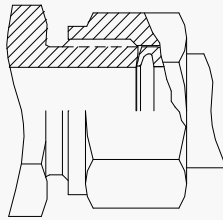


## METRIC DUALISEAL SEPARABLE FITTING



### DESIGN CONCEPT

DualISeal is a registered trademark of a Dynamic Beam Seal fitting offers unique double sealing. The design of DualISeal fitting end has a circumferential beam with a wavy cross sectional profile. The elegant geometric of the beam will uniformly deflect against the mating fitting end creating two circular points of sealing.

At the beginning of nut torque, the primary seal is formed at the lower tangent point of the seal beam. Continuing to tighten the nut will form a secondary seal at the upper tangent point of the seal beam. The secondary seal provides another function as a stop (bottoming) preventing nut over torque to damaging the primary seal for repeated usage. The bottoming feature also provides stability of primary sealing at every DualISeal joints under vibration or bending conditions which are all critical requirements for flight conditions.

High strength materials are used for DualISeal fittings to achieve spring action for sealing force. When the seal beam is under deflection, the spring back force of the seal beam pushing on the mating fitting end creates a locking device for thread engagement. Upon disassembly, the elastic beam will spring back and will be ready for use again.

The contact surfaces (ie: mating fitting end and nut threads) are finished with dry film lubricant to assure ease of multiple repeated assemblies. As an option, dry film lubricant on mating fitting end can be exchanged for a bare metal surface with 8 micro smoothness for use in clean systems related to space programs.

### DESIGN ADVANTAGES:

- A flush sealing face offers easy in place installation.
- Stronger material strength, smaller envelopes and significantly lighter weight than Boss or Flareless (including LT-WT Flareless) fittings.

- Sealing efficiency eliminates unnecessary down time and high repair cost.
  - Seals at lower nut torque than Boss or Flareless fittings.
- X Fittings are available in Cres and Titanium Alloy materials that are virtually compatible for use with just about any high strength tube materials.
- C No special tooling is required except standard torque wrenches for fitting installation.

## STANDARD PROCUREMENT SPECIFICATIONS FOR DUAL/SEAL FITTINGS

AECMA EN3275 specification defines Form, Fit, Function and Procurement requirements for DualSeal fittings.

## QUALIFICATION AND APPROVAL STATUS

Airdrome fittings were qualified per EN3275 specification. The fittings are approved for use in various space, military and commercial programs at Allison, GTRE, HAL, 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

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Titanium Alloy	Code T	Indicates 6AL-4V per AMS4965.
Cres	Code N	Indicates Inconel 718 per AMS5663.
	Code P	Indicates 17-4PH, H-1075 cond., per AMS5643.
	Code -	Indicates 21-6-9 per AMS5656.

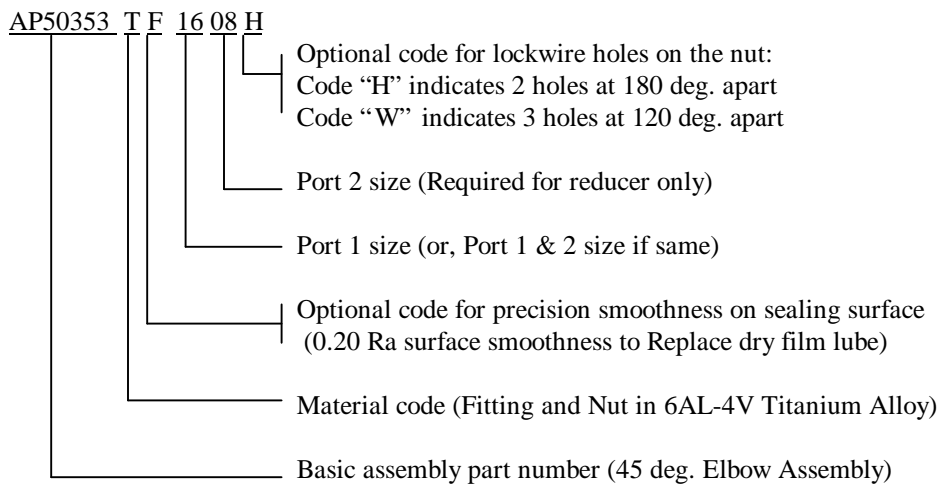
## SIZE AND MATERIAL VERSUS OPERATING PRESSURE

Fitting/tubing operating pressures vary according to size and material. The following shows standard size range and corresponding operating pressures:




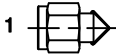



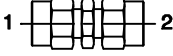

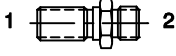
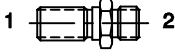
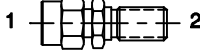
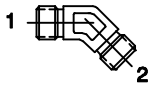
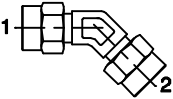
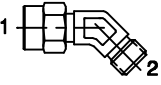

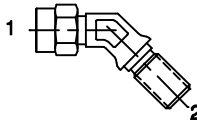
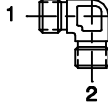
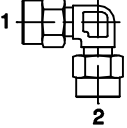
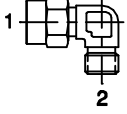
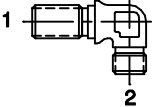
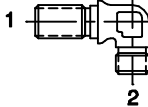
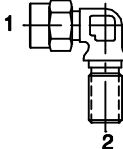
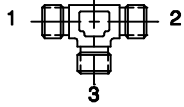
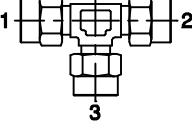
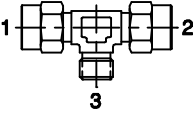
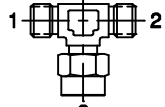
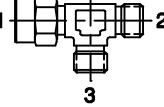
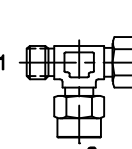
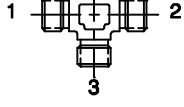
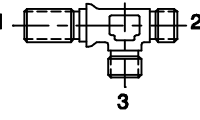
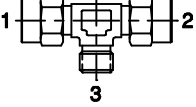
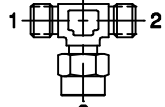
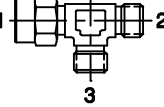
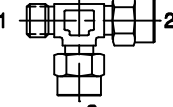
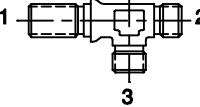
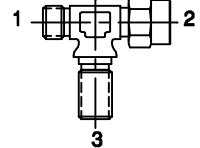
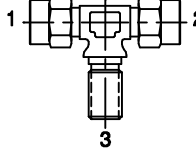
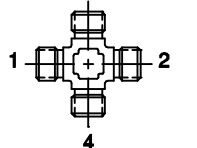
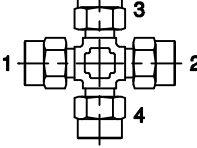
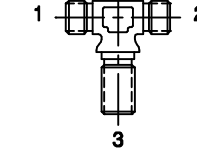
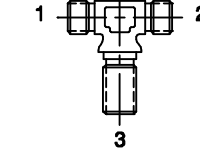
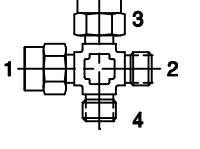
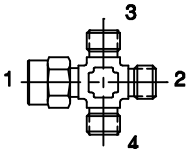
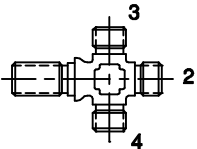
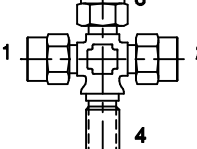
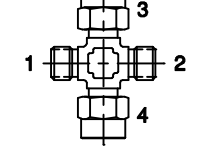
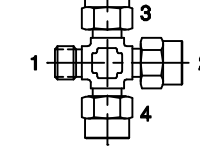
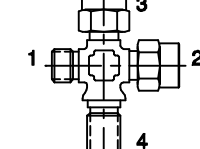
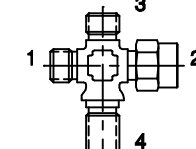


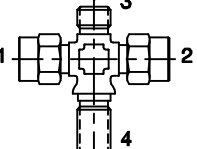
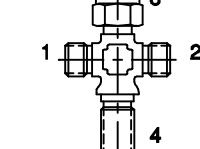
FITTING SIZE	DN	OPERATING PRESSURE (kPa) PER FITTING MATERIAL	
		Ti Alloy	Cres
04	4.0	28000	21000
05	5.0	28000	21000
06	6.0	28000	21000
08	8.0	28000	21000
10	10.0	28000	21000
12	12.0	28000	21000
14	14.0	28000	21000

16	16.0	28000	21000
18	18.0	28000	21000
20	20.0	28000	21000
22	22.0	28000	21000
25	25.0	28000	21000
28	28.0	28000	21000
32	32.0	28000	21000
40	40.0	14000	14000

### EXAMPLE OF PART NUMBER FOR ORDERING FITTINGS



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

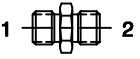
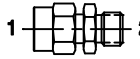
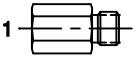
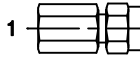
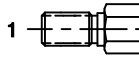
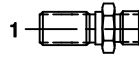
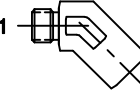
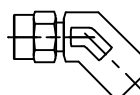
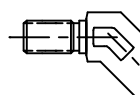
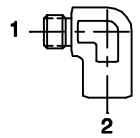
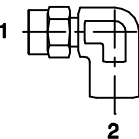
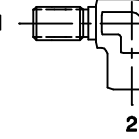
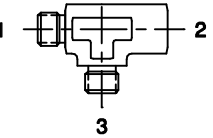
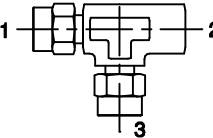
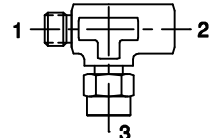
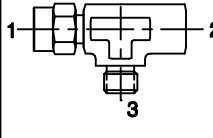
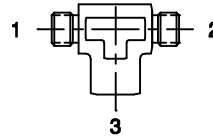
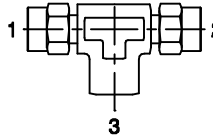
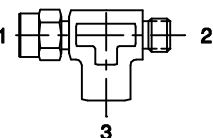
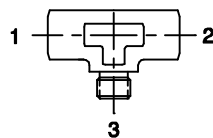
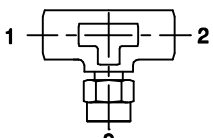
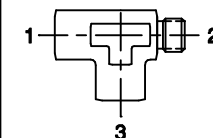
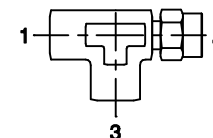
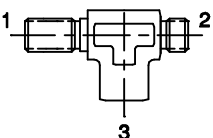
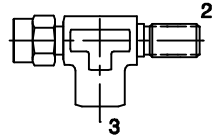
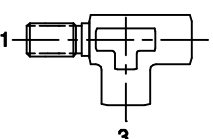
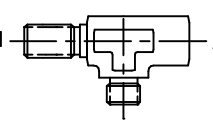
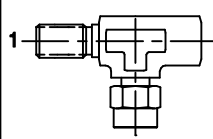
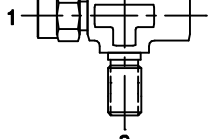
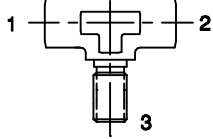
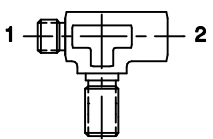
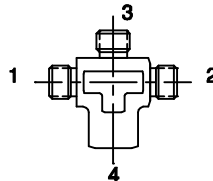
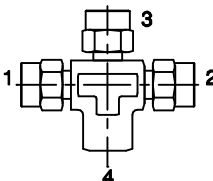
					
AP50027	AP50004	AP50020	AP50392	AP50028	AP50390
					
AP50111	AP50158	AP50159	AP50112	AP50173	AP50167
					
AP50344	AP50357	AP50353	AP50346	AP50356	AP50330
					
AP50352	AP50335	AP50342	AP50348	AP50354	AP50502
					
AP50509	AP50510	AP50503	AP50504	AP50554	AP50506
					
AP50507	AP50512	AP50511	AP50513	AP50505	AP50516
					
AP50514	AP50515	AP50776	AP50782	AP50778	AP50777
					
AP50783	AP50779	AP50780	AP50784	AP50785	AP50786
					
AP50787	AP50788				

**Metric Dual Seal and Equivalent Industry Standards**

Fitting Shape	Port Sequence for Airdrome Part No. only (See Example of Part No.)				Airdrome Standard	AECMA Standard	Aerospace Standard
	1	2	3	4			
Seal					AP50027		
Jam Nut					AP50004	EN3266	
Coupling Nut					AP50020	EN3265	MA2276
Press Cap	F				AP50392	EN3265 & EN3269	
Dust Cap	F				AP50028		MA4248
Plug	M				AP50390	EN3268	
Straight	M	M			AP50111	EN3244 *EN3245	MA2303 *MA2304
	F	F			AP50158		
	F	M			AP50159		
	B	M			AP50112	EN3246	MA2305
	B	M			AP50173	EN3690	
	F	B		AP50167			
45 deg. Elbow	M	M			AP50344	EN3255	MA2289
	F	F			AP50357		
	F	M			AP50353		
	B	M			AP50346	EN3257	MA2292
	F	B			AP50356		
90 deg. Elbow	M	M			AP50330	EN3249	MA2294
	F	F			AP50352		
	F	M			AP50335	EN3250	
	B	M			AP50342	EN3253	MA2298
	B	M			AP50348	EN3692	
	F	B		AP50354			
Tee	M	M	M		AP50502	EN3258 *EN3259	MA2284
	F	F	F		AP50509		
	F	F	M		AP50510		
	M	M	F		AP50503	EN3260	
	F	M	M		AP50504	EN3261	
	M	F	F		AP50554		
	B	M	M		AP50506	EN3263	
	B	M	M		AP50507	EN3564	
	B	M	F		AP50512		
	B	F	M		AP50511		
	B	F	F		AP50513		
	M	M	B		AP50505	EN3262	
	M	M	B		AP50516	EN3694	
M	F	B		AP50514			
F	F	B		AP50515			
Cross	M	M	M	M	AP50776	EN3565	
	F	F	F	F	AP50782		
	M	M	F	F	AP50778		
	M	F	F	F	AP50777		
	F	M	F	M	AP50783		
	F	M	M	M	AP50779		
	B	M	M	M	AP50780		
	F	F	F	B	AP50784		
	F	F	M	B	AP50785		
	M	M	F	B	AP50786		
	M	F	F	B	AP50787		
	M	F	M	B	AP50788		

Notes: 1. F = Female Metric Dual Seal port, M = Male Metric Dual Seal port,  
B = Bulkhead Metric Dual Seal port.

2. \* = A different part number assigned for reducers.

 <p>AP50171</p>	 <p>AP50175</p>	 <p>AP50176</p>	 <p>AP50177</p>	 <p>AP50178</p>	 <p>AP50179</p>
 <p>AP50361</p>	 <p>AP50362</p>	 <p>AP50363</p>	 <p>AP50364</p>	 <p>AP50365</p>	 <p>AP50366</p>
 <p>AP50592</p>	 <p>AP50593</p>	 <p>AP50594</p>	 <p>AP50595</p>	 <p>AP50596</p>	 <p>AP50597</p>
 <p>AP50598</p>	 <p>AP50599</p>	 <p>AP50600</p>	 <p>AP50601</p>	 <p>AP50602</p>	 <p>AP50603</p>
 <p>AP50604</p>	 <p>AP50605</p>	 <p>AP50606</p>	 <p>AP50607</p>	 <p>AP50608</p>	 <p>AP50609</p>
 <p>AP50610</p>	 <p>AP50812</p>	 <p>AP50813</p>			

**Metric Dual Seal to Boss Fittings**

Fitting Shape	Port Sequence for Airdrome Part No. (See Example of Part No.)				Airdrome Standard
	1	2	3	4	
Straight	M	M			AP50171
	F	M			AP50175
	F	M			AP50176
	F	F			AP50177
	B	F			AP50178
	B	M			AP50179
45 deg. Elbow	M	F			AP50361
	F	F			AP50362
	B	F			AP50363
90 deg. Elbow	M	F			AP50364
	F	F			AP50365
	B	F			AP50366
Tee	M	F	M		AP50592
	F	F	F		AP50593
	M	F	F		AP50594
	F	F	M		AP50595
	M	M	F		AP50596
	F	F	F		AP50597
	F	M	F		AP50598
	F	F	M		AP50599
	F	F	F		AP50600
	F	M	F		AP50601
	F	F	F		AP50602
	B	M	F		AP50603
	F	B	M		AP50604
	B	F	F		AP50605
	B	F	M		AP50606
	B	F	F		AP50607
F	F	B		AP50608	
F	F	B		AP50609	
M	F	B		AP50610	
Cross	M	M	M	F	AP50812
	F	F	F	F	AP50813

Note: 1. F = Female Metric Dual Seal or Metric Boss ports,  
M = Male Metric Dual Seal or Metric Boss ports,  
B = Bulkhead Metric Dual Seal male port.