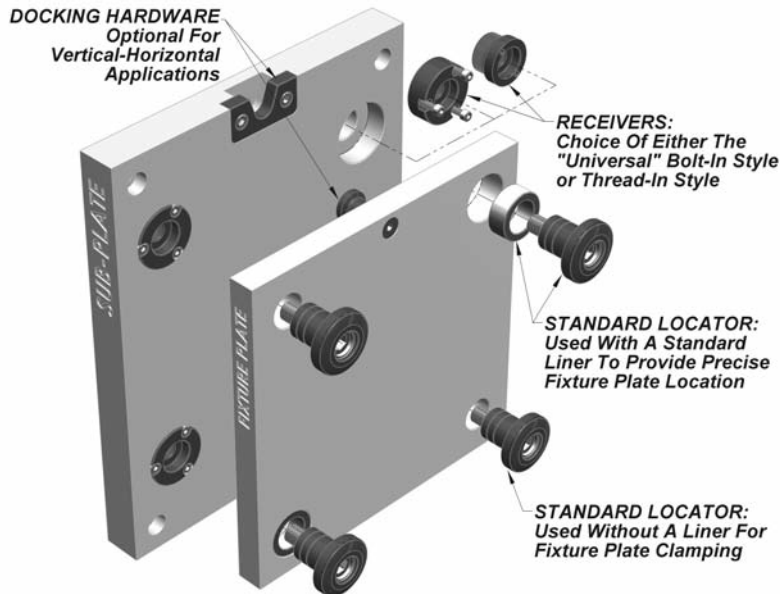


PRECISION LOCATING & MOUNTING SYSTEM

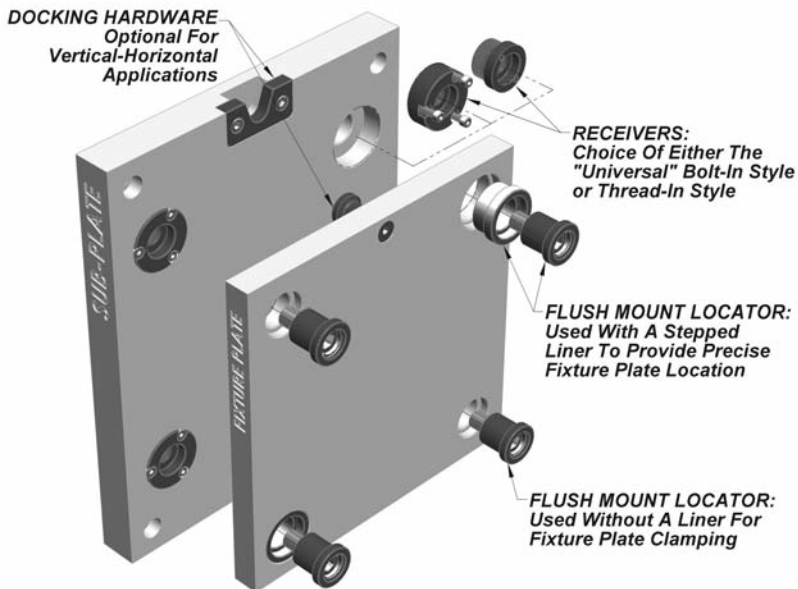
Standard Locators



The SpeedLoc™ Precision Locating & Mounting System consists of locators/fasteners, receivers and bushings for use in a wide range of tooling, fixturing, workholding, production, welding and assembly applications. They offer the ability to make fast, accurate set-up changes which enables significant improvements in machining productivity, throughput rates, quality, and reduced operating costs.

SpeedLoc has solved the typical problems associated with precision attachment and removal of fixture plates, tooling, and accessories. The SpeedLoc System eliminates the need to pry, pound and use jack screws to separate the fixture plate from the sub-plate or machine table. The SpeedLoc System uses a threaded fastening device to mechanically extract the precision "locator" from its "receiver", allowing easy separation of fixture plates, tooling, and accessories. Unlike competitive ball locking products, SpeedLoc does not require expensive "repair kits" since there are no rubber o-rings to break or finicky ball bearings to fall out or fracture.

Flush Mount Locators



The SpeedLoc Precision Locating & Mounting System is often used with:

- CNC Machines
- Fabricating
- Assembly Machines
- Welding Fixtures
- Palletized Fixtures
- Injection Molding
- EDM
- Stamping
- Packaging Machines
- Robotics
- Tooling Columns
- Fixture Plates
- Modular Fixturing

PRECISION LOCATING & MOUNTING SYSTEM


Place fixture plate over sub-plate or machine table containing SpeedLoc receivers.


SpeedLoc Precision Mounting and Locating System features include...


Insert two SpeedLoc precision locators through holes lined with hardened bushings and into the receivers.



Insert remaining two locators into unlined holes and tighten to draw each locator to the desired torque.



Total time required to unload existing fixture plate and load a new fixture plate is typically under 2 minutes.

- **Self-Extracting** – the unique design of SpeedLoc enables the device to easily and quickly “self-extract” from tooling, fixturing, etc. There is no binding or other hang-ups that delay removal time or compromise the accuracy of the locking system.
- **Precise Locating** – Features a repeatability of +/- .0004”
- **Easy Installation** – the SpeedLoc System is easily installed into a wide range of applications using standard tooling and machining practices.
- **Compact** – requires minimal space in tooling and fixturing applications.
- **American Made** – Manufactured from quality alloy materials.
- **High Clamping Strength** – over 45,000 lbs.
- **Recessed/Flush mount capability.**
- **Ability to retrofit with existing competitive ball lock type systems.**



Commonly asked questions...

Q. What is the SpeedLoc Precision Locating & Mounting System?

A. It is a means of locating and locking two flat surfaces together. These surfaces are most commonly a fixture plate and sub-plate, however, they are also used in many other applications because of their holding strength and accuracy.

Q. How does it locate the fixture plate?

A. The SpeedLoc System locates with receivers in the base plate, liner bushings in the sub-plate and locator/fasteners locking the two surfaces together.

Q. How many locators are needed to locate and fasten the fixture plate?

A. Two locators with liner bushings are required to accurately position and two locators without liner bushings to fasten only.

Q. How does it fasten?

A. The SpeedLoc locators use standard threads to hold the two surfaces together. By tightening the locators into the receivers very high holding forces can be achieved.

Q. Can the SpeedLoc be mounted so the work piece mounting surface is free from any interference?

A. Yes, flush mount locators allow the head to lie flush with the fixture plate surface.

Q. Can the SpeedLoc System be used in high temperature applications?

A. Yes, because all parts are made from heat treated alloy steel, temperatures up to +500°F are not a problem. The user should account for thermal expansion of the fixture plates and bases that could affect tolerances.

Q. Can fixture plates be mounted in both the horizontal and vertical positions with the SpeedLoc System?

A. Yes, in vertical mounting applications, SpeedLoc offers docking hardware to “hang” the fixture plate from the tooling column before fastening the surfaces together.

Q. Can a current ball locking type system be retrofit to work with the SpeedLoc System?

A. Yes, the Universal Bolt-In Receivers will fit directly into the pocket that holds ball locking type receivers. Also, the SpeedLoc locators will fit the existing holes and liners of a fixture plate set up for ball locking systems.



**Standard
Locators**



**Flush Mount
Locators**



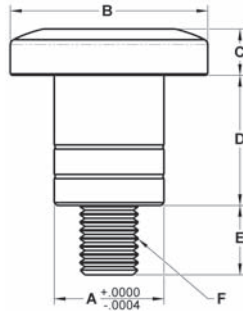
**Thread-In
Receivers**



**Universal Bolt-In
Receivers**

PRECISION LOCATING & MOUNTING SYSTEM

Standard Locators



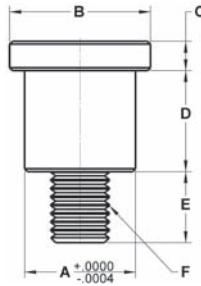
Material	Heat Treat	Tensile Strength PSI Min	Yield Strength PSI Min	Finish
AISI-4340	Rc 40-43	180,000	140,000	Black Oxide

These standard locators offer easy installation, quick operation, high holding strength and precise repeatability for use in a wide range of tooling, fixturing and assembly operations. These locators thread into the receivers shown on the following pages or can be used in specialty customer designed applications. These locators enable accurate and fast set up. In addition, they can also be used in production environments. The unique design enables these locators to easily and quickly “self-extract” from fixture plates. This eliminates binding issues which can compromise alignment accuracy or damage fixturing.

Part #	Fixture Plate Thickness +/- .005"	Shank Dia. (mm) A	Head Dia. B	Head Thickness C	Shank Length D	Thread Length E	Screw Size F	Max Holding Force (lbs)	Max Torque (ft/lbs)
MPAS-13001	.500	13	1.000	.250	.780	.40	1/4-20	2,964	17
MPAS-13002	.750	13	1.000	.250	1.030	.40	1/4-20	2,964	17
MPAS-16001	.500	16	1.375	.312	.780	.43	5/16-18	5,385	35
MPAS-16002	.750	16	1.375	.312	1.030	.43	5/16-18	5,385	35
MPAS-20001	.750	20	1.625	.375	1.070	.50	3/8-16	8,107	62
MPAS-20002	1.000	20	1.625	.375	1.320	.50	3/8-16	8,107	62
MPAS-25001	.750	25	1.800	.406	1.065	.63	1/2-13	14,709	150
MPAS-25002	1.000	25	1.800	.406	1.315	.63	1/2-13	14,709	150
MPAS-25004	2.000	25	1.800	.406	2.315	.63	1/2-13	14,709	150
MPAS-30001	.750	30	2.125	.500	1.150	.75	5/8-11	22,623	283
MPAS-30002	1.000	30	2.125	.500	1.400	.75	5/8-11	22,623	283
MPAS-30004	2.000	30	2.125	.500	2.400	.75	5/8-11	22,623	283
MPAS-35001	.750	35	2.250	.500	1.150	.88	3/4-10	31,572	500
MPAS-35002	1.000	35	2.250	.500	1.400	.88	3/4-10	31,572	500
MPAS-35003	1.500	35	2.250	.500	1.900	.88	3/4-10	31,572	500
MPAS-35004	2.000	35	2.250	.500	2.400	.88	3/4-10	31,572	500
MPAS-50001	.750	50	3.000	.687	1.270	1.17	1"-8	46,958	1,042
MPAS-50002	1.000	50	3.000	.687	1.520	1.17	1"-8	46,958	1,042
MPAS-50003	1.500	50	3.000	.687	2.020	1.17	1"-8	46,958	1,042
MPAS-50004	2.000	50	3.000	.687	2.520	1.17	1"-8	46,958	1,042

PRECISION LOCATING & MOUNTING SYSTEM

Flush Mount Locators



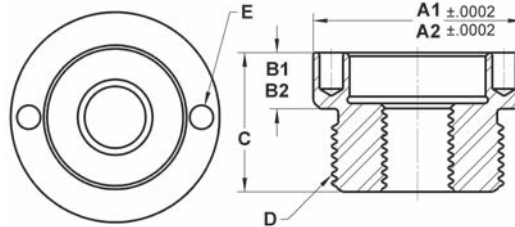

Material	Heat Treat	Tensile Strength PSI Min	Yield Strength PSI Min	Finish
AISI-4340	Rc 40-43	180,000	140,000	Black Oxide

These flush mount locators offer easy installation, quick operation, high holding strength and precise repeatability for use in a wide range of tooling, fixturing and assembly operations. These locators thread into the receivers shown on the following pages or can be used in specialty customer designed applications. The flush mount locators allow the head to lie flush with the fixture plate surface. These locators enable accurate and fast set up. In addition, they can also be used in production environments. The unique design enables these locators to easily and quickly “self-extract” from fixture plates. This eliminates binding issues which can compromise alignment accuracy or damage fixturing.

Part #	Fixture Plate Thickness +/- .005"	Shank Dia. (mm) A	Head Dia. B	Head Thickness C	Shank Length D	Thread Length E	Screw Size F	Max Holding Force (lbs)	Max Torque (ft/lbs)
MPAS-13010	.500	13	.635	.175	.587	.40	1/4-20	2,964	17
MPAS-13011	.750	13	.635	.175	.837	.40	1/4-20	2,964	17
MPAS-16010	.500	16	.786	.175	.587	.38	5/16-18	5,385	35
MPAS-16011	.750	16	.786	.175	.837	.38	5/16-18	5,385	35
MPAS-20010	.750	20	.975	.250	.800	.45	3/8-16	8,107	62
MPAS-20011	1.000	20	.975	.250	1.050	.45	3/8-16	8,107	62
MPAS-25010	.750	25	1.218	.250	.800	.55	1/2-13	14,709	150
MPAS-25011	1.000	25	1.218	.250	1.050	.55	1/2-13	14,709	150
MPAS-25014	2.000	25	1.218	.250	2.050	.55	1/2-13	14,709	150
MPAS-30010	.750	30	1.500	.312	.825	.75	5/8-11	22,623	283
MPAS-30011	1.000	30	1.500	.312	1.075	.75	5/8-11	22,623	283
MPAS-35010	1.000	35	1.750	.312	1.075	.86	3/4-10	31,572	500
MPAS-35012	1.500	35	1.750	.312	1.575	.86	3/4-10	31,572	500

PRECISION LOCATING & MOUNTING SYSTEM

Thread-In Receivers

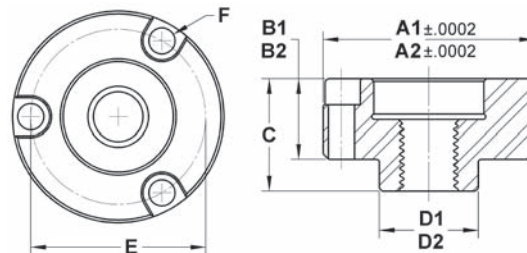


Material	Heat Treat	Tensile Strength PSI Min	Yield Strength PSI Min	Finish
AISI-4340	Rc 40-43	180,000	140,000	Black Oxide

These receivers are installed in the sub-plate or table to receive the locator units. Thread-in receivers occupy a smaller footprint which optimizes sub-plate space. They are easier to install, less expensive and offer higher pull out strengths than the universal bolt-in receivers. In addition, thread-in receivers allow the sub-plate to be fully machined from one side.

Part #	Fixture Plate Thickness Min. (Inch)	Locator Size mm	Receiver Head Dia. A1	Fixture Plate Bore Dia. A2	Receiver Head Height B1	Fixture Plate C'Bore Depth B2	Receiver Height C	Thread Size D	Spanner Wrench Hole E
MPAR-13005	.75	13	.9498	.9506	.285	.305	.720	3/4-16	.140
MPAR-16005	.75	16	1.0623	1.0631	.285	.305	.720	7/8-14	.140
MPAR-20005	1.00	20	1.2748	1.2756	.375	.395	.840	1"-12	.170
MPAR-25005	1.25	25	1.4998	1.5006	.375	.395	.955	1-1/4-12	.170
MPAR-30005	1.38	30	1.8123	1.8131	.485	.510	1.200	1-1/2-12	.204
MPAR-35005	1.50	35	2.1248	2.1256	.607	.635	1.265	1-1/2-12	.265
MPAR-50005	2.00	50	2.7498	2.7506	.750	.770	1.700	1-1/2-12	.265

Universal Bolt-In Receivers



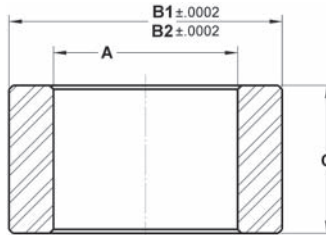
Material	Heat Treat	Tensile Strength PSI Min	Yield Strength PSI Min	Finish
AISI-4340	Rc 40-43	180,000	140,000	Black Oxide

These receivers are installed in the sub-plate or machine table to receive the locator units. Universal bolt-in receivers are interchangeable with competitive ball locking systems. They allow you to take advantage of the speed, precision and easy installation of the SpeedLoc System without the need to produce new sub-plates or reworking existing sub-plates. Mounting socket head cap screws are included.

Part #	Fixture Plate Thickness Min. (Inch)	Locator Size (mm)	Receiver Head Dia. A1	Fixture Plate Bore Dia. A2	Receiver Head Height B1	Fixture Plate C'Bore Depth B2	Receiver Height C	Receiver OD D1	Fixture Plate Clear. Hole D2	Bolt Center Dia. E	SHCS Size F
MPAR-13001	.75	13	1.3748	1.3756	.454	.474	.720	.563	.688	.984	#8-32 x .50
MPAR-16001	.75	16	1.4368	1.4376	.454	.474	.720	.688	.813	1.125	#8-32 x .50
MPAR-20001	1.00	20	1.6871	1.6879	.625	.642	.840	.750	.813	1.362	#10-32 x .75
MPAR-25001	1.25	25	2.0621	2.0629	.785	.804	.955	.875	1.000	1.644	1/4-28 x .88
MPAR-30001	1.38	30	2.2652	2.2660	.860	.876	1.200	1.063	1.188	1.875	1/4-28 x 1.00
MPAR-35001	1.50	35	2.6871	2.6879	.890	.909	1.265	1.438	1.563	2.178	5/16-24 x 1.00
MPAR-50001	2.00	50	3.4996	3.5004	1.225	1.244	1.700	2.000	2.156	2.916	3/8-24 x 1.25

PRECISION LOCATING & MOUNTING SYSTEM

Standard Liner Bushings

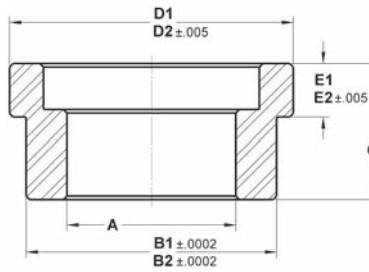


Standard headless liner bushings are used with standard SpeedLoc locators to protect the integrity of precision locating holes on bases, fixture plates, indexers and other workholding devices. They are a critical component for creating the highest possible machining accuracy and extending the life of the SpeedLoc System. For most applications, only two bushings should be used to avoid binding and alignment issues. Made from AISI-1144 alloy steel. Hardened to Rc 62-64.

Part #	Fixture Plate Thickness +/- .005"	Locator Size A (mm)	Liner OD B1	Plate Bore Dia. B2	Liner Height C
MPAL-13001	.500	13	.7516	.7510	.450
MPAL-13002	.750	13	.7516	.7510	.700
MPAL-16001	.500	16	1.0006	1.0000	.450
MPAL-16002	.750	16	1.0006	1.0000	.700
MPAL-16004	1.000	16	1.0006	1.0000	.950
MPAL-20001	.750	20	1.3770	1.3764	.700
MPAL-20002	1.000	20	1.3770	1.3764	.950
MPAL-20003	1.500	20	1.3770	1.3764	1.450
MPAL-20004	2.000	20	1.3770	1.3764	1.950
MPAL-25001	.750	25	1.3770	1.3764	.700
MPAL-25002	1.000	25	1.3770	1.3764	.950
MPAL-25003	1.500	25	1.3770	1.3764	1.450
MPAL-25004	2.000	25	1.3770	1.3764	1.950
MPAL-30001	.750	30	1.7521	1.7515	.700
MPAL-30002	1.000	30	1.7521	1.7515	.950
MPAL-30003	1.500	30	1.7521	1.7515	1.450
MPAL-30004	2.000	30	1.7521	1.7515	1.950
MPAL-35001	.750	35	1.7521	1.7515	.700
MPAL-35002	1.000	35	1.7521	1.7515	.950
MPAL-35003	1.500	35	1.7521	1.7515	1.450
MPAL-35004	2.000	35	1.7521	1.7515	1.950
MPAL-50001	.750	50	2.5023	2.5017	.700
MPAL-50002	1.000	50	2.5023	2.5017	.950
MPAL-50003	1.500	50	2.5023	2.5017	1.450
MPAL-50004	2.000	50	2.5023	2.5017	1.950

PRECISION LOCATING & MOUNTING SYSTEM

Stepped Liner Bushings



Stepped liner bushings are used with flush mount SpeedLoc locators and offer a flush work surface free from interference. (stepped liners may be used with standard locators) Liners protect the integrity of locating holes on bases, fixture plates, indexers and other workholding devices. They are a critical component for creating the highest possible machining accuracy and extending the life of the SpeedLoc System. For most applications, only two bushings should be used to avoid binding and alignment issues. Made from AISI-1144 alloy steel. Hardened to Rc 62-64.

Part #	Fixture Plate Thickness +/- .005"	Locator Size A (mm)	Liner OD B1	Fixture Plate Bore Dia. B2	Liner Height C	Liner Head OD D1	Fixture Plate C'Bore Dia. D2	Liner C'Bore Height E1	Fixture Plate C'Bore Depth E2
MPAL-13101	.500	13	.7516	.7510	.450	.922	.935	.218	.235
MPAL-13102	.750	13	.7516	.7510	.700	.922	.935	.218	.235
MPAL-16101	.500	16	1.0006	1.0000	.450	1.234	1.250	.313	.330
MPAL-16102	.750	16	1.0006	1.0000	.700	1.234	1.250	.313	.330
MPAL-16103	1.000	16	1.0006	1.0000	.950	1.234	1.250	.313	.330
MPAL-20101	.750	20	1.3770	1.3764	.700	1.609	1.625	.375	.395
MPAL-20102	1.000	20	1.3770	1.3764	.950	1.609	1.625	.375	.395
MPAL-20103	1.500	20	1.3770	1.3764	1.450	1.609	1.625	.375	.395
MPAL-20104	2.000	20	1.3770	1.3764	1.950	1.609	1.625	.375	.395
MPAL-25101	.750	25	1.3770	1.3764	.700	1.609	1.625	.375	.395
MPAL-25102	1.000	25	1.3770	1.3764	.950	1.609	1.625	.375	.395
MPAL-25103	1.500	25	1.3770	1.3764	1.450	1.609	1.625	.375	.395
MPAL-25104	2.000	25	1.3770	1.3764	1.950	1.609	1.625	.375	.395
MPAL-30101	.750	30	1.7521	1.7515	.700	1.984	2.000	.375	.395
MPAL-30102	1.000	30	1.7521	1.7515	.950	1.984	2.000	.375	.395
MPAL-30103	1.500	30	1.7521	1.7515	1.450	1.984	2.000	.375	.395
MPAL-30104	2.000	30	1.7521	1.7515	1.950	1.984	2.000	.375	.395
MPAL-35102	1.000	35	1.7521	1.7515	.950	1.984	2.000	.375	.395
MPAL-35103	1.500	35	1.7521	1.7515	1.450	1.984	2.000	.375	.395
MPAL-35104	2.000	35	1.7521	1.7515	1.950	1.984	2.000	.375	.395