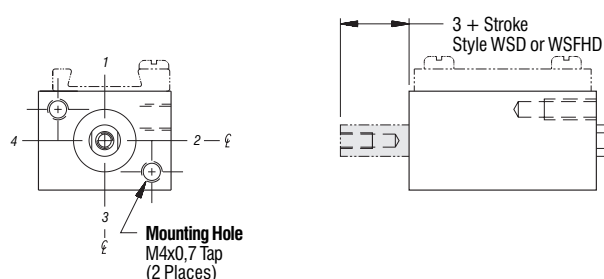
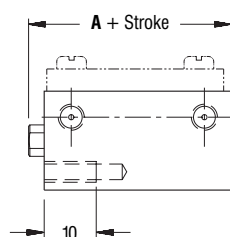
Standard Mounting: TF
Optional Mounting: Specify suffix

TR TBE TM*

*41mm body length and shorter



—Information same as above except where noted—



All dimensions are in millimeters unless otherwise noted.

Part Number X Stroke Option - See 'Accessories' section

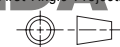
COMPACT® Metric Cylinders



12mm Bore

Non Magnetic and Magnetic Piston

Snap-Cap® Design

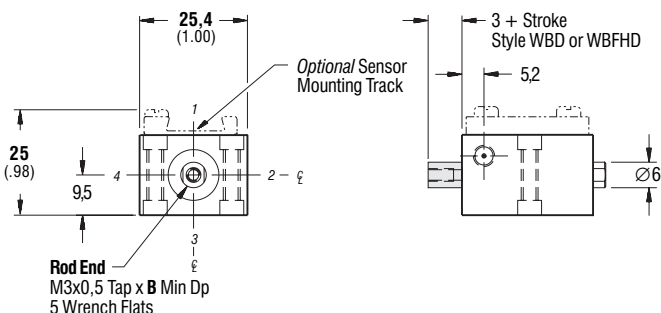
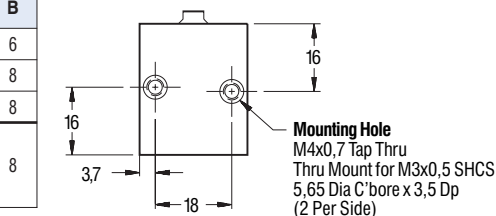
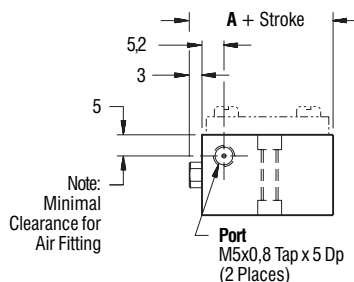
☐ First Angle Projection ☐ Double Acting

Fitting: 10-32 inch thread will fit and function in M5 port.

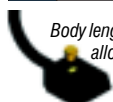
		Part Number				
Duty		Single Rod	Double Rod	Stock Stroke Length (in 5mm increments)	A	B
Non Magnetic Piston	Standard	WB12x____	WBD12x____	5 - 15	19	6
	Intermediate	WBHH12x____		5 - 10	24	8
	Heavy	WBFH12x____	WBFHD12x____	5	29	8
Magnetic Piston	Standard	AWB12x____	AWBD12x____	5	29	8



This stroke length allows only one sensor.

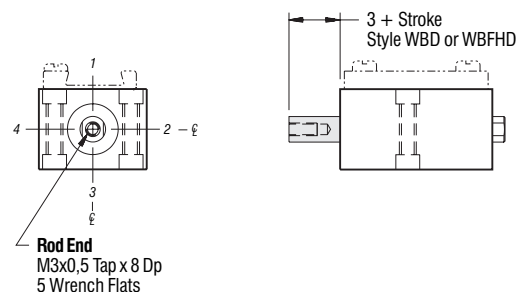
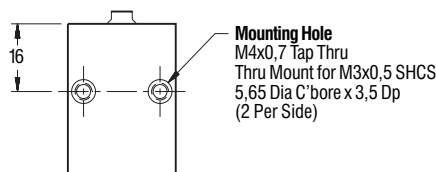
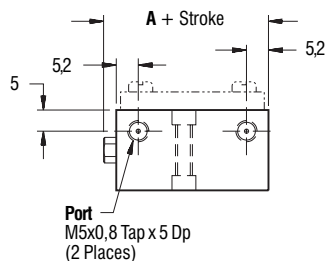


		Part Number			
Duty		Single Rod	Double Rod	Stock Stroke Length (in 5mm increments)	A
Non Magnetic Piston	Standard	WB12x____	WBD12x____	20 - 50	19
	Intermediate	WBHH12x____		15 - 50	24
	Heavy	WBFH12x____	WBFHD12x____	10 - 45	29
Magnetic Piston	Standard	AWB12x____	AWBD12x____	10 - 50	29
	Intermediate	AWBHH12x____		5 - 50	34
	Heavy	AWBFH12x____	AWBFHD12x____	5 - 45	39



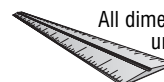
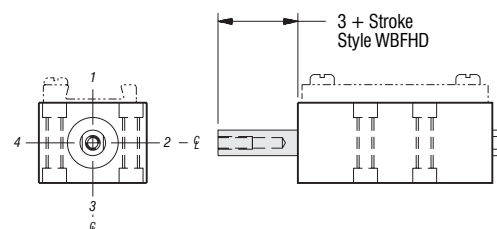
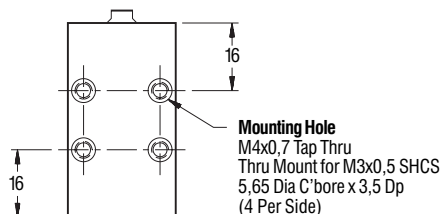
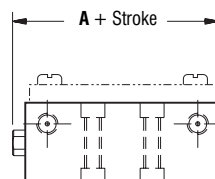
Body lengths 45mm and shorter
allow only one sensor.

—Information same as above except where noted—



		Part Number			
Duty		Single Rod	Double Rod	Stock Stroke Length (in 5mm increments)	A
Non Magnetic Piston	Heavy	WBFH12x___	WBFD12x___	50	29
Magnetic Piston	Heavy	AWBFH12x____ AWBFD12x____		50	39

—Information same as above except where noted—



First Angle Projection

Double Acting

Fitting: 10-32 inch thread will fit and function in M5 port.

Snap-Cap® Design

LDA belgium

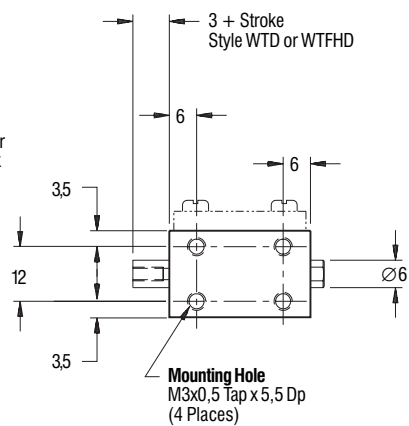
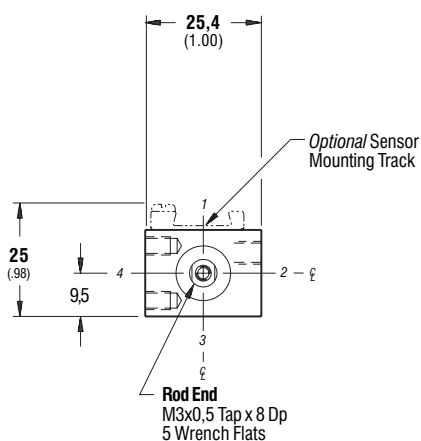
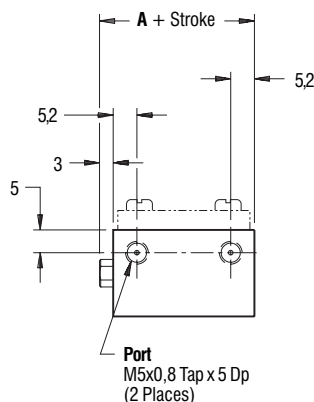
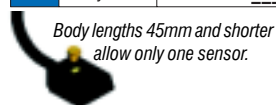
12mm Bore
Non Magnetic and Magnetic Piston

Styles T/AT



Side Mount

		Part Number		Stock Stroke Length (in 5mm increments)	A
Duty		Single Rod	Double Rod		
Non Magnetic Piston	Standard	WT12x_____	WTD12x_____	10 - 50	19
	Intermediate	WTHH12x_____		5 - 50	24
	Heavy	WTFH12x_____	WTFHD12x_____	5 - 50	29
Magnetic Piston	Standard	AWT12x_____	AWTD12x_____	5 - 50	29
	Intermediate	AWTHH12x_____		5 - 50	34
	Heavy	AWTFH12x_____	AWTFHD12x_____	5 - 50	39



12mm Bore • 12mm Bore • 12mm Bore • 12mm Bore • 12mm Bore • 12mm Bore • 12mm Bore



20mm Bore

Non Magnetic and Magnetic Piston

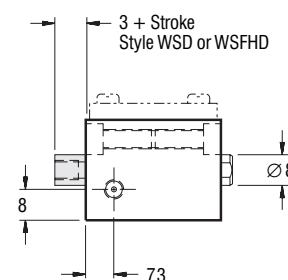
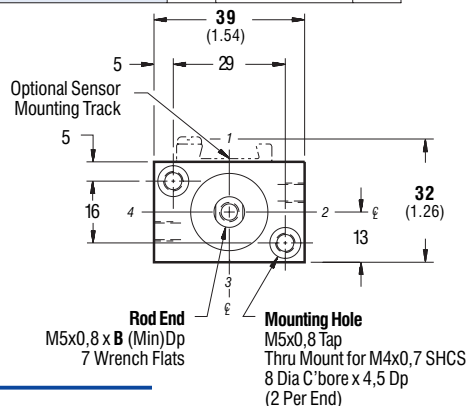
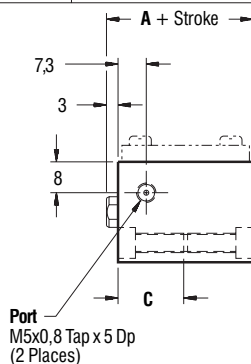


		Part Number		Stock Stroke Length in 5mm increments	A	B per 5mm, respectively	C
Duty		Single Rod	Double Rod				
Non Magnetic Piston	Standard	WS20x	WSD20x	5, 10, 15	23	8, 10, 12,5	12,5
	Intermediate	WSHH20x		5, 10	28	10, 12,5	15
	Heavy	WSFH20x	WSFHD20x	5	33	12,5	17,5
Magnetic Piston	Standard	AWS20x	AWSD20x	5	33	10	17,5

Standard Mounting:

TF TR TM TBE

This stroke length allows only one sensor.



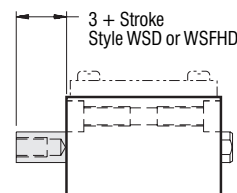
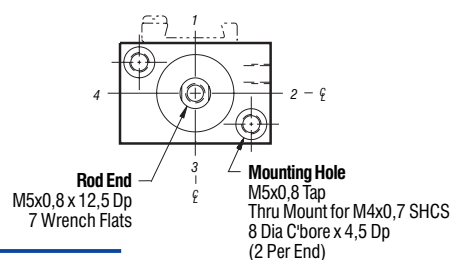
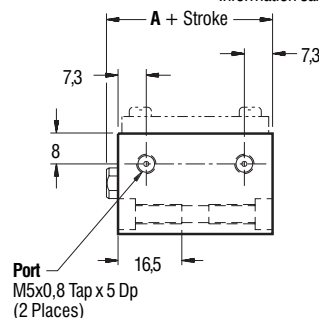
		Part Number		Stock Stroke Length (in 5mm increments)	A
Duty		Single Rod	Double Rod		
Non Magnetic Piston	Standard	WS20x	WSD20x	20 - 25	23
	Intermediate	WSHH20x		15 - 20	28
	Heavy	WSFH20x	WSFHD20x	10 - 15	33
Magnetic Piston	Standard	AWS20x	AWSD20x	10 - 15	33
	Intermediate	AWSHH20x		5 - 10	38
	Heavy	AWSFH20x	AWSFHD20x	5	43

— Information same as above except where noted —

Standard Mounting:

TF TR TM TBE

Body lengths 44mm and shorter allow only one sensor.



		Part Number		Stock Stroke Length (in 5mm increments)	A
Duty		Single Rod	Double Rod		
Non Magnetic Piston	Standard	WS20x	WSD20x	30 - 100	23
	Intermediate	WSHH20x		25 - 100	28
	Heavy	WSFH20x	WSFHD20x	20 - 100	33
Magnetic Piston	Standard	AWS20x	AWSD20x	20 - 100	33
	Intermediate	AWSHH20x		15 - 100	38
	Heavy	AWSFH20x	AWSFHD20x	10 - 100	43

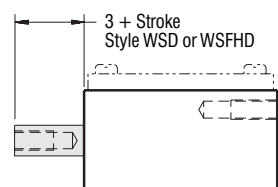
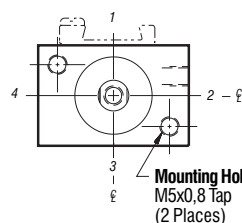
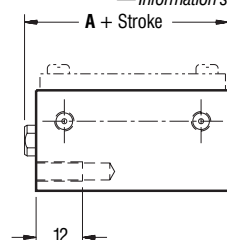
— Information same as above except where noted —

Standard Mounting: TF

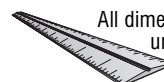
Optional Mounting: Specify suffix

TR TBE TM*

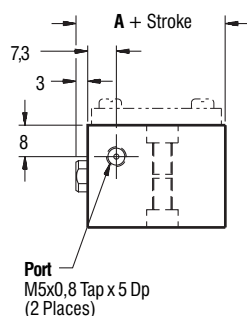
*70mm body length and shorter



All dimensions are in millimeters unless otherwise noted.



This stroke length allows only one sensor



Optional Sensor Mounting Track

39
(1.54)

32
(1.26)

4

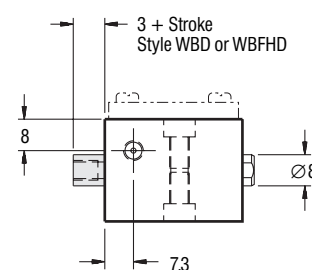
13

1

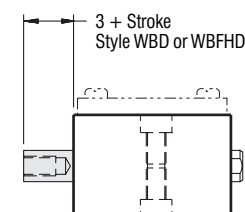
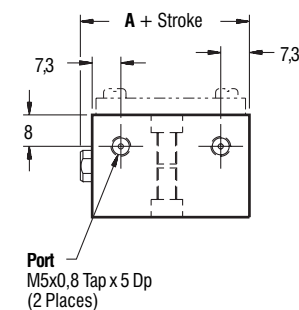
2

3

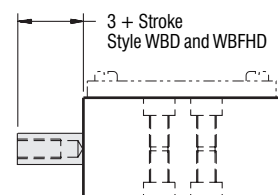
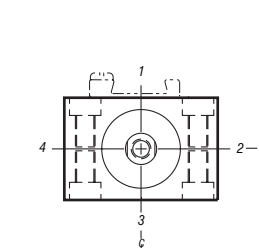
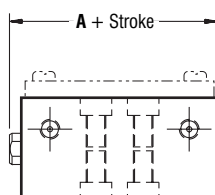
Rod End
M5x0.8 Tap x 8 Min Dp
7 Wrench Flats



Body lengths 44mm and shorter
allow only one sensor.



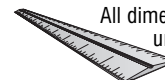
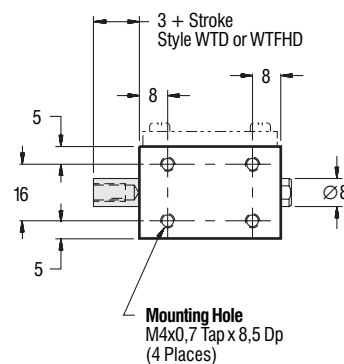
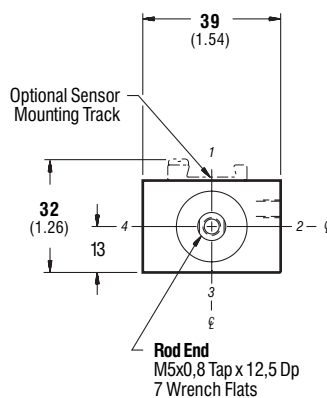
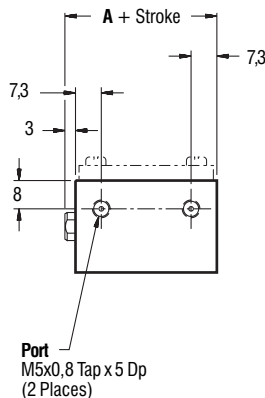
Mounting Hole
M5x0,8 Tap x 8 Dp
Thru Mount for M4x0,7 SHCS
8 Dia C'bore x 4,5 Dp
(4 Per Side)



All dimensions are in millimeters
unless otherwise noted.

		Part Number			
Duty		Single Rod	Double Rod	Stock Stroke Length (in 5mm increments)	A
Non Magnetic Piston	Standard	WT20x_____	WTD20x_____	20 - 100	23
	Intermediate	WTHH20x_____		15 - 100	28
	Heavy	WTFH20x_____	WTFHD20x_____	10 - 100	33
Magnetic Piston	Standard	AWT20x_____	AWTD20x_____	10 - 100	33
	Intermediate	AWTHH20x_____		5 - 100	38
	Heavy	AWTFH20x_____	AWTFHD20x_____	5 - 100	43

*Body lengths 44mm and shorter
allow only one sensor.*

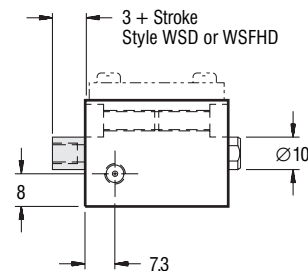
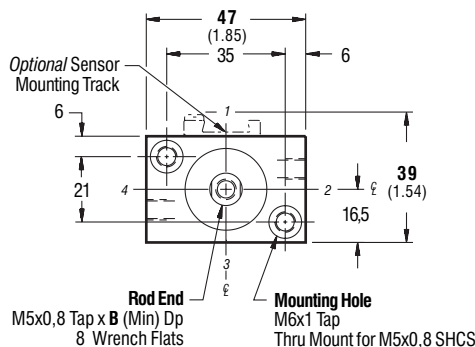
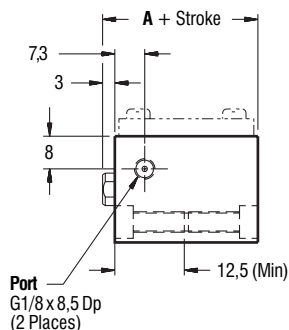


Non Magnetic and Magnetic Piston

		Part Number		Stock Stroke Length in 5mm increments	A	B per 5mm respectively
Duty		Single Rod	Double Rod			
Non Magnetic Piston	Standard	WS25x	WSD25x	5, 10, 15	23	8, 10, 12,5
	Intermediate	WSHH25x		5, 10	28	10, 12,5
	Heavy	WSFH25x	WSFHD25x	5	33	12,5
Magnetic Piston	Standard	AWS25x	AWSD25x	5, 10	28	10
	Intermediate	AWSHH25x		5	33	12,5

Standard Mounting:

TF TR TM TBE

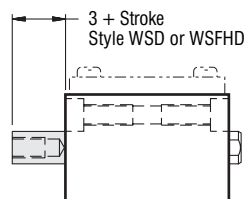
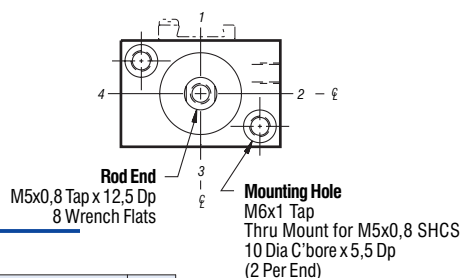
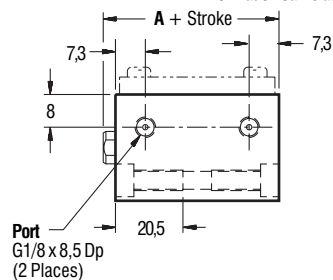


		Part Number		Stock Stroke Length (in 5mm increments)	A
Duty		Single Rod	Double Rod		
Non Magnetic Piston	Standard	WS25x	WSD25x	20 - 25	23
	Intermediate	WSHH25x		15 - 20	28
	Heavy	WSFH25x	WSFHD25x	10 - 15	33
Magnetic Piston	Standard	AWS25x	AWSD25x	15 - 20	28
	Intermediate	AWSHH25x		10 - 15	33
	Heavy	AWSFH25x	AWSFHD25x	5 - 10	38

Standard Mounting:

TF TR TM TBE

—Information same as above except where noted—



		Part Number		Stock Stroke Length (in 5mm increments)	A
Duty		Single Rod	Double Rod		
Non Magnetic Piston	Standard	WS25x	WSD25x	30 - 100	23
	Intermediate	WSHH25x		25 - 100	28
	Heavy	WSFH25x	WSFHD25x	20 - 100	33
Magnetic Piston	Standard	AWS25x	AWSD25x	25 - 100	28
	Intermediate	AWSHH25x		20 - 100	33
	Heavy	AWSFH25x	AWSFHD25x	15 - 100	38

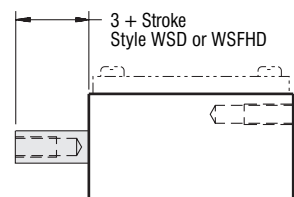
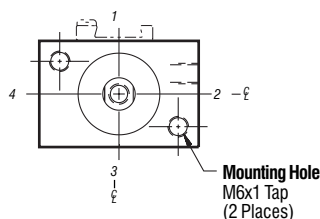
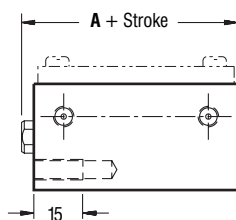
Standard Mounting: TF

Optional Mounting: Specify suffix

TR TBE TM*

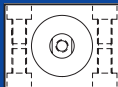
*70mm body length and shorter

—Information same as above except where noted—

All dimensions are in millimeters
unless otherwise noted.

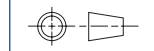
Part Number X Stroke Option - See 'Accessories' section

COMPACT® Metric Cylinders



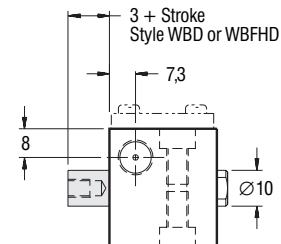
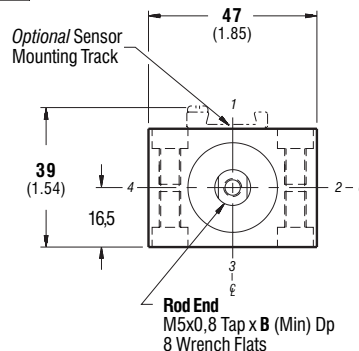
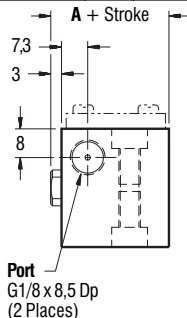
25mm Bore

Side Mount Non Magnetic and Magnetic Piston



		Part Number		Stock Stroke Length in 5mm increments	A	B per 5mm respectively
Duty		Single Rod	Double Rod			
Non Magnetic Piston	Standard	WB25x_____	WBD25x_____	5, 10, 15	23	8, 10, 12,5
	Intermediate	WBHH25x_____		5, 10	28	10, 12,5
	Heavy	WBFH25x_____	WBFHD25x_____	5	33	12,5
Magnetic Piston	Standard	AWB25x_____	AWBD25x_____	5, 10	28	10, 12,5
	Intermediate	AWBHH25x_____		5	33	12,5

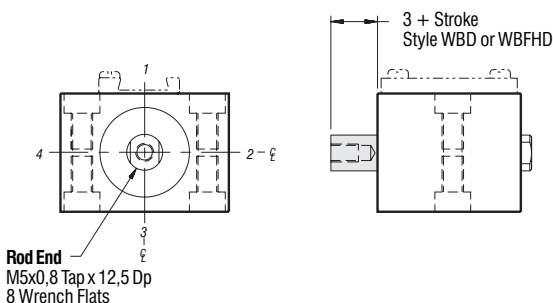
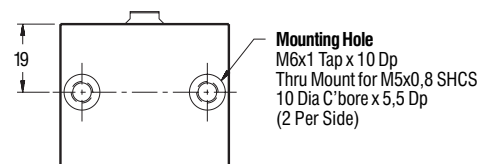
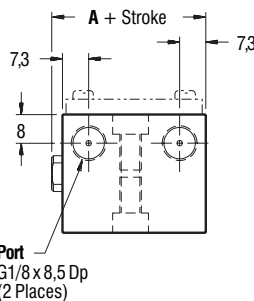
This stroke length allows
only one sensor.



		Part Number		Stock Stroke Length (in 5mm increments)	A
Duty		Single Rod	Double Rod		
Non Magnetic Piston	Standard	WB25x_____	WBD25x_____	20 - 55	23
	Intermediate	WBHH25x_____		15 - 50	28
	Heavy	WBFH25x_____	WBFHD25x_____	10 - 45	33
Magnetic Piston	Standard	AWB25x_____	AWBD25x_____	15 - 50	28
	Intermediate	AWBHH25x_____		10 - 45	33
	Heavy	AWBFH25x_____	AWBFHDx25_____	5 - 40	38

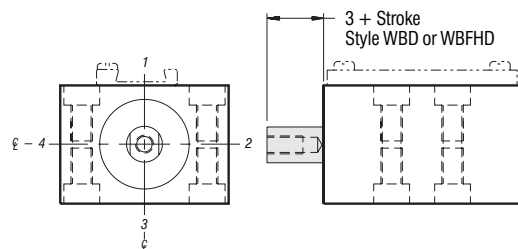
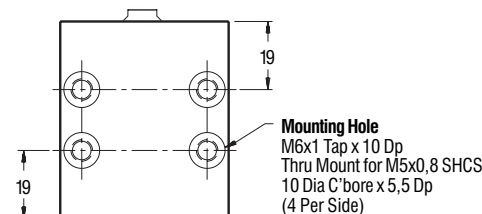
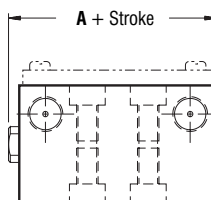
Body lengths 44mm and shorter
allow only one sensor.

—Information same as above except where noted—

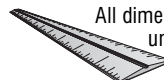


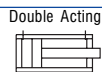
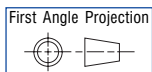
		Part Number		Stock Stroke Length (in 5mm increments)	A
Duty		Single Rod	Double Rod		
Non Magnetic Piston	Standard	WB25x_____	WBD25x_____	60 - 100	23
	Intermediate	WBHH25x_____		55 - 100	28
	Heavy	WBFH25x_____	WBFHD25x_____	50 - 100	33
Magnetic Piston	Standard	AWB25x_____	AWBD25x_____	55 - 100	28
	Intermediate	AWBHH25x_____		50 - 100	33
	Heavy	AWBFH25x_____	AWBFHDx25_____	45 - 100	38

—Information same as above except where noted—



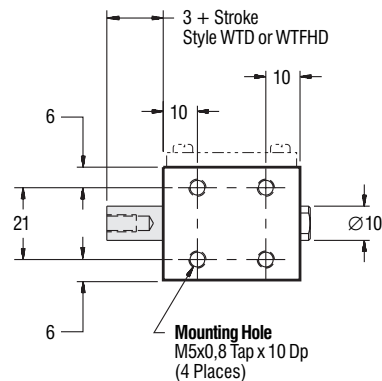
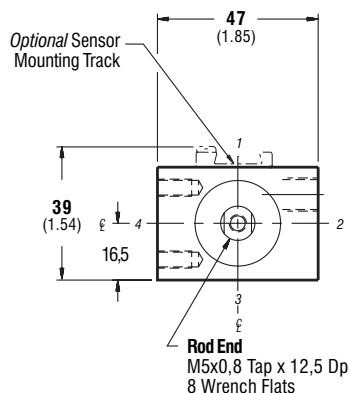
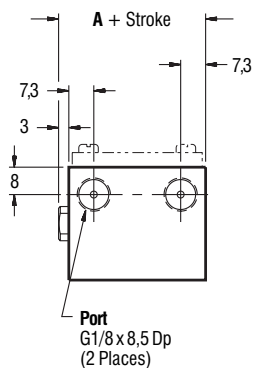
All dimensions are in millimeters
unless otherwise noted.



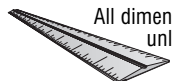


Non Magnetic and Magnetic Piston

		Part Number			
Duty		Single Rod	Double Rod	Stock Stroke Length (in 5mm increments)	A
Non Magnetic Piston	Standard	WT25x	WTD25x	20 - 100	23
	Intermediate	WTHH25x		15 - 100	28
	Heavy	WTFH25x	WTFHD25x	10 - 100	33
Magnetic Piston	Standard	AWT25x	AWTD25x	15 - 100	28
	Intermediate	AWTHH25x		10 - 100	33
	Heavy	AWTFH25x	AWTFHD25x	5 - 100	38

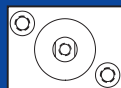


25mm Bore • 25mm Bore • 25mm Bore • 25mm Bore • 25mm Bore



All dimensions are in millimeters
unless otherwise noted.

x **COMBI**
 Part Number Stroke Option - See 'Accessories' section

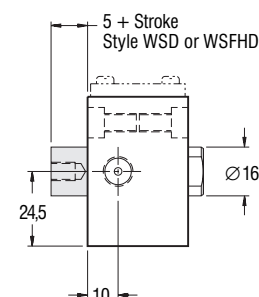
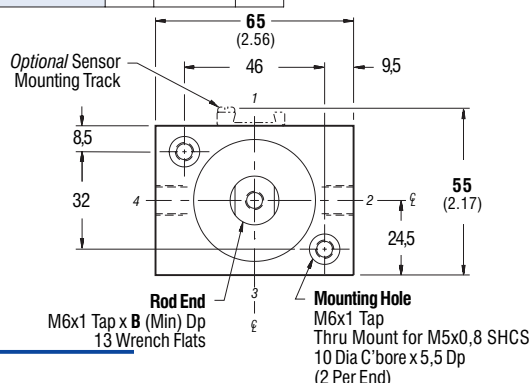
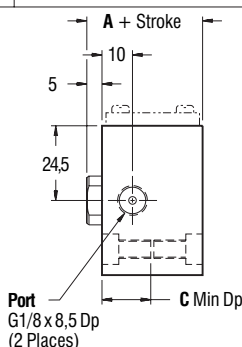


40mm Bore

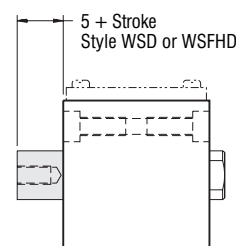
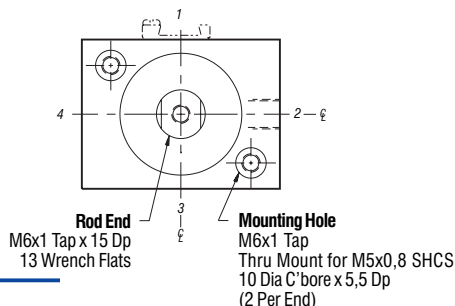
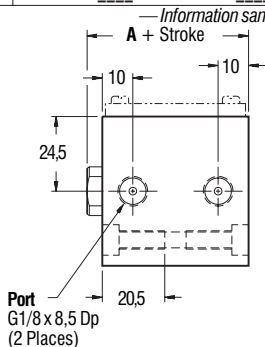
End Mount

Non Magnetic and Magnetic Piston

		Part Number		Stock Stroke Length in 5mm increments	A	B per 5mm respectively	C
Duty		Single Rod	Double Rod				
Non Magnetic Piston	Standard	WS40x	WSD40x	5, 10, 15	31	9, 12, 14	15,5
	Intermediate	WSHH40x		5, 10	36	12, 14	18
	Heavy	WSFH40x	WSFHD40x	5	41	14	20,5
Magnetic Piston	Standard	AWS40x	AWSD40x	5, 10	36	12, 14	18
	Intermediate	AWSHH40x		5	41	14	20,5

Standard Mounting:
TF TR TM TBEThis stroke length allows
only one sensor

		Part Number		Stock Stroke Length (in 5mm increments)	A
Duty		Single Rod	Double Rod		
Non Magnetic Piston	Standard	WS40x	WSD40x	20 - 25	31
	Intermediate	WSHH40x		15 - 20	36
	Heavy	WSFH40x	WSFHD40x	10 - 15	41
Magnetic Piston	Standard	AWS40x	AWSD40x	15 - 20	36
	Intermediate	AWSHH40x		10 - 15	41
	Heavy	AWSFH40x	AWSFHD40x	5 - 10	46

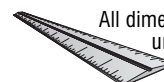
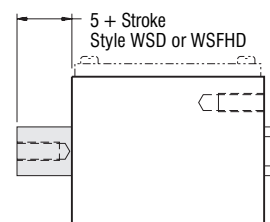
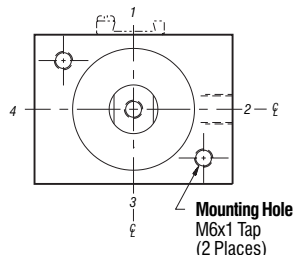
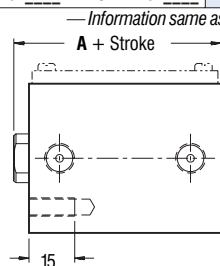
Standard Mounting:
TF TR TM TBEBody lengths 50mm and shorter
allow only one sensor.

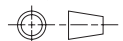
		Part Number		Stock Stroke Length (in 5mm increments)	A
Duty		Single Rod	Double Rod		
Non Magnetic Piston	Standard	WS40x	WSD40x	30 - 100	31
	Intermediate	WSHH40x		25 - 100	36
	Heavy	WSFH40x	WSFHD40x	20 - 100	41
Magnetic Piston	Standard	AWS40x	AWSD40x	25 - 100	36
	Intermediate	AWSHH40x		20 - 100	41
	Heavy	AWSFH40x	AWSFHD40x	15 - 100	46

Standard Mounting: TF
Optional Mounting: Specify suffix

TR TBE TM*

*76mm body length and shorter

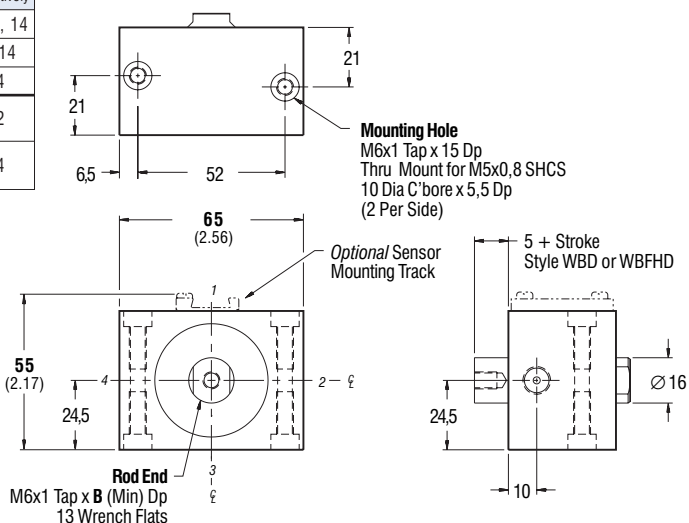
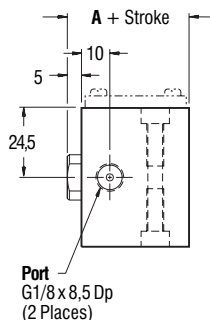




Non Magnetic and Magnetic Piston Side Mount

		Part Number		Stock Stroke Length in 5mm increments	A	B per 5mm respectively
Duty		Single Rod	Double Rod			
Non Magnetic Piston	Standard	WB40x	WBD40x	5, 10, 15	31	9, 12, 14
	Intermediate	WBHH40x		5, 10	36	12, 14
	Heavy	WBFH40x	WBFHD40x	5	41	14
Magnetic Piston	Standard	AWB40x	AWBD40x	5, 10	36	12
	Intermediate	AWBHH40x		5	41	14

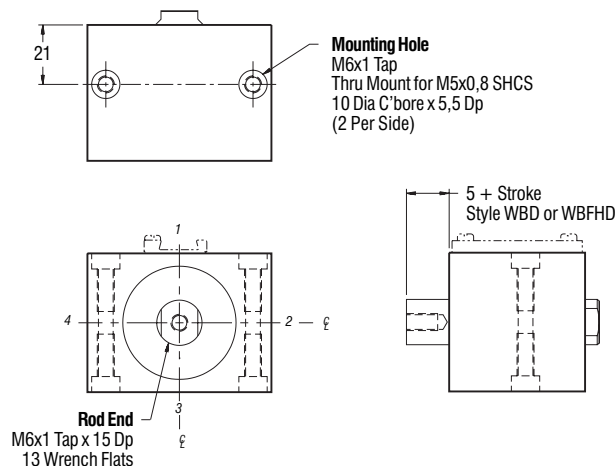
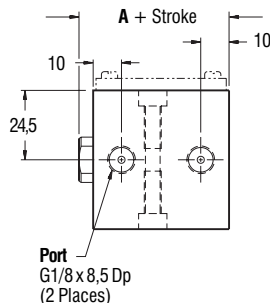
This stroke length allows
only one sensor.



		Part Number		Stock Stroke Length (in 5mm increments)	A
Duty		Single Rod	Double Rod		
Non Magnetic Piston	Standard	WB40x	WBD40x	20 - 55	31
	Intermediate	WBHH40x		15 - 50	36
	Heavy	WBFH40x	WBFHD40x	10 - 45	41
Magnetic Piston	Standard	AWB40x	AWBD40x	15 - 50	36
	Intermediate	AWBHH40x		10 - 45	41
	Heavy	AWBFH40x	AWBFHD40x	5 - 40	46

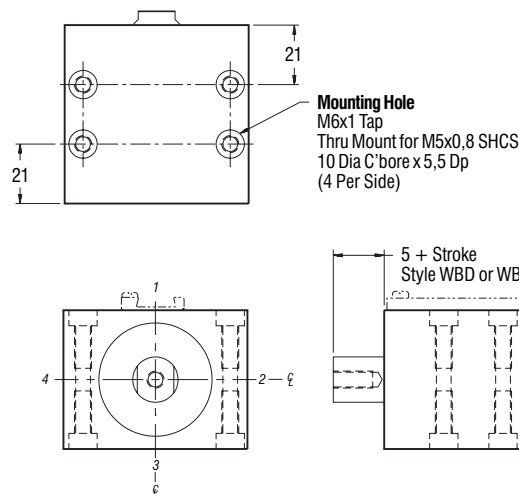
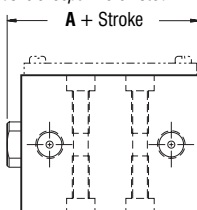
— Information same as above except where noted —

Body lengths 50mm and shorter
allow only one sensor.

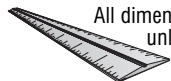


		Part Number		Stock Stroke Length (in 5mm increments)	A
Duty		Single Rod	Double Rod		
Non Magnetic Piston	Standard	WB40x	WBD40x	60 - 100	31
	Intermediate	WBHH40x		55 - 100	36
	Heavy	WBFH40x	WBFHD40x	50 - 100	41
Magnetic Piston	Standard	AWB40x	AWBD40x	55 - 100	36
	Intermediate	AWBHH40x		50 - 100	41
	Heavy	AWBFH40x	AWBFHD40x	45 - 100	46

— Information same as above except where noted —



All dimensions are in millimeters
unless otherwise noted.

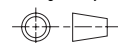
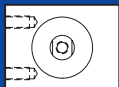


Part Number

Stroke

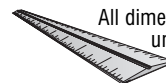
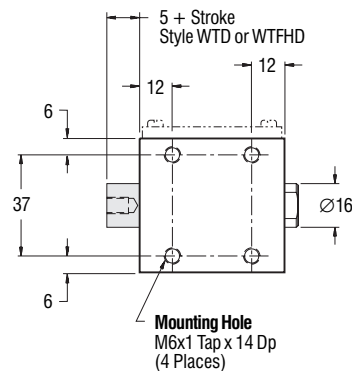
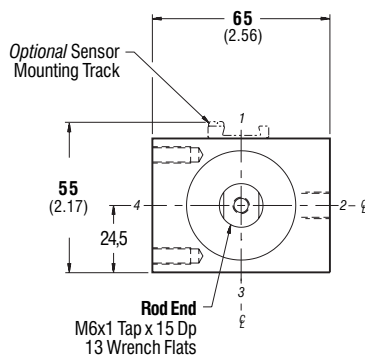
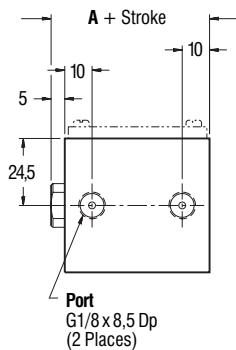
Option - See 'Accessories' section

COMPACT® Metric Cylinders



		Part Number			
Duty		Single Rod	Double Rod	Stock Stroke Length (in 5mm increments)	A
Non Magnetic Piston	Standard	WT40x	WTD40x	20 - 100	31
	Intermediate	WTHH40x		15 - 100	36
	Heavy	WTFH40x	WTFHD40x	10 - 100	41
Magnetic Piston	Standard	AWT40x	AWTD40x	15 - 100	36
	Intermediate	AWTHH40x		10 - 100	41
	Heavy	AWTFH40x	AWTFHD40x	5 - 100	46

*Body lengths 50mm and shorter
allow only one sensor.*



Seal Description	26
Options	27
All Styles	
UC - Urethane Cushion Pads	
Flow Controls	
Rod End Options	27-29
All Styles	
HR - Hollow Rod	
EX - Rod End Extension	
EXD - Double Rod End Extension	
MS - Male Stud	
Alignment Coupler	
RE - Rod Eye	
Bolt On Options	29-30
Style “S”	
FF - Front Flange	
RF - Rear Flange	
RCE - Rear Clevis with Eye Mount	
RCHE - Rear Clevis with Eye Mount (horizontal version)	
RC - Rear Clevis	
RCH - Rear Clevis (horizontal version)	

Seal Descriptions

Conversion Formula: $C^{\circ} = (F^{\circ} - 32^{\circ}) \times 5/9$

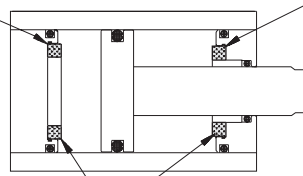
Type	Bore	Ordering Suffix	Rating	Description
Pneumatic Seals				
Nitrile	8mm thru 40mm	Standard	-18° to 93° C 0° to 200° F	Most commonly used elastomer O-ring due to its excellent resistance to petroleum products, wear, tear and friction. Works with lubricated or non-lubricated air in the noted temperature range. Recommended for general purpose sealing with petroleum oils and fluids, water and silicone greases and oils.
Fluorocarbon	12mm thru 40mm	HTV	-18° to 204° C 0° to 400° F	Used mainly for elevated temperatures, harsh environments where some coolants, solvents, cleaning agents or other chemicals will contact the seal gland. Lower compression set is characteristic. For your specific requirements, consult factory.
Hydraulic Seals				
Nitrile	20mm thru 40mm	HYD	-18° to 121° C 0° to 250° F	Seal material is Nitrile and Urethane. Moderate resistance to abrasion, high pressure and shock. Low temperature decreases flexibility. Recommended for hydraulic fluids, dilute acids, and water.
Fluorocarbon & Nitrile		VHYD	-18° to 204° C 0° to 400° F	Seal material is fluorocarbon and PTFE. This option is designed to operate over an extremely wide elevated temperature range, harsh environment or with any non-oil based synthetic hydraulic fluids.



Urethane Cushion Pads

- Designed for noise reduction and minor piston impact only
- Cylinder length does not increase
- Cushion pads mechanically retained within the endcap
- Repairable part - replaceable cushion pads

UC2
Cushion pads on rear end only



UC1
Cushion pads on front end only

UC3
Cushion pads on both ends

UC _____

Example: UC1, UC2, UC3

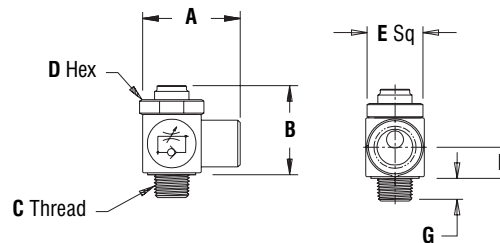
Ordering Suffix UC _____
Bore 20mm - 40mm
Temperature -18° - 66° C
Service Pneumatic only
Material Polyurethane



This option **does not** replace external shock absorbers needed for high loads.

Flow Controls

Model #	A	B	C	D	E	F	G
M05 M15 NV5	17,46	15,08	M5	7,94	9,53	5,56	3,18
MOG18 MIG18 NVG18	25,4	23,37	1/8-28 (G1/8)	14,29	14,29	8,13	6,10
MOG14 MIG14 NVG14	28,58	26,42	1/4-19 (G1/4)	17,46	17,46	9,65	6,60



"Flip" to our Flow Control flier for more information.



Hollow Rod

Our hollow rod option is available for applications that require passage through a double ended rod.



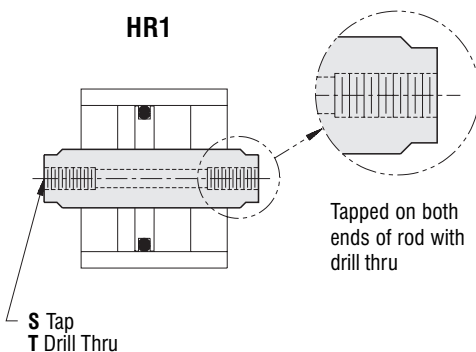
Not for use with Hydraulic cylinders or Non-Rotating rods

HR _____

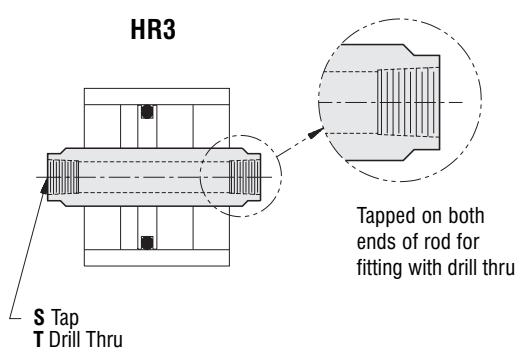
Specify option 1 or 3

Ordering Suffix HR _____
Bore 20mm - 40mm only
Duty Standard and Full Husky only
Rod Service Applications Double only
Pneumatic only
Gases, Liquids, Vacuum, Linear/ Rotary, Clamp & Punch, Blow Molding

HR1



HR3



Bore	HR1		HR3	
	S Tap	T Drill Thru	S Tap	T Drill Thru
20	M5x0,8 x 12,5 Dp	4,3	NA	NA
25	M5x0,8 x 12,5 Dp	4,3	NA	NA
40	M6x1,0 x 15 Dp	5,2	G 1/8	8,5

Styles	Stock Stroke Lengths									
	Strokes									
	5	10	15	20	25	30	35	40	45	50
WSD, WBD, WTD		✓		✓	✓	✓		✓		✓
WSFHD, WBFHD, WTFHD	✓		✓	✓	✓			✓		✓
AWSD, AWBD, AWTD		✓		✓	✓	✓		✓		✓
AWSFHD, AWFHD, AWFHD	✓		✓	✓	✓			✓		✓

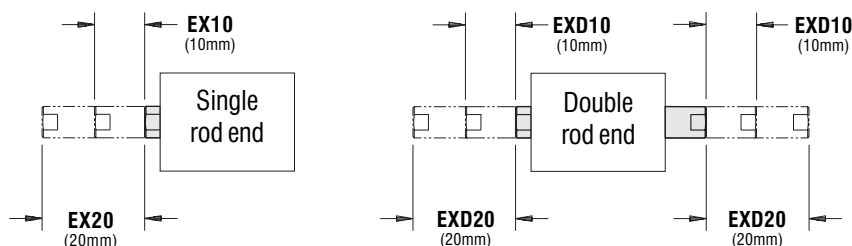
SPECIALS: Consult factory with ID requirements, thread information, pipe taps, etc.

Rod End Options

12mm - 40mm Bore

EX / EXD / MS / Coupler

Rod End Extension



Extended equally at both ends



- For special extension or length, single extension on double rod end - consult factory
- Not a screw on component
- Female tap does not change

Single Rod End

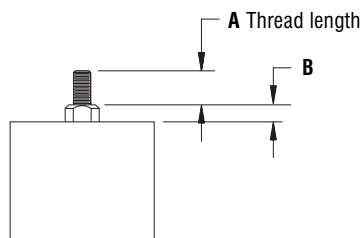
EX

Double Rod End

EXD

Ordering Suffix EX__ or EXD__
Length 10mm or 20mm

Male Stud



Stud permanently adhered
Double ended unit has stud in front end only

Bore	A	B
12	6	3
20	10	3
25	10	3
40	12	5

Single Rod End

MS

Double Rod End

MSD

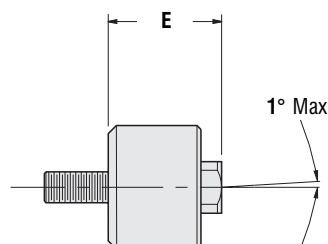
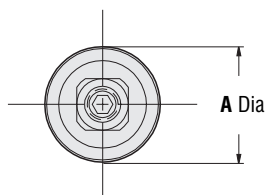
Ordering Suffix	MS or MSD
Material	Steel black oxide



Male stud thread:
Same pitch and diameter
as female rod tap

Rod End Alignment Coupler

Bore	Screw Size	A	E
8	M3	12,0	11,0
12	M3	12,0	11,0
20	M5	14,0	15,2
25	M5	14,0	15,2
40	M6	24,0	21,5
—	M8	24,0	22,5
—	M10	28,0	27,2
—	M12	39,0	36,5



1° Max

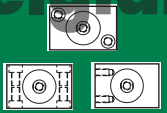


"Flip" to our *Alignment Coupler* flier for more information, including part numbers for ordering



Rod End & Flange Options

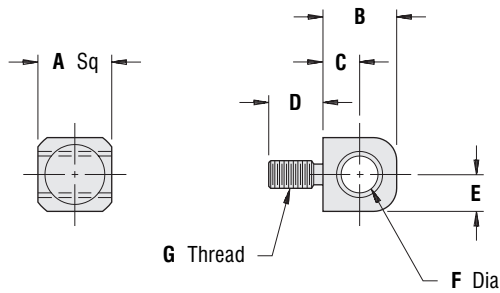
All Styles



RE / FF / RF

12mm - 40mm Bore

Rod Eye



Bore	A	B	C	D	E	F	G
12	8	8	4	6	4	3	M3x0,5
20	9,5	10	5	10	4,8	5	M5x0,8
25	9,5	10	5	10	4,8	5	M5x0,8
40	16	16	8	12	8	8	M6x1



- Rod eye screws flush with cylinder rod face



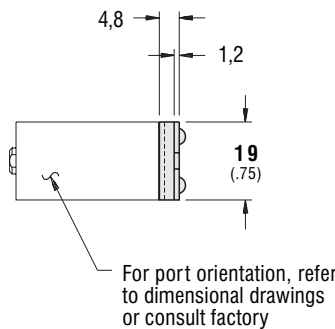
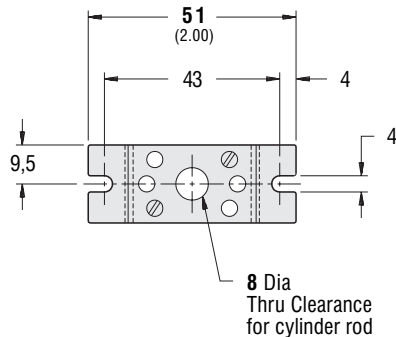
RE

Ordering Suffix
Pressure Rating

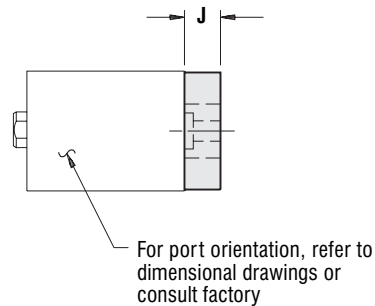
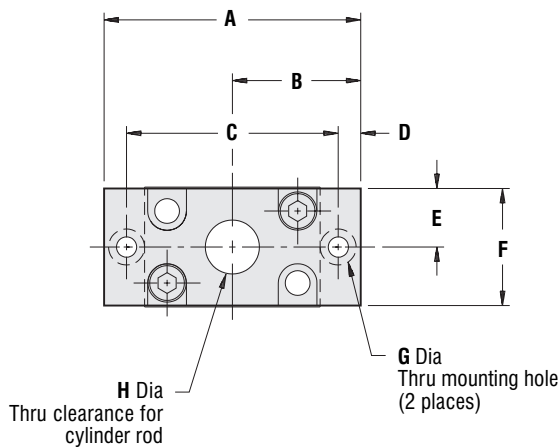
RE
12mm:
thru 8 BAR
20mm - 40mm:
thru 15 BAR
Material
CRS with black
oxide finish and
sintered bronze
bearing

Flange Mount (Shown as Rear Flange)

12mm Bore



20mm - 40mm Bore



Bore	A	B	C	D	E	F	G	H	J
20	57	28,5	47	5	12,7	25,5	4,5	12	8
25	69	34,5	57	6	15,9	31,8	5,5	16	9,5
40	87	43,5	75	6	22,2	44,5	5,5	24	9,5

Front Flange

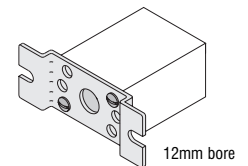
FF

Rear Flange

RF

Ordering Suffix
Bore
Style
Material

FF or RF
12mm - 40mm
"S" only
12mm:
Steel black
oxide
20mm - 40mm:
Aluminum
black
anodized



20mm - 40mm bore

Cylinder Part Number X

Stroke Option

COMPACT® Metric Cylinders

For port orientation, refer to dimensional pages or consult factory

3.2 Dia

12.7

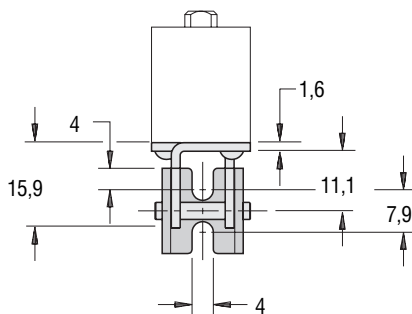
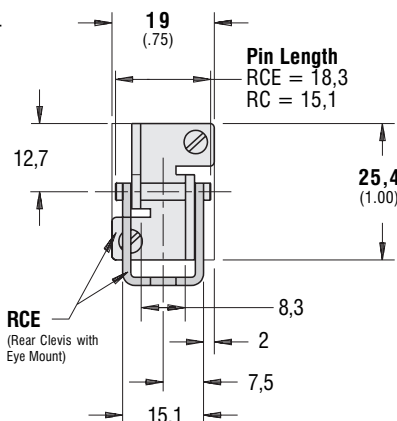
30°

15.9

7.9

15.9

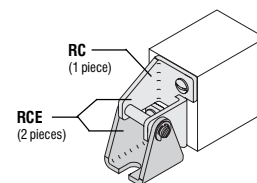
RC
(Rear Clevis only)



Rear Clevis with Eye Mount

Rear Clevis only

Ordering	RCE or RC
Suffix	12mm
Bore	"S" only
Style	Single only
Rod	Pneumatic only
Service	180°
Pivot	Rear Clevis:
Material	Steel black oxide with case hardened pin and clips
	Eye Mount:
	Steel black oxide

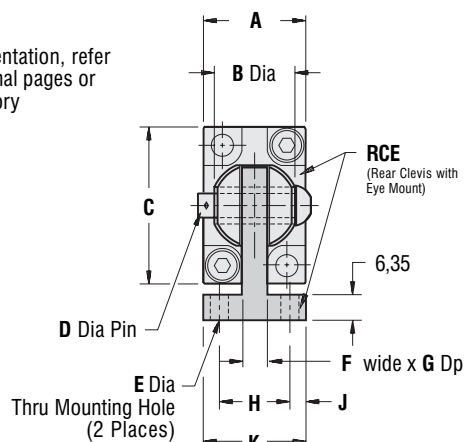


For port orientation, refer to dimensional pages or consult factory

RC
(Rear Clevis only)

D Dia

Thru Mount
(2)



Vertical Orientation

Rear Clevis with Eye Mount

Vertical Orientation

Rear Clevis only

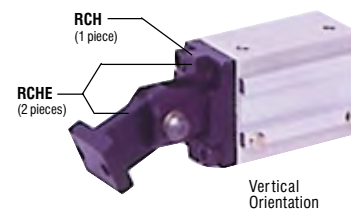
Ordering Suffix	RCE, RC, RCHE, RCH
Bore	20mm - 40mm
Style	"S" only
Rod	Single only
Service	Pneumatic only
Pivot	180°
Material	Rear Clevis and Eye Mount: Black anodized aluminum

Horizontal Orientation

Rear Clevis with Eye Mount

Horizontal Orientation

Rear Clevis only



Bore	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	U	V	W
20	25,4	22	38,1	6	4,5	7,4	18,5	17,5	4	25,5	32,5	30	23	16,5	9,5	10,5	38,5	28,5	9,5	19,5	19
25	31,8	22	45,8	6	4,5	7,4	18,5	17,5	4	25,5	32,5	30	23	16,5	9,5	10,5	38,5	28,5	9,5	19,5	19
40	47,5	32	63,5	8	5,5	13	24	35	8	51	39	35	26	22	13	10	52,5	38	13	25	26

Reverse Assembly

Simple solution to a mounting or porting interference. Compact® cylinders are symmetrical and easily assembled in reverse. When specifying "RA", the mounting and porting orientations will change; see examples below.

This option is *not* applicable to Magnetic Piston cylinders.

RA

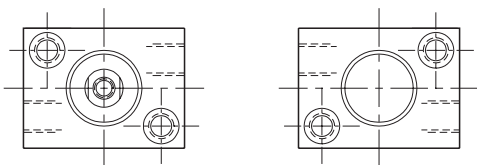
Ordering Suffix Bore RA 8mm - 40mm

Example 12mm Bore Short Stroke

Standard Assembly

Front View

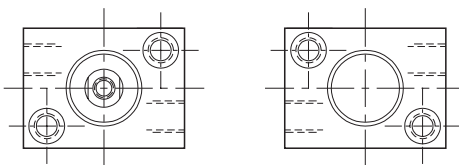
Rear View



Reverse Assembly

Front View

Rear View



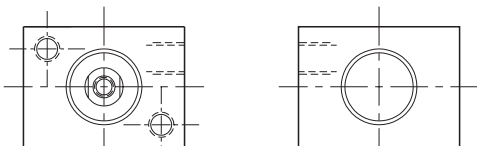
Orientation of mounting and porting change

Example 12mm Bore Long Stroke

Standard Assembly

Front View

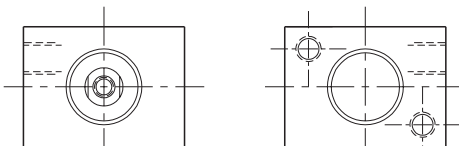
Rear View



Reverse Assembly

Front View

Rear View



Orientation of mounting and porting change

Reminder: Not applicable on Magnetic Piston cylinders.



Usable Female Rod Thread

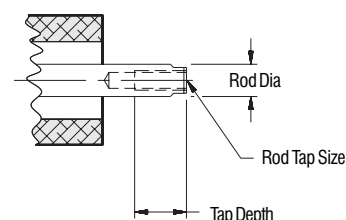
On magnetic piston style cylinders, refer to longer **stroke** when determining tap depth.

- 12mm - 20mm use 10mm longer stroke
- 25mm - 40mm use 5mm longer stroke

Bore	Rod Diameter	Standard Rod Tap	Duty	Tap Depths				
				Stroke (in millimeters)				
				5	10	15	20	25 & longer
8	4	NA	Standard	All duty types and strokes have M3 turned male threads as a standard rod end option.				
			Intermediate					
			Heavy					
12	6	M3x0,5	Standard	6				
			Intermediate					
			Heavy					
20	8	M5x0,8	Standard	8	10	12,5	12,5	12,5
			Intermediate	10	12,5	12,5	12,5	12,5
			Heavy	12,5	12,5	12,5	12,5	12,5
25	10	M5x0,8	Standard		10	12,5	12,5	12,5
			Intermediate	10	12,5	12,5	12,5	12,5
			Heavy	12,5	12,5	12,5	12,5	12,5
40	16	M6x1	Standard	9	12	14	15	15
			Intermediate	12	14	15	15	15
			Heavy	14	15	15	15	15



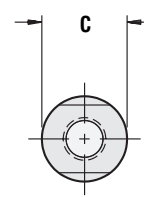
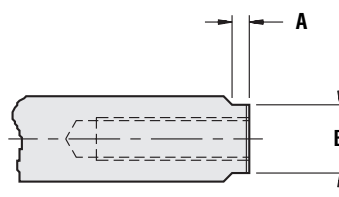
For low cost male thread, "Flip" to 'Accessories' section - Male Stud



Usable Wrench Flats

Bore	A	B Flat	C Dia
8*	3	3,5	4
12	3	5	6
20	3	7	8
25	3	8	10
40	5	13	16

* Turned male threads not shown



Cylinder Unit Weights (approximate weight in grams)

Bore	Duty Rod End	Non-Magnetic Piston					Magnetic Piston				
		Standard		Intermediate	Heavy		Standard		Intermediate	Heavy	
		Single	Double	Single	Single	Double	Single	Double	Single	Single	Double
8	Zero stroke	10,1	NA	13	16,5	NA	23,3	NA	28,2	34	NA
	per 5mm stroke	4	NA	4	4	NA	5	NA	5	5	NA
12	Zero stroke	22,6	24,5	28,1	33	44,4	44,6	39,2	52,7	62,4	68
	per 5mm stroke	5		5	5	7		7			7
20	Zero stroke	55,5	62,3	63,1	78,6	80	68,3	79,7	83,1	108,9	136,5
	per 5mm stroke	12	11	12	12	12	13	12	13	13	12
25	Zero stroke	83,2	88,9	95	122,5	132,6	115,8	106,3	135,3	143,6	156,5
	per 5mm stroke	17	16	17	17	19	18	19	18	18	19
40	Zero stroke	242,1	253	276,5	294,3	344,7	262,2	253	308	353,6	316,8
	per 5mm stroke	32	35	32	32	35	33	35	33	33	35



Example: AS12x15

AS12 - Magnetic 12mm bore = 44.60 g
 15 - 15mm stroke = 6.00 x 3 = 18.00 g
 44.60 + 18.00 = **62.60 grams**

Grams to Ounces (Grams x .03527 = Ounces)
 62.60 x .03527 = 2.208 ounces

Accessory Unit Weights (approximate weight in grams)

Suffix	Description	Bore				
		8	12	20	25	40
FF	Front Flange	—	10,80	28,35	49,70	83,25
MS	Male Stud	—	,45	1,65	1,65	3,80
RE	Rod Eye	—	3,30	6,05	6,05	25,25
RF	Rear Flange	—	10,80	28,35	47,30	83,25
RC/RCH	Rear Clevis	—	9,85	67,40	76,50	177,00
RCE/RCHE	Rear Clevis with Eye Mount	—	—	48,25	64,55	130,80

Grams to Ounces Conversion Formula

- Grams x .03527 = Ounces
- Example: 10,80 x .03527 = .38 ounces

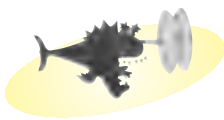


Repair Kits apply to Non Magnetic and Magnetic piston cylinders — any duty.

Repair Kits, 8mm thru 40mm Bore

		Repair Kits					Tools		Lubrication
		Pneumatic Seals		Hydraulic Seals		Urethane Cushions	Assembly Wrench	Flat Wrench	
Bore	Rod End	Standard	Viton®	Hydraulic	Viton® Hyd.				
8	Single	RKW8	—	—	—	—	—	WFW0S	Lube-1 (Description: 5.3 oz. tube) Lubricates approximately 30 medium size cylinders
12	Single	RKW12	RKWV12	—	—	—	—	WFW1S	
	Double	RKWD12	RKWDV12						
20	Single	RKW20	RKWV20	RKWH20	RKWVH20	RKWD20UC	MW-1	WFW1S	
	Double	RKWD20	RKWDV20	RKWDH20	RKWDVH20				
25	Single	RKW25	RKWV25	RKWH25	RKWVH25	RKWD25UC		WFW2S	
	Double	RKWD25	RKWDV25	RKWDH25	RKWDVH25				
40	Single	RKW40	RKWV40	RKWH40	RKWVH40	RKWD40UC	W-2	WFW2S	
	Double	RKWD40	RKWDV40	RKWDH40	RKWDVH40				

Part No. WFW
Includes one each:
WFW0S, WFW1S, WFW2S



NEW!

All universal repair kits now include magnets.

All Repair Kits Include:

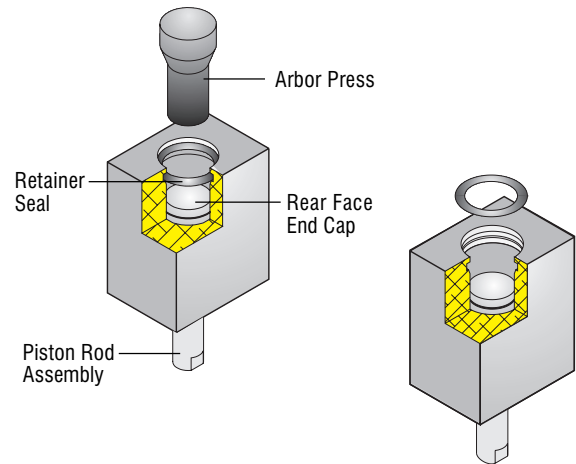
- Endcap Seals
- Shaft Seals
- Piston Seals
- Retaining Wire *
- Nyliner Bearing
- Magnet
- Lubrication (1 to 4 milliliters)
- Snap Rings - *RDK kits only*

* 20mm - 40mm only

Disassembly

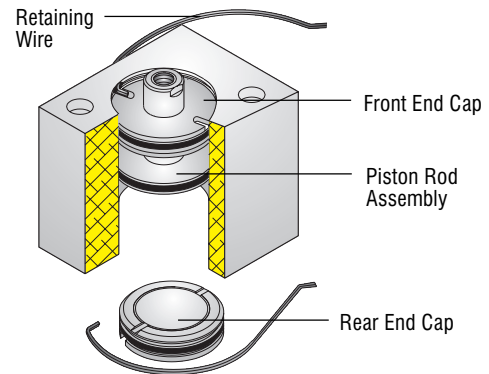
8mm - 12mm Bore

1. Place cylinder under small arbor press, rear end cap up, apply 15 pounds of force.
2. Push the end cap down into the cylinder frame, retainer seal will remain in groove.
3. With an o-ring tool, remove the retainer seal.
4. Push the piston rod assembly up to remove the rear face end cap.
5. Do not remove the piston rod assembly.
6. Turn cylinder over.
7. Repeat steps 1-3, push rod end cap out with piston rod assembly and remove both.



20mm - 40mm Bore

1. Place cylinder in vise, rear end cap up.
2. Place spanner wrench pins in notches of the end cap.
3. Turn clockwise — the retaining wire will back out of the cylinder.
4. Stop turning when wire becomes loose.
5. Push the end cap down into the frame.
6. Remove the wire by pulling the hooked end from the cylinder bore.
7. Push the piston rod assembly up to remove the end cap.
8. Do not remove piston rod assembly.
9. Turn cylinder over.
10. Repeat steps 1-6, push front end cap out with piston rod assembly and remove both.

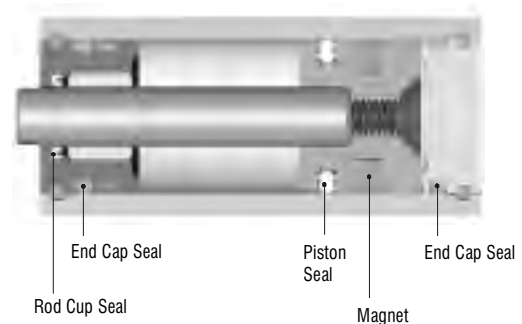


General Repair Instructions

1. Remove any seal that becomes visible during repair with an o-ring tool.
2. Remove magnet only if magnet appears damaged or broken.
3. Replace magnet in mag groove, taking care to position painted side of magnet toward piston.
4. Clean all grooves with a soft cloth.
5. Lightly lubricate seal grooves, reset seals and lubricate again.
6. Repeat above steps, in reverse, to reassemble.
7. Bubble test cylinder to assure air tight seal.

Double Rod Instructions - 20mm through 40mm

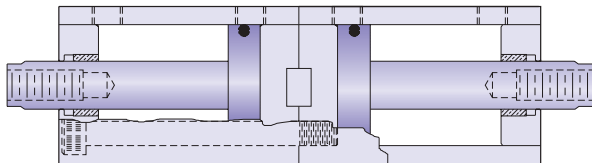
1. Using snap ring pliers, remove first snap ring.
2. Remove piston from rod and remove snap ring from opposite side.
3. Remove inner piston seal with an o-ring tool and reset seals as detailed above.
4. Reset snap ring with flat side facing out from center.
5. Place piston over seal.
6. Reset opposite snap ring with flat side facing out from center.
7. Reassemble and bubble test.



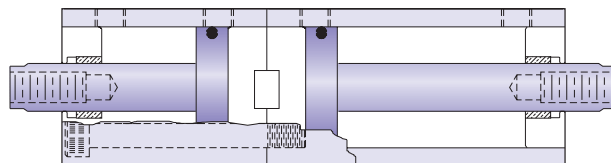
Application Ideas

Back-to-Back - 3 or 4 positions

Equal stroke increments provide 3 positions



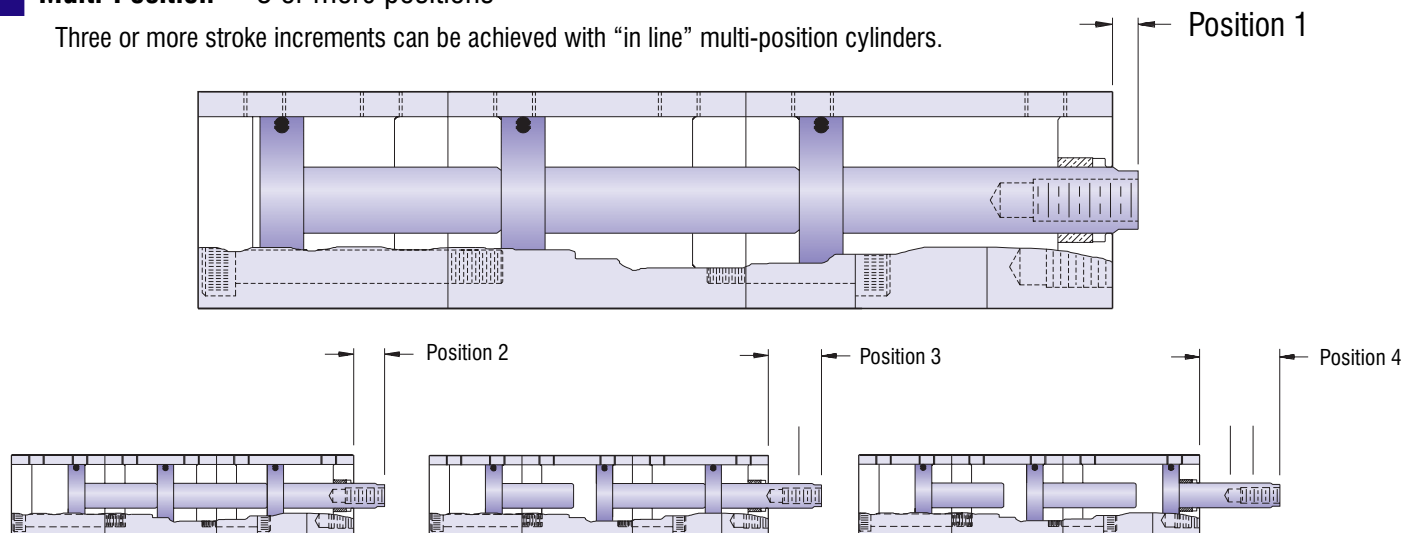
Unequal stroke increments provide 3 or 4 positions, depending on sequence of operation.



- Back-to-back assemblies feature a pilot locator between the cylinder to assure positive alignment.
- Cylinder must have support when used in a non-vertical application.
- 4-way valve circuit required for each cylinder.

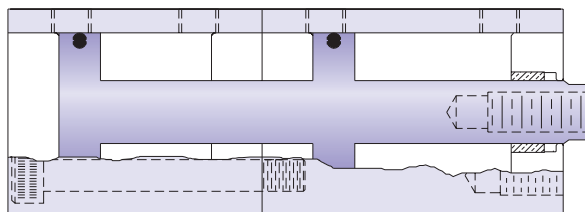
Multi-Position - 3 or more positions

Three or more stroke increments can be achieved with "in line" multi-position cylinders.



- Precise valve circuit design is critical.
- Front cylinder must include all previous cylinder increments. Example: Increments include 5mm + 5mm + 5mm. Front cylinder stroke = 15mm; middle cylinder stroke = 10mm; back cylinder stroke = 5mm.

Multi-Piston - High output



- Numerous pistons can be coupled to achieve extra output in limited space applications.
- Individual cylinders with a common rod, as shown in this diagram, can provide multiple output for push and pull.



For special requirements, design assistance, or quotes contact your local distributor or our Technical Sales Department.

