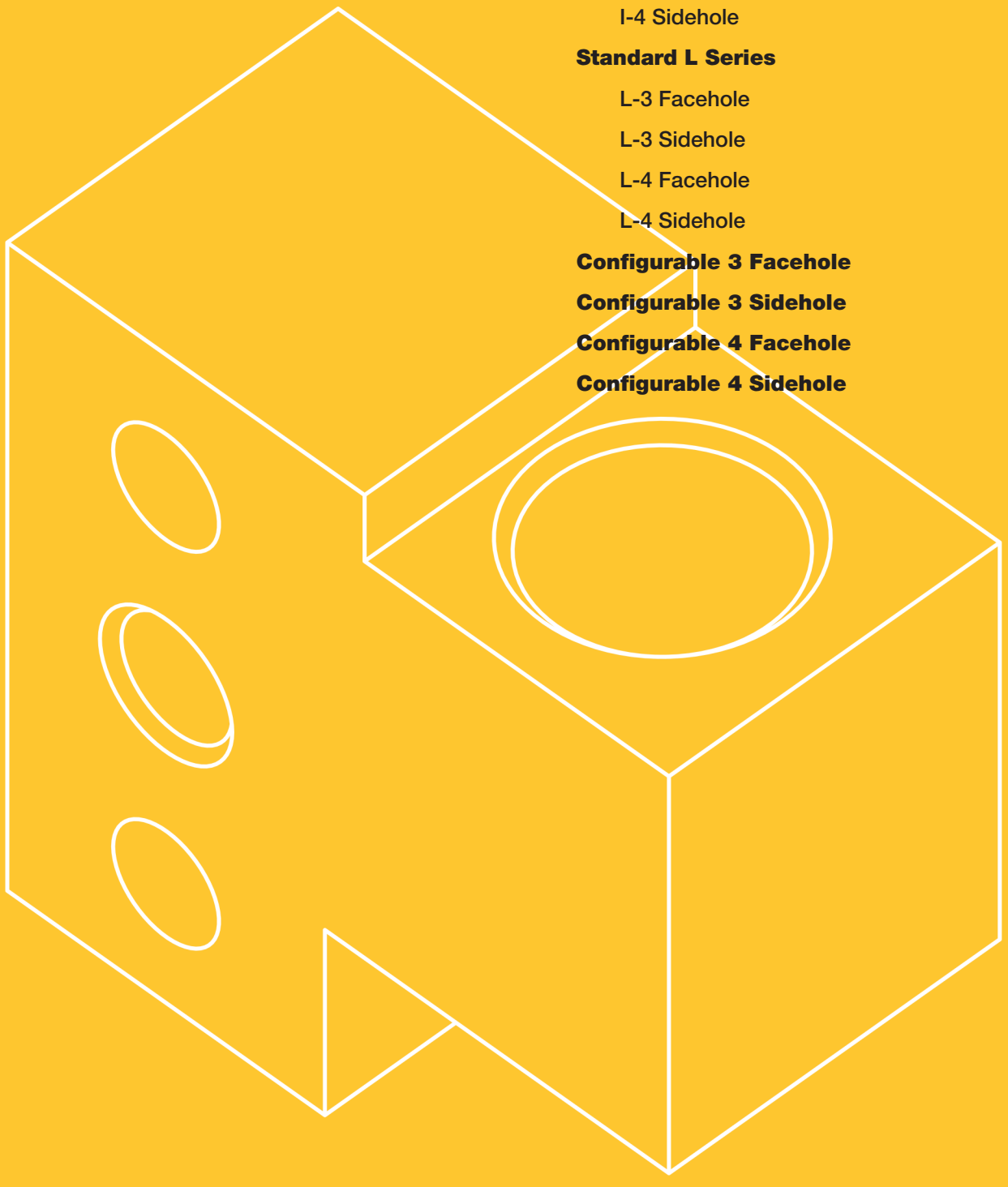
CONFIGURABLE & STANDARD PIN RETAINERS

Standard I Series	**26–28**
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I-3 Sidehole	**27**
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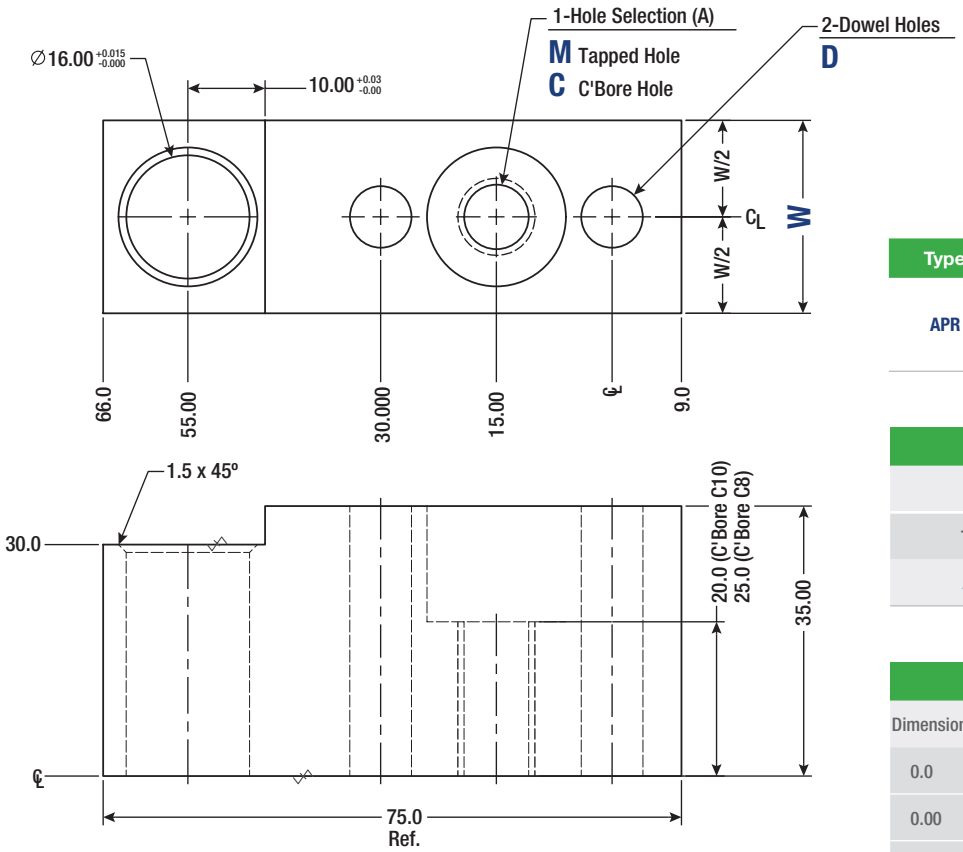


Pin Retainers

STANDARD I-3 FACEHOLE



3D CAD is available online.



Type	Material	Finish
APR	A-36 Steel	Black Oxide
	304 Stainless Steel	—

P/N Example (Standard NAAMS):	
Part Number	
Type	Specification
APR	282M

Tolerance					
Dimension	Tol.	Finish (Ra)	Geometric		
0.0	±0.3	6.0 µm	▱	Surfaces	0.015 T.I.R.
0.00	±0.03	3.0 µm	⊥		
0.000	±0.020	1.6 µm	//		

Standard NAAMS (25 mm Series Pin Retainers)

Type	Hole Selection (A) / Material				W	D Dowel Hole	
	M10		C10				
	A-36	304	A-36	304			Tolerance
APR	060M	061M	062M	063M	25.0	8 H6	+0.000 / +0.009

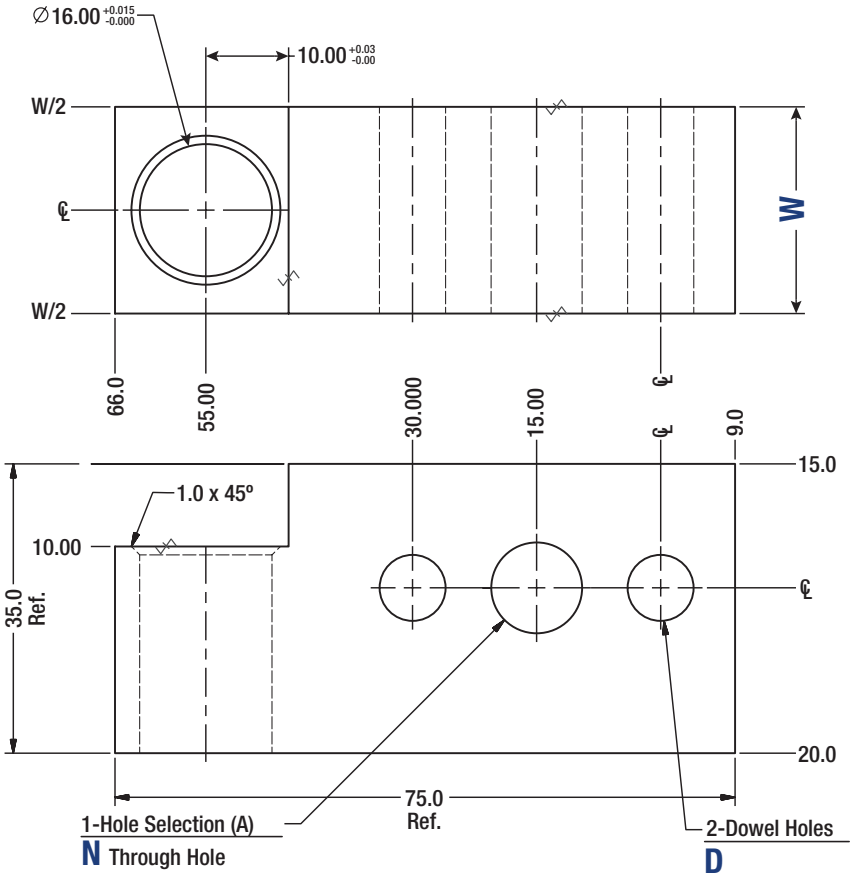
M10 (M10 x 1.5 Tapped Hole), C10 (C'Bore for M10 SHCS). Standard NAAMS specifications are controlled by the NAAMS organization and the latest version of these products will be produced in compliance to: www.naamsstandards.org.

Standard NAAMS (20 mm Series Pin Retainers)

Type	Hole Selection (A) / Material				W	D Dowel Hole	
	M8		C8				
	A-36	304	A-36	304			Tolerance
APR	265M	266M	267M	268M	30.0	8 F7	+0.013 / +0.028
	280M	281M	282M	283M	25.0		

M8 (M8 x 1.25 Tapped Hole), C8 (C'Bore for M8 SHCS). Standard NAAMS specifications are controlled by the NAAMS organization and the latest version of these products will be produced in compliance to: www.naamsstandards.org.

3D CAD is available online.



Type	Material	Finish
APR	A-36 Steel	Black Oxide
	304 Stainless Steel	—

P/N Example (Standard NAAMS):	
Part Number	
Type	Specification
APR	260M

Tolerance					
Dimension	Tol.	Finish (Ra)	Geometric		
0.0	±0.3	6.0 µm	▱	Surfaces	0.015 T.I.R.
0.00	±0.03	3.0 µm	⊥		
0.000	±0.020	1.6 µm	//		

Standard NAAMS (25 mm Series Pin Retainers)					
Type	Hole Selection (A) / Material		W	D Dowel Hole	
	N11				Tolerance
	A-36	304			
APR	050M	051M	25.0	8 H6	+0.000 / +0.009

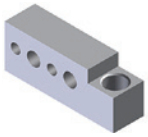
N11 (Ø11.0 Through Hole). Standard NAAMS specifications are controlled by the NAAMS organization and the latest version of these products will be produced in compliance to: www.naamsstandards.org.

Standard NAAMS (20 mm Series Pin Retainers)					
Type	Hole Selection (A) / Material		W	D Dowel Hole	
	N9				Tolerance
	A-36	304			
APR	260M	261M	30.0	8 F7	+0.013 / +0.028
	276M	277M	25.0		

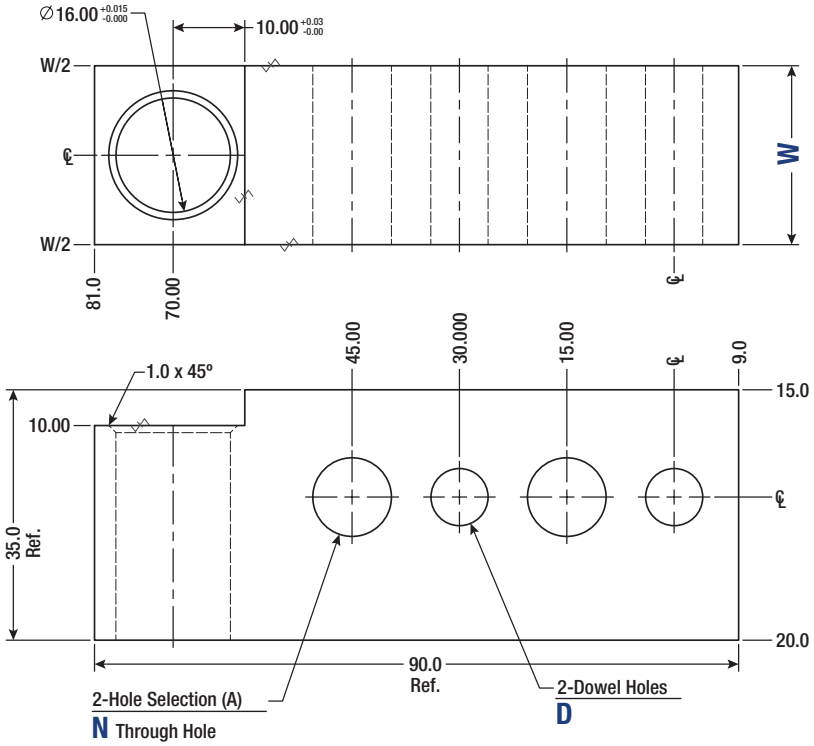
N9 (Ø9.0 Through Hole). Standard NAAMS specifications are controlled by the NAAMS organization and the latest version of these products will be produced in compliance to: www.naamsstandards.org.

Pin Retainers

STANDARD I-4 SIDEHOLE



3D CAD is available online.



Type	Material	Finish
APR	A-36 Steel	Black Oxide
	304 Stainless Steel	—

P/N Example (Standard NAAMS):	
Part Number	
Type	Specification
APR	242M

Tolerance					
Dimension	Tol.	Finish (Ra)	Geometric		
0.0	±0.3	6.0 µm	▱	Surfaces	0.015 T.I.R.
0.00	±0.03	3.0 µm	⊥		
0.000	±0.020	1.6 µm	//		

Standard NAAMS (25 mm Series Pin Retainers)					
Type	Hole Selection (A) / Material		W	D Dowel Hole	
	N11				
	A-36	304			Tolerance
APR	070M	071M	25.0	8 H6	+0.000 / +0.009

N11 (Ø11.0 Through Hole). Standard NAAMS specifications are controlled by the NAAMS organization and the latest version of these products will be produced in compliance to: www.naamsstandards.org.

Standard NAAMS (20 mm Series Pin Retainers)					
Type	Hole Selection (A) / Material		W	D Dowel Hole	
	N9				
	A-36	304			Tolerance
APR	075M	076M	30.0	6 F7	+0.010 / +0.022
	077M	078M	25.0		
	221M	222M	30.0	8 F7	+0.013 / +0.028
	241M	242M	25.0		

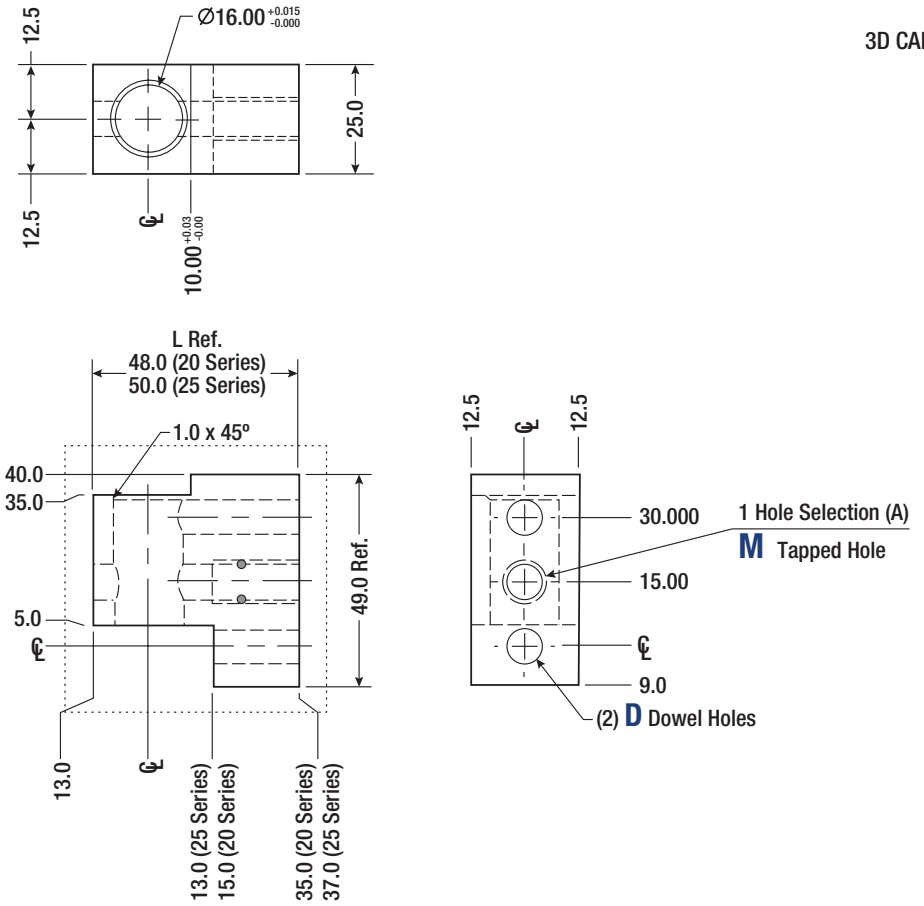
N9 (Ø9.0 Through Hole). Standard NAAMS specifications are controlled by the NAAMS organization and the latest version of these products will be produced in compliance to: www.naamsstandards.org.



Pin Retainers

STANDARD L-3 FACEHOLE

3D CAD is available online.



Type	Material	Finish
APR	A-36 Steel	Black Oxide
	304 Stainless Steel	—

P/N Example (Standard NAAMS):	
Part Number	
Type	Specification
APR	020M

Tolerance					
Dimension	Tol.	Finish (Ra)	Geometric		
0.0	±0.3	6.0 µm	▱	Surfaces	0.015 T.I.R.
0.00	±0.03	3.0 µm	⊥		
0.000	±0.020	1.6 µm	//		

Standard NAAMS (25 mm Series Pin Retainers)					
Type	Hole Selection (A) / Material		W	D Dowel Hole	
	M10				
	A-36	304			Tolerance
APR	020M	021M	25.0	8 H6	+0.000 / +0.009

M10 (M10 x 1.5 Tapped Hole). Standard NAAMS specifications are controlled by the NAAMS organization and the latest version of these products will be produced in compliance to: www.naamsstandards.org.

Standard NAAMS (20 mm Series Pin Retainers)					
Type	Hole Selection (A) / Material		W	D Dowel Hole	
	M8				
	A-36	304			Tolerance
APR	255M	256M	20.0	8 F7	+0.013 / +0.028

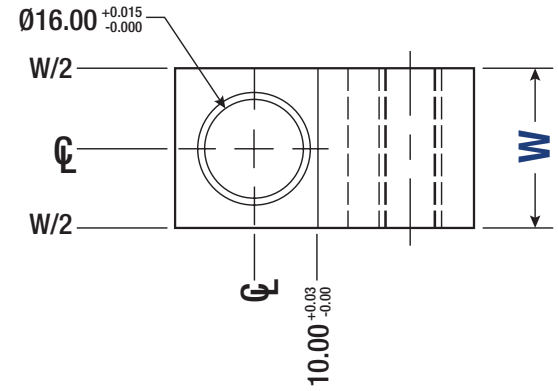
M8 (M8 x 1.25 Tapped Hole). Standard NAAMS specifications are controlled by the NAAMS organization and the latest version of these products will be produced in compliance to: www.naamsstandards.org.

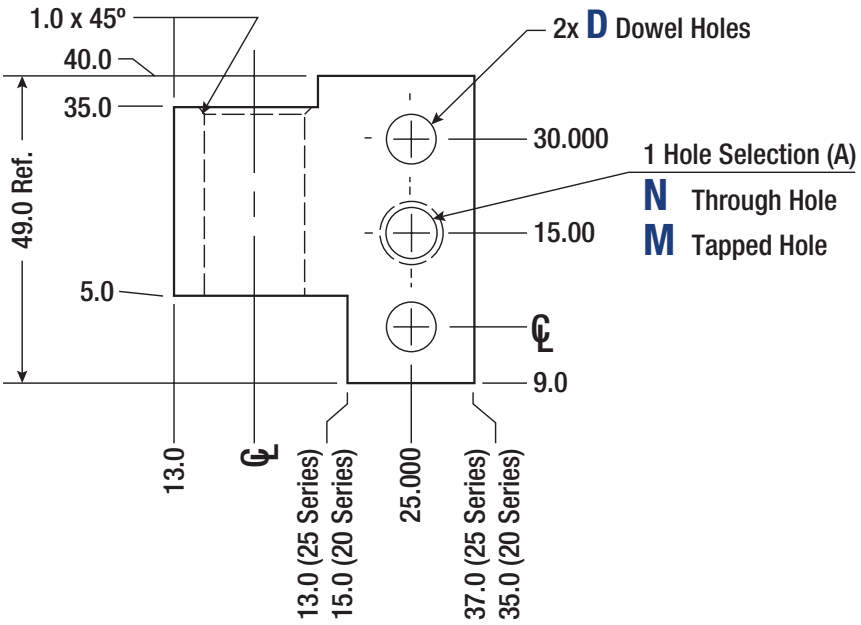
Pin Retainers

STANDARD L-3 SIDEHOLE



3D CAD is available online.





Type	Material	Finish
APR	A-36 Steel	Black Oxide
	304 Stainless Steel	—

P/N Example (Standard NAAMS):	
Part Number	
Type	Specification
APR	271M

Tolerance					
Dimension	Tol.	Finish (Ra)	Geometric		
0.0	±0.3	6.0 µm	▱	Surfaces	0.015 T.I.R.
0.00	±0.03	3.0 µm	⊥		
0.000	±0.020	1.6 µm	//		

Standard NAAMS (25 mm Series Pin Retainers)

Type	Hole Selection (A) / Material				W	D Dowel Hole	
	M10		N11				
	A-36	304	A-36	304			Tolerance
APR	010M	011M	012M	013M	25.0	8 H6	+0.000 / +0.009

M10 (M10 x 1.5 Tapped Hole), N11 (Ø11.0 Through Hole). Standard NAAMS specifications are controlled by the NAAMS organization and the latest version of these products will be produced in compliance to: www.naamsstandards.org.

Standard NAAMS (20 mm Series Pin Retainers)

Type	Hole Selection (A) / Material				W	D Dowel Hole	
	M8		N9				
	A-36	304	A-36	304			Tolerance
APR	271M	272M	273M	274M	25.0	8 F7	+0.013 / +0.028
	250M	251M	252M	253M	30.0		

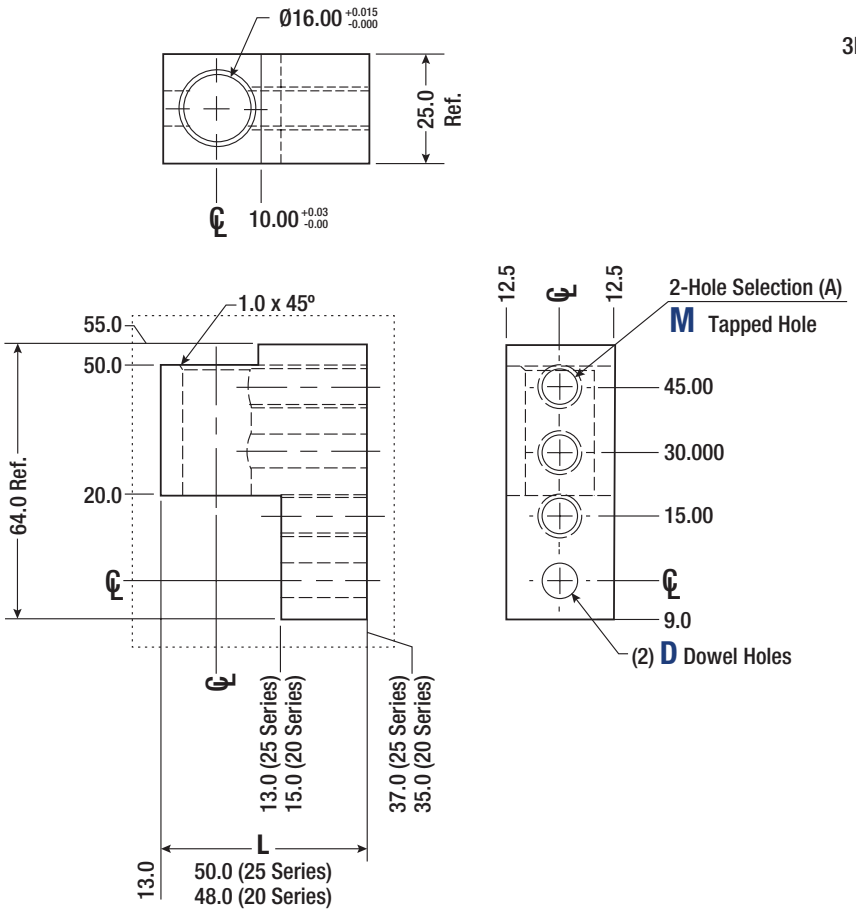
M8 (M8 x 1.25 Tapped Hole), N9 (Ø9.0 Through Hole). Standard NAAMS specifications are controlled by the NAAMS organization and the latest version of these products will be produced in compliance to: www.naamsstandards.org.



Pin Retainers

STANDARD L-4 FACEHOLE

3D CAD is available online.



Type	Material	Finish
APR	A-36 Steel	Black Oxide
	304 Stainless Steel	—

P/N Example (Standard NAAMS):	
Part Number	
Type	Specification
APR	045M

Tolerance					
Dimension	Tol.	Finish (Ra)	Geometric		
0.0	±0.3	6.0 µm	▱	Surfaces	0.015 T.I.R.
0.00	±0.03	3.0 µm	⊥		
0.000	±0.020	1.6 µm	//		

Standard NAAMS (25 mm Series Pin Retainers)				
Type	Hole Selection (A) / Material		D Dowel Hole	
	M10			
	A-36	304		Tolerance
APR	040M	041M	8 H6	+0.000 / +0.009

M10 (M10 x 1.5 Tapped Hole). Standard NAAMS specifications are controlled by the NAAMS organization and the latest version of these products will be produced in compliance to: www.naamsstandards.org.

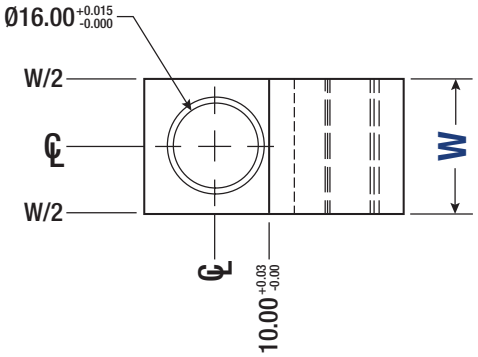
Standard NAAMS (20 mm Series Pin Retainers)				
Type	Hole Selection (A) / Material		D Dowel Hole	
	M8			
	A-36	304		Tolerance
APR	045M	046M	6 F7	+0.010 / +0.022
	211M	212M	8 F7	+0.013 / +0.028

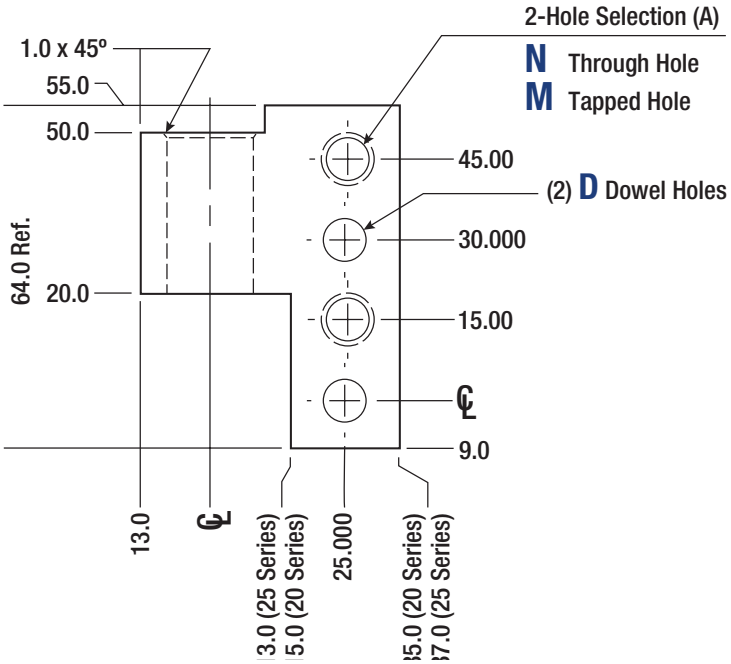
M8 (M8 x 1.25 Tapped Hole). Standard NAAMS specifications are controlled by the NAAMS organization and the latest version of these products will be produced in compliance to: www.naamsstandards.org.

Pin Retainers

STANDARD L-4 SIDEHOLE







3D CAD is available online.

Type	Material	Finish
APR	A-36 Steel	Black Oxide
	304 Stainless Steel	—

P/N Example (Standard NAAMS):	
Part Number	
Type	Specification
APR	337M

Tolerance					
Dimension	Tol.	Finish (Ra)	Geometric		
0.0	±0.3	6.0 µm	▱	Surfaces	0.015 T.I.R.
0.00	±0.03	3.0 µm	⊥		
0.000	±0.020	1.6 µm	//		

Standard NAAMS (25 mm Series Pin Retainers)

Type	Hole Selection (A) / Material				W	D Dowel Hole	
	M10		N11				
	A-36	304	A-36	304			Tolerance
APR	030M	031M	032M	033M	25.0	8 H6	+0.000 / +0.009

M10 (M10 x 1.5 Tapped Hole), N11 (Ø11.0 Through Hole). Standard NAAMS specifications are controlled by the NAAMS organization and the latest version of these products will be produced in compliance to: www.naamsstandards.org.

Standard NAAMS (20 mm Series Pin Retainers)

Type	Hole Selection (A) / Material				W	D Dowel Hole	
	M8		N9				
	A-36	304	A-36	304			Tolerance
APR	336M	337M	338M	339M	25.0	6 F7	+0.010 / +0.022
	231M	232M	233M	234M		8 F7	+0.013 / +0.028
	330M	331M	332M	333M	30.0	6 F7	+0.010 / +0.022
	201M	202M	203M	204M		8 F7	+0.013 / +0.028

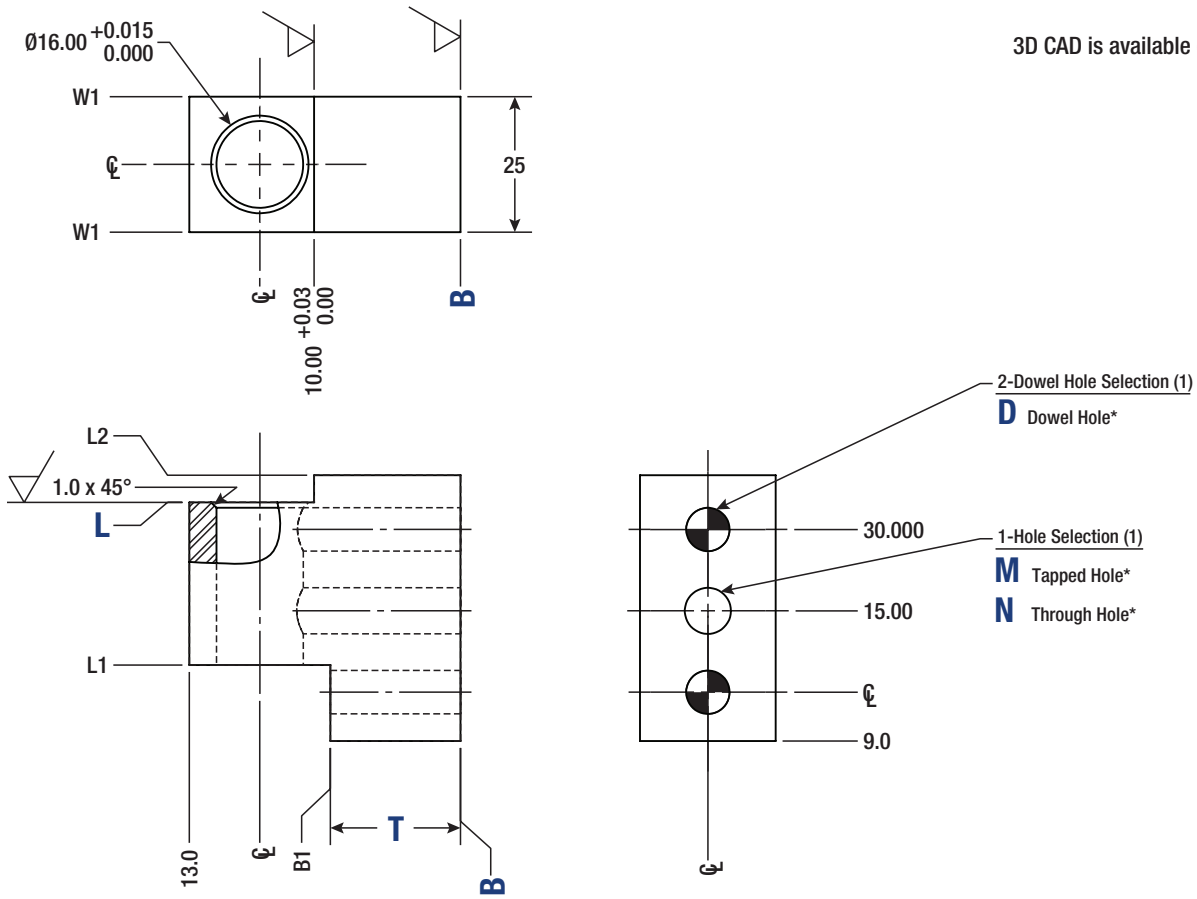
M8 (M8 x 1.25 Tapped Hole), N9 (Ø9.0 Through Hole). Standard NAAMS specifications are controlled by the NAAMS organization and the latest version of these products will be produced in compliance to: www.naamsstandards.org.



Pin Retainers

CONFIGURABLE 3 FACEHOLE

3D CAD is available online.



Type	Material	Finish
APR3F	A-36 Steel	Black Oxide
SAPR3F	304 Stainless Steel	—

Tolerance					
Dimension	Tol.	Finish (Ra)	Geometric		
0.0	±0.3	6.0 µm	▱	Surfaces	0.015 T.I.R.
0.00	±0.03	3.0 µm	⊥		
0.000	±0.020	1.6 µm	//		

Configurable NAAMS (L-3 Facehole)

Part Number		T	B Length	L Length	Hole Selection			B1	L2	L1	W1
Type	(W) Width	Thickness	(0.01 mm inc.)	(1 mm inc.)	N/M Hole Selection	D Dowel Hole	Tolerance	(±0.3)	(±0.3)	(±0.3)	(±0.3)
APR3F SAPR3F	25 (±0.3)	20 24 (±0.3)	35–120 (±0.020)	35–120 (±0.3)	N9	D6F (F7)	+0.010 / +0.022	=B-T	=L-5	=L-30	=W/2
					N11	D6H (H6)	+0.000 / +0.008				
					M8	D8F (F7)	+0.013 / +0.028				
					M10	D8H (H6)	+0.000 / +0.009				

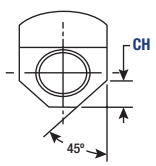
N – Through Hole, N9 for M8 Screw, N11 for M10 Screw
M – Tapped Hole (Coarse Thread), M8 x 1.25; M10 x 1.5
D – Dowel Hole
D, N & M – Holes are machined to a nominal depth of twice the diameter

Order Example:

Part Number												
Type	Width	–	T	–	B	–	L	–	Hole (N/M)	–	Dowel (D)	–	Alteration (CH)
APR3F	25	–	T20	–	B37	–	L42	–	M8	–	D8F	–	
APR3F	25	–	T20	–	B37	–	L42	–	M8	–	D8F	–	CH

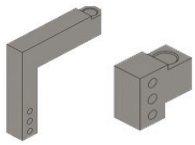
Alternations

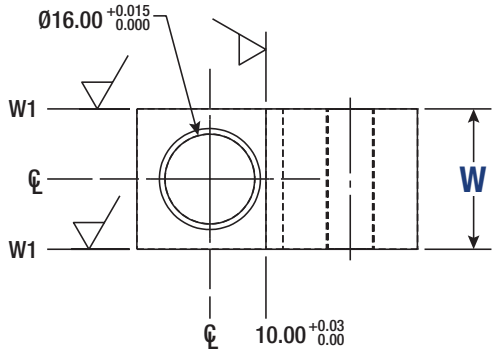
Code	CH
Description	Add 45° Chamfer
Spec	8 (W=25)



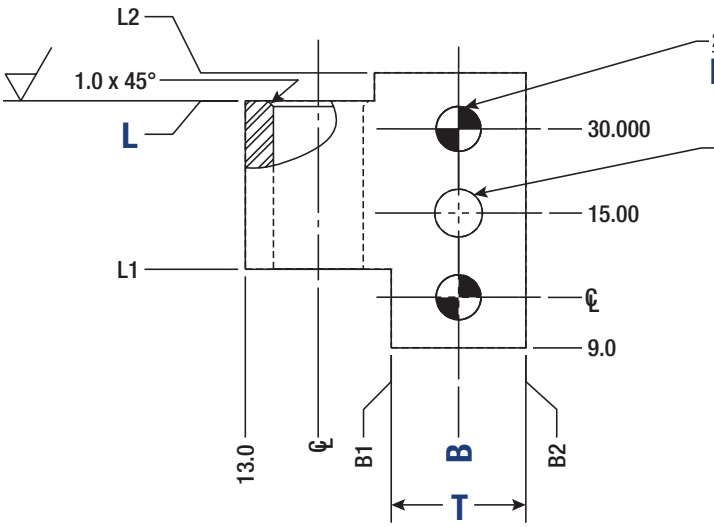
Pin Retainers

CONFIGURABLE 3 SIDEHOLE





3D CAD is available online.



Type	Material	Finish
APR3S	A-36 Steel	Black Oxide
SAPR3S	304 Stainless Steel	—

Tolerance					
Dimension	Tol.	Finish (Ra)	Geometric		
0.0	±0.3	6.0 µm	▱	Surfaces	0.015 T.I.R.
0.00	±0.03	3.0 µm	⊥		
0.000	±0.020	1.6 µm	//		

Configurable NAAMS (L-3 Sidehole)

Part Number		T Thickness	B Length (0.01 mm inc.)	L Length (1 mm inc.)	Hole Selection			B1 (±0.3)	B2 (±0.3)	L1 (±0.3)	L2 (±0.3)	W1 (±0.3)
Type	(W) Width				N/M Hole Selection	D Dowel Hole	Tolerance					
APR3S SAPR3S	25 30	20 24	25–110 (±0.020)	35–120 (±0.3)	N9	D6F (F7)	+0.010 / +0.022	=B-(T/2)	=B-(T/2)	=L-30	=L+5	=W/2
					N11	D6H (H6)	+0.000 / +0.008					
					M8	D8F (F7)	+0.013 / +0.028					
					M10	D8H (H6)	+0.000 / +0.009					

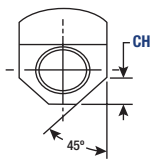
N – Through Hole, N9 for M8 Screw, N11 for M10 Screw
M – Tapped Hole (Coarse Thread), M8 x 1.25; M10 x 1.5
D – Dowel Hole
D, N & M – Holes are machined to a nominal depth of twice the diameter

Order Example:

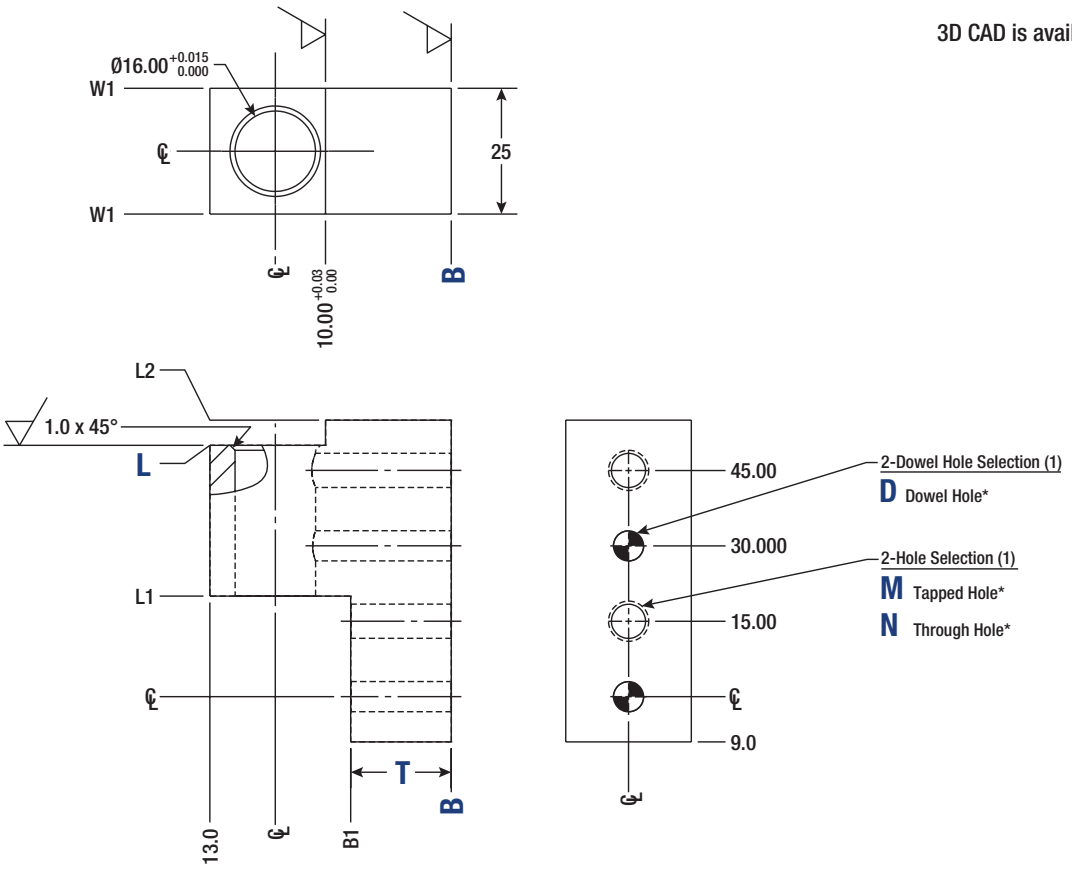
Part Number													
Type	Width	–	T	–	B	–	L	–	Hole (N/M)	–	Dowel (D)	–	Alteration (CH)
APR3S	25	–	T20	–	B37	–	L42	–	N9	–	D8F	–	
APR3S	25	–	T20	–	B37	–	L42	–	N9	–	D8F	–	CH

Alternations

Code	CH
Description	Add 45° Chamfer
Spec	8 (W=25) 10 (W=30)



3D CAD is available online.



Type	Material	Finish
APR4F	A-36 Steel	Black Oxide
SAPR4F	304 Stainless Steel	—

Tolerance					
Dimension	Tol.	Finish (Ra)	Geometric		
0.0	±0.3	6.0 µm	▱	Surfaces	0.015 T.I.R.
0.00	±0.03	3.0 µm	⊥		
0.000	±0.020	1.6 µm	//		

Configurable NAAMS (L-3 Facehole)

Part Number		T Thickness	B Length (0.01 mm inc.)	L Length (1 mm inc.)	Hole Selection			B1 (±0.3)	L1 (±0.3)	L2 (±0.3)	W1 (±0.3)
Type	(W) Width				N/M Hole Selection	D Dowel Hole	Tolerance				
APR4F SAPR4F	25	20 24	35–120 (±0.3)	50–120 (±0.3)	N9	D6F (F7)	+0.010 / +0.022	=B-T	=L-30	=L+5	=W/2
					N11	D6H (H6)	+0.000 / +0.008				
					M8	D8F (F7)	+0.013 / +0.028				
					M10	D8H (H6)	+0.000 / +0.009				

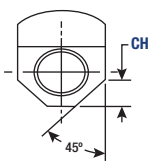
N – Through Hole, N9 for M8 Screw, N11 for M10 Screw
M – Tapped Hole (Coarse Thread), M8 x 1.25; M10 x 1.5
D – Dowel Hole
D, N & M – Holes are machined to a nominal depth of twice the diameter

Order Example:

Part Number													
Type	Width	–	T	–	B	–	L	–	Hole (N/M)	–	Dowel (D)	–	Alteration (CH)
APR4F	25	–	T20	–	B37	–	L62	–	N9	–	D8F	–	
APR4F	25	–	T20	–	B37	–	L62	–	N9	–	D8F	–	CH

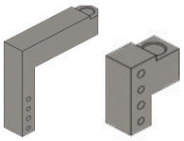
Alternations

Code	CH
Description	Add 45° Chamfer
Spec	8 (W=25)

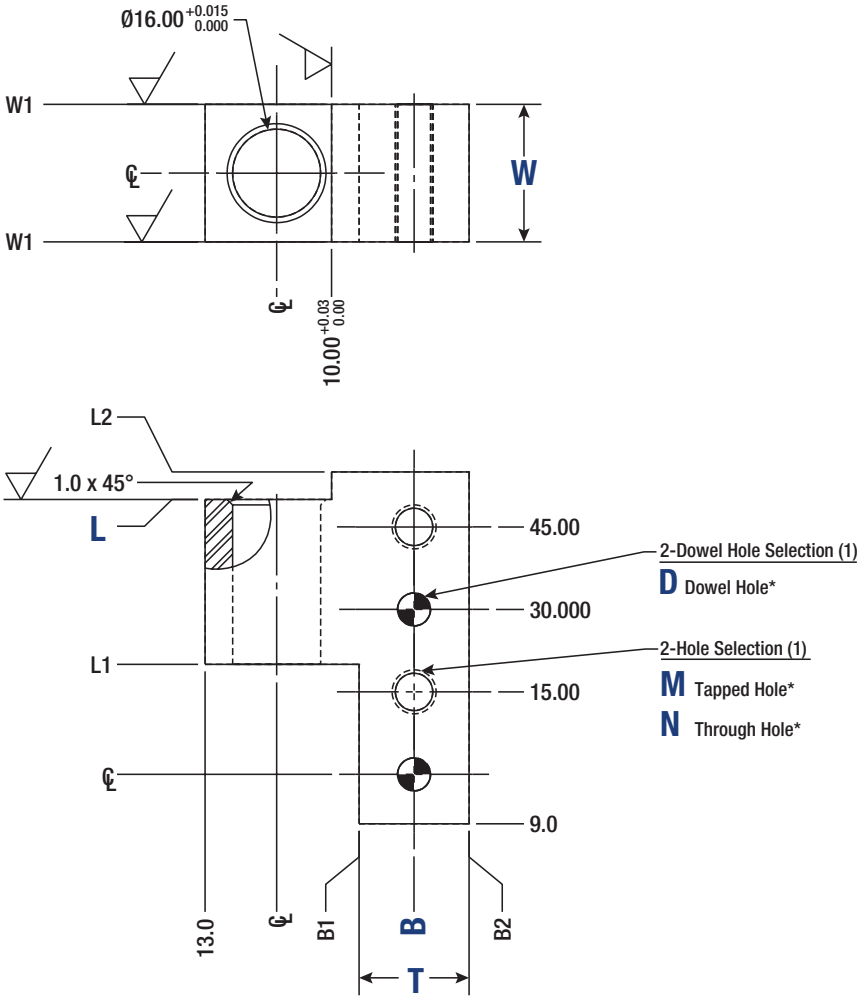


Pin Retainers

CONFIGURABLE 4 SIDEHOLE



3D CAD is available online.



Type	Material	Finish
APR4S	A-36 Steel	Black Oxide
SAPR4S	303/304 Stainless Steel	—

Tolerance					
Dimension	Tol.	Finish (Ra)	Geometric		
0.0	±0.3	6.0 µm	▱	Surfaces	0.015 T.I.R.
0.00	±0.03	3.0 µm	⊥		
0.000	±0.020	1.6 µm	//		

Configurable NAAMS (L-3 Sidehole)

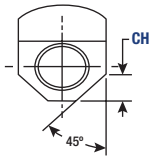
Part Number		T Thickness	B Length (0.01 mm inc.)	L Length (1 mm inc.)	Hole Selection			B1 (±0.3)	B2 (±0.3)	L1 (±0.3)	L2 (±0.3)	W1 (±0.3)
Type	(W) Width				N/M Hole Selection	D Dowel Hole	Tolerance					
APR4S SAPR4S	25 30	20 24	25–110 (±0.020)	50–120 (±0.3)	N9	D6F (F7)	+0.010 / +0.022	=B-(T/2)	=B-(T/2)	=L-30	=L+5	=W/2
					N11	D6H (H6)	+0.000 / +0.008					
					M8	D8F (F7)	+0.013 / +0.028					
					M10	D8H (H6)	+0.000 / +0.009					

N – Through Hole, **N9 for M8 Screw, N11 for M10 Screw**
M – Tapped Hole (Coarse Thread), **M8 x 1.25; M10 x 1.5**
D – Dowel Hole
D, N & M – Holes are machined to a nominal depth of twice the diameter

Order Example:

Part Number												
Type	Width	–	T	–	B	–	L	–	Hole (N/M)	–	Dowel (D)	–	Alteration (CH)
APR4S	25	–	T20	–	B37	–	L62	–	N9	–	D8F	–	
APR4S	25	–	T20	–	B37	–	L62	–	N9	–	D8F	–	CH

Alternations

Code	CH	
Description	Add 45° Chamfer	
Spec	8 (W=25) 10 (W=30)	