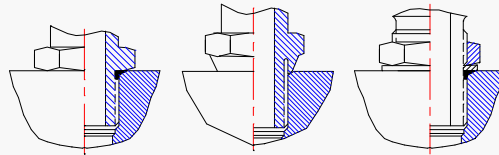


## BOSS SEPARABLE FITTING



### DESIGN CONCEPT:

The concept of MS33649 Boss design provides an internally threaded port to mate with fittings for use in extreme tight areas. The design of the Boss accommodates mating with Straight threaded fitting end as well as Flared or Flareless fitting ends. An O-ring that is installed on the hex face of the mating fitting end and compressed against the front seat of the Boss surface accomplishes sealing.

In the case of shape fittings such as elbow, tee and cross configurations. A tight fit washer supported by a jam nut is assembled on the externally threaded port for securing the O-ring. As an option, externally threaded Flared or Flareless bulkhead fitting ends can also be used as alternative fitting ends. Position the fitting within the final turn of the last thread engagement and then tighten the jam nut on the washer to effect O-ring sealing.

O-ring materials shall be selected based on compatibility with system fluid and temperature requirements. An option is given on straight fitting connections by utilizing the one-piece externally threaded fitting end with an integral metal seal on the hex face. This concept allows the fitting joint to withstand any system fluid and temperature range that is compatible with the system tubing materials being used.

This design concept is handy for fluid connections on actuators, instrument gages, manifolds, pumps, reservoirs, etc. It is also an ideal fitting design for drainage purpose as well.

## **DESIGN ADVANTAGES:**

- Sealing efficiency is accomplished by changing new O-ring per each repeated usage. Thus, wear and tear of both mating fittings are kept to minimum to reduce down time and high repair cost.
- Assembly of Boss connections can be made in place for production and repair applications.
- Design concept allows fitting connections be installed in extreme tight areas.
- Fittings are available in Cres, Titanium Alloy and Aluminum Alloy materials which are virtually compatible for use with just about any tube materials.
- No special tooling is required except standard torque wrenches for fitting installation.

## **STANDARD PROCUREMENT SPECIFICATION FOR BOSS FITTINGS**

SAE AS4842 or Military MIL-F-5509 specifications define Form, Fit, Function and Procurement requirements for Boss fittings.

## **APPROVAL STATUS**

Airdrome fittings are approved for use in various military and commercial programs at Allison, Boeing, Canadair, DeHavilland, General Electric, Northrop/Grumman, etc.

## FITTING MATERIAL SELECTION

Fittings and nuts are offered in the following materials for use with various tubing materials, fluid and operating temperature:

### MATERIAL AND CODING

Titanium Alloy	Code T	Indicates 6AL-4V per AMS4928.
Cres	Code J	Indicates 304 per AMS-QQ-S-763.
	Code K	Indicates 316 per AMS-QQ-S-763.
	Code R	Indicates 321 per AMS-QQ-S-763.
	Code S	Indicates 347 per AMS-QQ-S-763.
Carbon steel	Code -	Indicates 4130 per MIL-S-6758 or 4140 per MIL-S-5626.
Aluminum Alloy	Code D	Indicates 2024-T6 or T851 per QQ-A-225/6 for bar/plate stock materials or 2014-T6 per QQ-A-367 for forging material.
	Code W	Indicates 7075-T73 per QQ-A-225/9 for bar/plate stock materials or per QQ-A-367 for forging material.

### RECOMMENDATION OF PACKING AND LUBRICANT

SYSTEM FLUID	PACKING	LUBRICANT
Hydraulic - Petroleum base	MS28778, MS3393 and/or MIL-R-83248/1 or /2	System fluid
Hydraulic - Phosphate base	NAS1612	System fluid
Pneumatic	MS9385	MIL-G-4343
Engine lubricant - Petroleum base	MIL-R-83248/1	System fluid
Engine lubricant - Synthetic base	”	”
Engine fuel - JP3, JP4, JP5, JP6, RJ1, RP1 or HEF2	”	”
Oxygen	MS9385	None
Vacuum	MIL-R-83248/2	None
Coolant - Ethylene Glycol	MS28778	None
Coolant - Silicate Esters	”	”

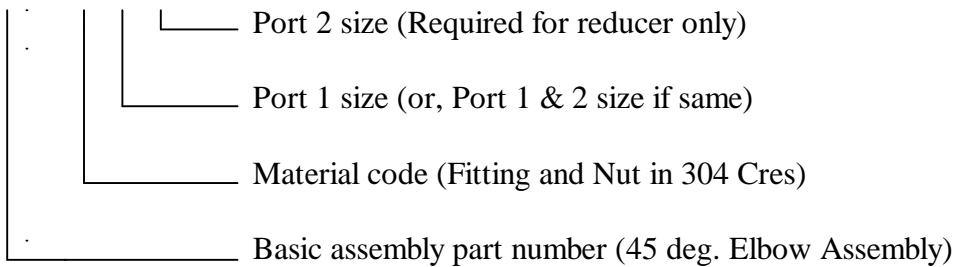
## SIZE AND MATERIAL VERSUS OPERATING PRESSURE

Fitting/tubing operating pressures vary according to size and material. The following shows standard size range and corresponding operating pressures: (Shape fittings are rated for 1500 psi on all sizes)

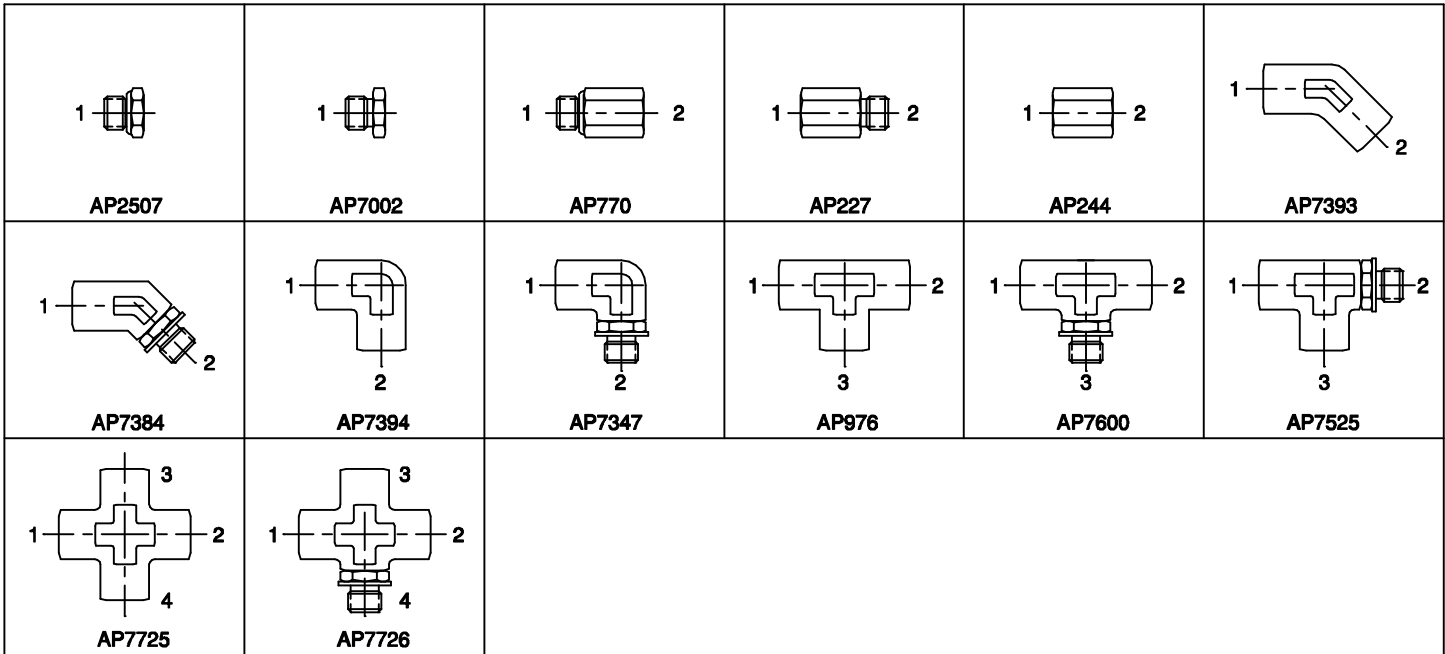
FITTING SIZE	TUBE O.D.	OPERATING PRESSURE (psi) PER FITTING MATERIAL	
		Ti Alloy & Cres	Alum Alloy
02	1/8	3000	3000
03	3/16	3000	3000
04	1/4	3000	3000
05	5/16	3000	3000
06	3/8	3000	3000
07	7/16	3000	3000
08	1/2	3000	3000
09	9/16	3000	3000
10	5/8	3000	3000
11	11/16	3000	3000
12	3/4	3000	3000
14	7/8	3000	3000
16	1	3000	1500
18	1-1/8	1500	1500
20	1-1/4	1500	1500
24	1-1/2	1500	1000
28	1-3/4	1500	600
32	2	1500	600

## EXAMPLE OF PART NUMBER FOR ORDERING FITTINGS

AP7384 J 12 08



**Note:** Contact Airdrome Precision Components for special fitting configuration, material and/or size not listed in this catalog.



### Boss Fittings and Equivalent Industry Standards

Fitting Shape	Reducer Port Sequence for Airdromr Part No. only (See Example of Part.)				Airdrome Standard	Aerospace Standard	Military Standard	Airforce - Navy Standard
	1	2	3	4				
Plug	**M				AP 2507			
	M				AP 7002	AS 4350		
Straight	**M	F			AP 770			
	F	M			AP 227	AS 5172	MS 24397	AN 893
	F	F			AP 244	AS 4349		
45 deg. Elbow	F	F			AP 7393			AN 941
	F	M			AP 7384			
90 deg. Elbow	F	F			AP 7394			AN 939
	F	M			AP 7347			
Tee	F	F	F		AP 976			AN 938
	F	F	M		AP 7600			
	F	M	F		AP 7525			
Cross	F	F	F	F	AP 7725			AN 937
	F	F	F	M	AP 7726			

Note: 1. F = Female port, M = Male port.

2. \*\* = Male port has integral metal seal.