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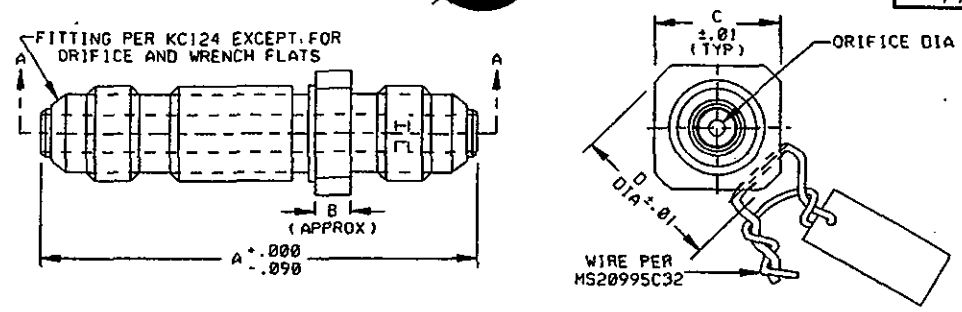
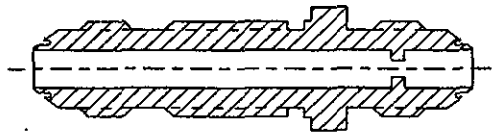
FED SUP CLASS
4730





SECTION A-A

MATERIAL: SEE PROCUREMENT SPECIFICATION. CORROSION RESISTANT STEEL (CLASS 316), CODE "K".

OPERATING PRESSURE: 6600 PSIG (MAXIMUM) FOR ALL SIZES EXCEPT 6500 PSIG (MAXIMUM) FOR 1" SIZE FITTINGS.

FINISH: SEE PROCUREMENT SPECIFICATION.

SCREW THREAD: SEE PROCUREMENT SPECIFICATION.

NOTES:

1. REMOVE BURRS AND SLIVERS. BREAK SHARP EDGES UNLESS OTHERWISE NOTED.
2. DIMENSIONS IN INCHES. UNLESS OTHERWISE SPECIFIED, TOLERANCE DECIMALS ±.016.
3. FOR DESIGN FEATURE PURPOSES, THIS DRAWING TAKES PREDEDENCE OVER PROCUREMENT DOCUMENTS REFERENCED HEREIN.
4. REFERENCED DOCUMENTS SHALL BE OF THE ISSUE IN EFFECT ON THE DATE OF INVITATION FOR BID.
5. MARKING OF FITTINGS SHALL BE CONSISTANT WITH PROCUREMENT SPECIFICATION USING APPLICABLE KC STANDARD PART NUMBER DESIGNATIONS AND ORIFICE DIAMETER AS SHOWN ON THIS DRAWING AND SHALL BE LEGIBILY STAMPED OR EMBOSSED ON A STAINLESS STEEL TAG APPROXIMATELY 1" X 2" X .017". THE TAG SHALL BE LOCKWIRED TO EACH FITTING AS SHOWN.
6. CLEAN, PROTECT & INSPECT PER KSC-C-123, LEVEL 300A, TEST METHOD 1, PRIOR TO INSTALLATION IN FLUID SYSTEMS. CERTIFICATION REQUIRED.
7. THIS DRAWING SUPERCEDES KENNEDY SPACE CENTER DRAWINGS 79K80237 AND 79K80240. FITTINGS PER 79K80237 AND 79K80240 ARE EQUIVALENT TO THOSE OF KC176 AND SHALL BE USED UNTIL EXISTING SUPPLY IS DEPLETED.
8. ALL ORIFICES SHALL BE FLOW TESTED WITH NITROGEN AND CERTIFIED IN ACCORDANCE WITH FLAG NOTE 9. CERTIFICATION MUST INCLUDE FLOW RATE, TEMPERATURE, AND PRESSURE.

EXAMPLE OF PART NOS. KC176K4-.030 = ORIFICE, UNION, BLKHD, $\frac{1}{4}$" OD TUBING, .030" DIAMETER

APPROVED: 11-16-92 REVISED: (B) ADDED SUPERCEDES COLUMN TO SHTS 2 THRU 4. CHANGED NOTES 6 & 7. 9-1-97

CUSTODIAN: JOHN F. KENNEDY SPACE CENTER		
PROCUREMENT SPEC. KSC-F-124	ORIFICE, UNION, BLKHD, FLARED TUBE FOR SEAL RING	STANDARD PART KC176
COORDINATION STATUS KSC DE		SHEET 1 OF 4

FED SUP CLASS
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FLOW RATES ARE CALCULATED FOR AIR OR NITROGEN BY USE OF THE EQUATION: FLOW (SCFM) = 16.5 X ORIFICE AREA (SQ. IN.) X 1000 PSIA UPSTREAM PRESSURE AT 70°F. THIS EQUATION IS LIMITED TO THE CONDITION WHERE DOWNSTREAM PRESSURE IS 53% OF UPSTREAM PRESSURE OR LESS.

TOLERANCE ON GIVEN FLOW RATES:

FOR ORIFICE DIAMETERS .0055 TO .030 TOLERANCE IS ± 20%
FOR ORIFICE DIAMETERS .031 TO .090 TOLERANCE IS ± 15%
FOR ORIFICE DIAMETERS .091 & ABOVE, TOLERANCE IS ± 10%.

TO DETERMINE FLOW RATES FOR UPSTREAM PRESSURES OTHER THAN 1000 PSIA, MULTIPLY GIVEN FLOW RATES BY:

$$\frac{\text{NEW UPSTREAM PRESSURE PSIA}}{1000\ \text{PSIA}}$$

GIVEN FLOW RATES ARE WITHIN TOLERANCE OVER AN UPSTREAM TEMPERATURE SPAN OF ± 30°F. TO DETERMINE FLOW RATES FOR TEMPERATURES OTHER THAN 70°F, MULTIPLY GIVEN FLOW RATES BY:

$$\sqrt{\frac{530}{460 + \text{NEW TEMP °F}}}$$

TO OBTAIN FLOW RATES FOR : HELIUM - MULTIPLY GIVEN FLOW RATE BY 2.69
HYDROGEN - MULTIPLY GIVEN FLOW RATE BY 3.8
OXYGEN - MULTIPLY GIVEN FLOW RATE BY 0.95

DASH NO. CRE STEEL	TUBE OD REF	FLOW RATE SCFM	A DIM	B DIM	C DIM	D DIM	SUPERCEDES P/N
K4	¼	BLANK	2.062	.16	.68	.81	79K80237-1, 79K80240-1
K4-.0055	¼	.39	2.062	.16	.68	.81	79K80237-2, 79K80240-2
K4-.006	¼	.46	2.062	.16	.68	.81	79K80237-3, 79K80240-3
K4-.007	¼	.63	2.062	.16	.68	.81	79K80237-4, 79K80240-4
K4-.008	¼	.83	2.062	.16	.68	.81	79K80237-5, 79K80240-5
K4-.009	¼	1.05	2.062	.16	.68	.81	79K80237-6, 79K80240-6
K4-.010	¼	1.30	2.062	.16	.68	.81	79K80237-7, 79K80240-7
K4-.0125	¼	2.02	2.062	.16	.68	.81	79K80237-8, 79K80240-8
K4-.015	¼	2.92	2.062	.16	.68	.81	79K80237-9, 79K80240-9
K4-.0175	¼	3.97	2.062	.16	.68	.81	79K80237-10, 79K80240-10
K4-.020	¼	5.18	2.062	.16	.68	.81	79K80237-11, 79K80240-11
K4-.025	¼	8.10	2.062	.16	.68	.81	79K80237-12, 79K80240-12
K4-.030	¼	11.66	2.062	.16	.68	.81	79K80237-13, 79K80240-13
K4-.035	¼	15.87	2.062	.16	.68	.81	79K80237-14, 79K80240-14
K4-.040	¼	20.73	2.062	.16	.68	.81	79K80237-15, 79K80240-15
K4-.045	¼	26.24	2.062	.16	.68	.81	79K80237-16, 79K80240-16
K4-.050	¼	32.40	2.062	.16	.68	.81	79K80237-17, 79K80240-17
K4-.055	¼	39.20	2.062	.16	.68	.81	79K80237-18, 79K80240-18
K4-.060	¼	46.65	2.062	.16	.68	.81	79K80237-19, 79K80240-19
K4-.065	¼	54.75	2.062	.16	.68	.81	79K80237-20, 79K80240-20
K4-.070	¼	63.50	2.062	.16	.68	.81	79K80237-21, 79K80240-21
K4-.075	¼	72.89	2.062	.16	.68	.81	79K80237-22, 79K80240-22
K4-.080	¼	82.94	2.062	.16	.68	.81	79K80237-23, 79K80240-23

REVISED: (B) ADDED SUPERCEDES COLUMN, 9-1-97

APPROVED: 11-16-92

CUSTODIAN: JOHN F. KENNEDY SPACE CENTER

PROCUREMENT SPEC. KSC-F-124

COORDINATION STATUS KSC DE

ORIFICE, UNION, BLKHD
FLARED TUBE FOR SEAL RING

STANDARD PART
KC176

SHEET 2 OF 4

NOTICE: WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

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4730

DASH NO. CRE STEEL	TUBE OD REF	FLOW RATE SCFM	A DIM	B DIM	C DIM	D DIM	SUPERCEDES P/N
K4-.085	¼	93.63	2.062	.16	.68	.81	79K80237-24, 79K80240-24
K4-.090	¼	105	2.062	.16	.68	.81	79K80237-25, 79K80240-25
K4-.095	¼	117	2.062	.16	.68	.81	79K80237-26, 79K80240-26
K6	⅜	BLANK	2.234	.27	.81	.93	79K80237-32, 79K80240-32
K6-.010	⅜	1.30	2.234	.27	.81	.93	79K80237-33, 79K80240-33
K6-.018	⅜	4.20	2.234	.27	.81	.93	79K80237-34, 79K80240-34
K6-.026	⅜	8.76	2.234	.27	.81	.93	79K80237-35, 79K80240-35
K6-.034	⅜	14.98	2.234	.27	.81	.93	79K80237-36, 79K80240-36
K6-.042	⅜	22.86	2.234	.27	.81	.93	79K80237-37, 79K80240-37
K6-.050	⅜	32.40	2.234	.27	.81	.93	79K80237-38, 79K80240-38
K6-.058	⅜	43.59	2.234	.27	.81	.93	79K80237-39, 79K80240-39
K6-.066	⅜	56.45	2.234	.27	.81	.93	79K80237-40, 79K80240-40
K6-.074	⅜	70.96	2.234	.27	.81	.93	79K80237-41, 79K80240-41
K6-.082	⅜	87.14	2.234	.27	.81	.93	79K80237-42, 79K80240-42
K6-.090	⅜	105	2.234	.27	.81	.93	79K80237-43, 79K80240-43
K6-.098	⅜	124	2.234	.27	.81	.93	79K80237-44, 79K80240-44
K6-.106	⅜	146	2.234	.27	.81	.93	79K80237-45, 79K80240-45
K6-.114	⅜	168	2.234	.27	.81	.93	79K80237-46, 79K80240-46
K6-.122	⅜	193	2.234	.27	.81	.93	79K80237-47, 79K80240-47
K6-.130	⅜	219	2.234	.27	.81	.93	79K80237-48, 79K80240-48
K6-.138	⅜	249	2.234	.27	.81	.93	79K80237-49, 79K80240-49
K6-.146	⅜	276	2.234	.27	.81	.93	79K80237-50, 79K80240-50
K6-.154	⅜	307	2.234	.27	.81	.93	79K80237-51, 79K80240-51
K6-.162	⅜	340	2.234	.27	.81	.93	79K80237-52, 79K80240-52
K6-.170	⅜	375	2.234	.27	.81	.93	79K80237-53, 79K80240-53
K6-.178	⅜	411	2.234	.27	.81	.93	79K80237-54, 79K80240-54
K6-.186	⅜	448	2.234	.27	.81	.93	79K80237-55, 79K80240-55
K6-.188	⅜	458	2.234	.27	.81	.93	79K80237-56, 79K80240-56
K8	½	BLANK	2.468	.26	1.00	1.12	79K80237-62, 79K80240-62
K8-.010	½	1.30	2.468	.26	1.00	1.12	79K80237-63, 79K80240-63
K8-.020	½	5.18	2.468	.26	1.00	1.12	79K80237-64, 79K80240-64
K8-.030	½	11.66	2.468	.26	1.00	1.12	79K80237-65, 79K80240-65
K8-.040	½	20.73	2.468	.26	1.00	1.12	79K80237-66, 79K80240-66
K8-.050	½	32.40	2.468	.26	1.00	1.12	79K80237-67, 79K80240-67
K8-.060	½	46.65	2.468	.26	1.00	1.12	79K80237-68, 79K80240-68
K8-.070	½	63.50	2.468	.26	1.00	1.12	79K80237-69, 79K80240-69
K8-.080	½	82.94	2.468	.26	1.00	1.12	79K80237-70, 79K80240-70
K8-.090	½	105	2.468	.26	1.00	1.12	79K80237-71, 79K80240-71

REVISED: (B) ADDED SUPERCEDES COLUMN. 9-1-97

APPROVED: 11-16-92

CUSTODIAN: JOHN F. KENNEDY SPACE CENTER

PROCUREMENT SPEC.
KSC-F-124

COORDINATION STATUS
KSC DE

ORIFICE, UNION, BLKHD
FLARED TUBE FOR SEAL RING

STANDARD PART
KC176

SHEET 3 OF 4

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FED SUP CLASS
4730

DASH NO. CRE STEEL	TUBE OD REF	FLOW RATE SCFM (8)	A DIM	B DIM	C DIM	D DIM	SUPERCEDES P/N
K8-.100	½	130	2.468	.26	1.00	1.12	79K80237-72, 79K80240-72
K8-.110	½	157	2.468	.26	1.00	1.12	79K80237-73, 79K80240-73
K8-.120	½	187	2.468	.26	1.00	1.12	79K80237-74, 79K80240-74
K6-.130	½	219	2.468	.26	1.00	1.12	79K80237-75, 79K80240-75
K8-.140	½	254	2.468	.26	1.00	1.12	79K80237-76, 79K80240-76
K8-.150	½	292	2.468	.26	1.00	1.12	79K80237-77, 79K80240-77
K8-.160	½	332	2.468	.26	1.00	1.12	79K80237-78, 79K80240-78
K8-.170	½	375	2.468	.26	1.00	1.12	79K80237-79, 79K80240-79
K8-.180	½	420	2.468	.26	1.00	1.12	79K80237-80, 79K80240-80
K8-.190	½	468	2.468	.26	1.00	1.12	79K80237-81, 79K80240-81
K8-.200	½	518	2.468	.26	1.00	1.12	79K80237-82, 79K80240-82
K8-.210	½	571	2.468	.26	1.00	1.12	79K80237-83, 79K80240-83
K8-.220	½	627	2.468	.26	1.00	1.12	79K80237-84, 79K80240-84
K8-.230	½	686	2.468	.26	1.00	1.12	79K80237-85, 79K80240-85
K8-.240	½	746	2.468	.26	1.00	1.12	79K80237-86, 79K80240-86
K8-.250	½	810	2.468	.26	1.00	1.12	79K80237-87, 79K80240-87
K12	¾	BLANK	3.046	.39	1.37	1.56	79K80237-93, 79K80240-93
K12-.100	¾	130	3.046	.39	1.37	1.56	79K80237-94, 79K80240-94
K12-.120	¾	187	3.046	.39	1.37	1.56	79K80237-95, 79K80240-95
K12-.140	¾	254	3.046	.39	1.37	1.56	79K80237-96, 79K80240-96
K12-.160	¾	332	3.046	.39	1.37	1.56	79K80237-97, 79K80240-97
K12-.180	¾	420	3.046	.39	1.37	1.56	79K80237-98, 79K80240-98
K12-.200	¾	518	3.046	.39	1.37	1.56	79K80237-99, 79K80240-99
K12-.220	¾	627	3.046	.39	1.37	1.56	79K80237-100, 79K80240-100
K12-.240	¾	746	3.046	.39	1.37	1.56	79K80237-101, 79K80240-101
K12-.260	¾	874	3.046	.39	1.37	1.56	79K80237-102, 79K80240-102
K12-.280	¾	1014	3.046	.39	1.37	1.56	79K80237-103, 79K80240-103
K12-.300	¾	1164	3.046	.39	1.37	1.56	79K80237-104, 79K80240-104
K16	1	BLANK	3.093	.38	1.62	1.87	79K80237-110, 79K80240-110
K16-.100	1	130	3.093	.38	1.62	1.87	79K80237-111, 79K80240-111
K16-.140	1	254	3.093	.38	1.62	1.87	79K80237-112, 79K80240-112
K16-.180	1	420	3.093	.38	1.62	1.87	79K80237-113, 79K80240-113
K16-.220	1	627	3.093	.38	1.62	1.87	79K80237-114, 79K80240-114
K16-.260	1	874	3.093	.38	1.62	1.87	79K80237-115, 79K80240-115
K16-.300	1	1164	3.093	.38	1.62	1.87	79K80237-116, 79K80240-116
K16-.340	1	1495	3.093	.38	1.62	1.87	79K80237-117, 79K80240-117
K16-.380	1	1868	3.093	.38	1.62	1.87	79K80237-118, 79K80240-118
K16-.420	1	2282	3.093	.38	1.62	1.87	79K80237-119, 79K80240-119

REVISED: (8) ADDED SUPERCEDES COLUMN, 9-1-97

APPROVED: 11-16-92

CUSTODIAN: JOHN F. KENNEDY SPACE CENTER

PROCUREMENT SPEC. KSC-F-124

COORDINATION STATUS KSC DE

ORIFICE, UNION, BLKHD
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SHEET 4 OF 4

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