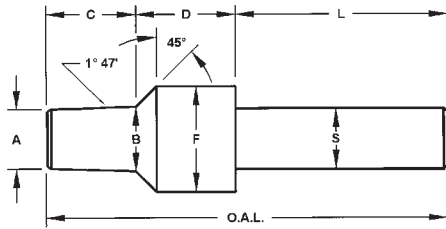


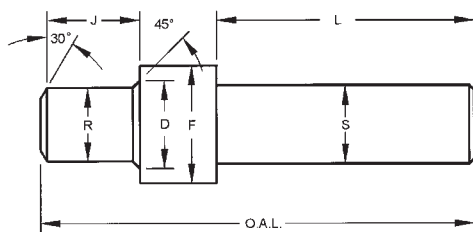
TAPERED PIPE REAMER – BRITISH PARALLEL PIPE – PORT TOOLS

Tapered Pipe Reamer



A	B	C	D	F	L	S	O.A.L.	THREAD	ORDER #
.320	.347	.470	.625	.625	1.50	.500	2.60	1/8-27NPT	PRSS-01
.409	.450	.655	.750	.750	1.50	.500	2.91	1/4-18NPT	PRSS-02
.543	.586	.690	.750	.875	2.00	.500	3.44	3/8-18NPT	PRSS-03
.670	.725	.875	1.000	1.000	2.00	.500	3.88	1/2-14NPT	PRSS-04
.882	.937	.875	1.250	1.250	2.50	1.000	4.62	3/4-14NPT	PRSS-05
1.107	1.173	1.060	1.500	1.500	2.50	1.000	5.06	1-11.5NPT	PRSS-06
1.448	1.518	1.125	1.500	1.875	3.00	1.250	5.62	1 1/4-11.5NPT	PRSS-07
1.687	1.757	1.125	1.750	2.125	3.00	1.250	5.88	1 1/2-11.5NPT	PRSS-08
2.154	2.230	1.220	2.000	2.625	3.00	1.250	6.22	2-11.5NPT	PRSS-09
2.561	2.670	1.750	2.000	3.125	3.00	1.250	6.75	2 1/2-8NPT	PRSS-10
3.180	3.296	1.875	2.000	3.750	3.00	1.250	6.88	3-8NPT	PRSS-11

British Standard Parallel Pipe



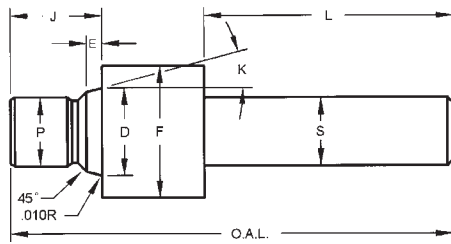
D	F	J	L	R	S	O.A.L.	THREAD	ORDER #
.398	.719	.565	2.00	.345	.500	3.62	1/8 BSPP	PT-BSPP-1/8
.533	.938	.683	2.00	.459	.500	3.62	1/4 BSPP	PT-BSPP-1/4
.671	1.063	.683	2.00	.597	.500	3.62	3/8 BSPP	PT-BSPP-3/8
.840	1.250	.801	2.00	.741	.750	3.62	1/2 BSPP	PT-BSPP-1/2
1.055	1.500	.880	2.50	.958	.750	4.12	3/4 BSPP	PT-BSPP-3/4
1.325	1.875	.998	2.50	1.201	1.000	4.12	1.0 BSPP	PT-BSPP-1.0
1.665	2.313	1.078	2.50	1.541	1.000	4.12	1 1/4 BSPP	PT-BSPP-1 1/4
1.897	2.563	1.078	2.50	1.774	1.000	4.38	1 1/2 BSPP	PT-BSPP-1 1/2

MS21921 - MS21922 - MS20819 - BACD2036 - BACU24AB & AN818 — Port Tools Also Available.

SCSMC Super Compressed Sub Micron Carbide

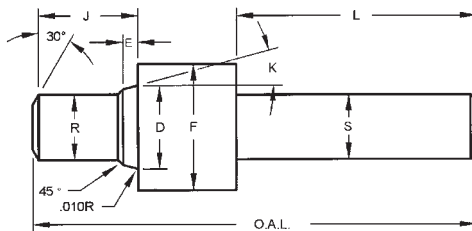
MS16142 (SAEJ1926) (SAEJ514) – PORT TOOLS – CARBIDE TIPPED

MS16142-S (SAEJ1926) (SAEJ514) O-Ring Boss – Solid Pilot



K	D	E	F	P	J	L	S	O.A.L.	TUBE	THREAD	ORDER #
12	.3605	.082	.682	.270	.430	2.00	.500	3.00	.125	.3125-24UNF-2B	MS16142-2S
12	.4235	.082	.760	.331	.470	2.00	.500	3.00	.188	.375-24UNF-2B	MS16142-3S
12	.4895	.101	.838	.385	.520	2.00	.500	3.12	.250	.4375-20UNF-2B	MS16142-4S
12	.5525	.101	.916	.448	.560	2.00	.500	3.12	.312	.500-20UNF-2B	MS16142-5S
12	.6185	.105	.979	.504	.600	2.00	.500	3.25	.375	.5625-18UNF-2B	MS16142-6S
15	.8135	.108	1.198	.685	.660	2.12	.750	3.57	.500	.750-16UNF-2B	MS16142-8S
15	.9445	.108	1.354	.801	.750	2.12	.750	3.66	.625	.875-14UNF-2B	MS16142-10S
15	1.1505	.138	1.635	.975	.800	2.12	.750	3.75	.750	1.0625-12UN-2B	MS16142-12S
15	1.2755	.138	1.775	1.101	.800	2.25	1.000	4.00	.875	1.1875-12UN-2B	MS16142-14S
15	1.4005	.138	1.920	1.225	.850	2.25	1.000	4.05	1.000	1.3125-12UN-2B	MS16142-16S
15	1.7155	.140	2.280	1.537	.900	2.25	1.000	4.20	1.250	1.625-12UN-2B	MS16142-20S
15	1.9645	.140	2.570	1.787	.900	2.25	1.000	4.20	1.500	1.875-12UN-2B	MS16142-24S
15	2.5895	.140	3.490	2.412	.950	2.50	1.250	4.60	2.000	2.500-12UN-2B	MS16142-32S

MS16142-R (SAEJ1926) (SAEJ514) O-Ring Boss – Reamer



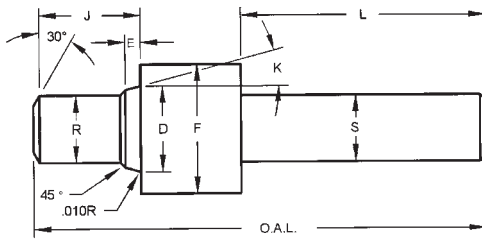
K	D	E	F	R	J	L	S	O.A.L.	TUBE	THREAD	ORDER #	COATED ORDER #
12	.3605	.082	.682	.271	.479	1.75	.500	3.00	.125	.3125-24UNF-2B	MS16142-2R	MS16142-2RC
12	.4235	.082	.760	.333	.479	1.75	.500	3.00	.188	.375-24UNF-2B	MS16142-3R	MS16142-3RC
12	.4895	.101	.838	.386	.558	1.88	.500	3.12	.250	.4375-20UNF-2B	MS16142-4R	MS16142-4RC
12	.5525	.101	.916	.449	.558	1.88	.500	3.12	.312	.500-20UNF-2B	MS16142-5R	MS16142-5RC
12	.6185	.105	.979	.506	.620	1.88	.500	3.38	.375	.5625-18UNF-2B	MS16142-6R	MS16142-6RC
15	.8135	.108	1.198	.686	.699	2.12	.750	3.70	.500	.750-16UNF-2B	MS16142-8R	MS16142-8RC
15	.9445	.108	1.354	.802	.792	2.12	.750	3.80	.625	.875-14UNF-2B	MS16142-10R	MS16142-10RC
15	1.1505	.138	1.635	.976	.917	2.12	.750	3.94	.750	1.0625-12UN-2B	MS16142-12R	MS16142-12RC
15	1.2755	.138	1.775	1.102	.917	2.25	1.000	4.21	.875	1.1875-12UN-2B	MS16142-14R	MS16142-14RC
15	1.4005	.138	1.920	1.226	.917	2.25	1.000	4.25	1.000	1.3125-12UN-2B	MS16142-16R	MS16142-16RC
15	1.7155	.140	2.280	1.538	.917	2.25	1.000	4.35	1.250	1.625-12UN-2B	MS16142-20R	MS16142-20RC
15	1.9645	.140	2.570	1.788	.917	2.25	1.000	4.35	1.500	1.875-12UN-2B	MS16142-24R	MS16142-24RC
15	2.5895	.140	3.490	2.413	.917	2.50	1.250	5.15	2.000	2.500-12UN-2B	MS16142-32R	MS16142-32RC

MS21921 - MS21922 - MS20819 - BACD2036 - BACU24AB & AN818 — Port Tools Also Available.

SCSMC Super Compressed Sub-Micron Carbide

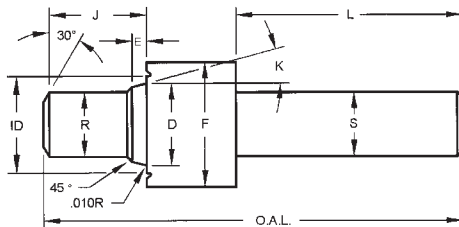
ISO 6149-1:1993(E) – PORT TOOLS – CARBIDE TIPPED

ISO 6149-1:1993(E)



K (deg)	D (mm)	E (mm)	F (mm)	R (mm)	J (mm)	L (inch)	S (inch)	O.A.L. (inch)	THREAD	ORDER #
12	9.15	1.8	14.1	7.0	11.6	1.75	.500	3.00	M8X1	6149-M8X1
12	11.15	1.8	16.1	9.0	11.6	1.75	.500	3.00	M10X1	6149-M10X1
15	13.85	2.6	19.1	10.5	14.1	1.88	.500	3.12	M12X1.5	6149-M12X1.5
15	15.85	2.6	21.1	12.5	14.1	1.88	.500	3.38	M14X1.5	6149-M14X1.5
15	17.85	2.6	24.1	14.5	15.6	1.88	.500	3.38	M16X1.5	6149-M16X1.5
15	19.85	2.6	26.1	16.5	17.1	2.12	.750	3.70	M18X1.5	6149-M18X1.5
15	21.85	2.6	27.1	18.5	17.5	2.12	.750	3.75	M20X1.5	6149-M20X1.5
15	23.85	2.6	29.1	20.5	18.1	2.12	.750	3.80	M22X1.5	6149-M22X1.5
15	29.45	3.3	34.1	25.0	22.1	2.12	.750	3.94	M27X2.0	6149-M27X2.0
15	35.45	3.3	43.1	31.0	22.1	2.25	1.000	4.25	M33X2.0	6149-M33X2.0
15	44.45	3.3	52.1	40.0	22.6	2.25	1.000	4.35	M42X2.0	6149-M42X2.0
15	50.45	3.3	57.1	46.0	25.1	2.25	1.000	4.35	M48X2.0	6149-M48X2.0

ISO 6149-1:1993(E) with I.D. notch



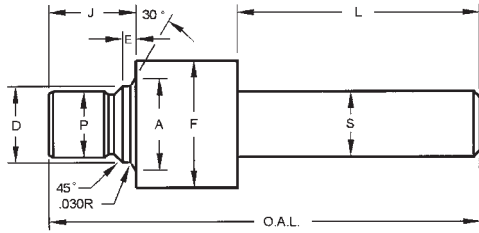
K (deg)	D (mm)	E (mm)	F (mm)	ID (mm)	R (mm)	J (mm)	L (inch)	S (inch)	O.A.L. (inch)	THREAD	ORDER #
12	9.15	1.8	17.1	14.2	7.0	11.6	1.75	.500	3.00	M8X1	6149-M8X1-ID
12	11.15	1.8	20.1	16.2	9.0	11.6	1.75	.500	3.00	M10X1	6149-M10X1-ID
15	13.85	2.6	23.1	19.2	10.5	14.1	1.88	.500	3.12	M12X1.5	6149-M12X1.5-ID
15	15.85	2.6	25.1	21.2	12.5	14.1	1.88	.500	3.38	M14X1.5	6149-M14X1.5-ID
15	17.85	2.6	28.1	24.2	14.5	15.6	1.88	.500	3.38	M16X1.5	6149-M16X1.5-ID
15	19.85	2.6	30.1	26.2	16.5	17.1	2.12	.750	3.70	M18X1.5	6149-M18X1.5-ID
15	21.85	2.6	32.1	27.2	18.5	17.5	2.12	.750	3.75	M20X1.5	6149-M20X1.5-ID
15	23.85	2.6	34.1	29.2	20.5	18.1	2.12	.750	3.80	M22X1.5	6149-M22X1.5-ID
15	29.45	3.3	40.1	34.2	25.0	22.1	2.12	.750	3.94	M27X2.0	6149-M27X2.1-ID
15	35.45	3.3	49.1	43.2	31.0	22.1	2.25	1.000	4.25	M33X2.0	6149-M33X2.1-ID
15	44.45	3.3	60.1	52.2	40.0	22.6	2.25	1.000	4.35	M42X2.0	6149-M42X2.1-ID
15	50.45	3.3	66.1	57.2	46.0	25.1	2.25	1.000	4.35	M48X2.0	6149-M48X2.1-ID

MS21921 - MS21922 - MS20819 - BACD2036 - BACU24AB & AN818 — Port Tools Also Available.

SCSMC For Longer Tool Life

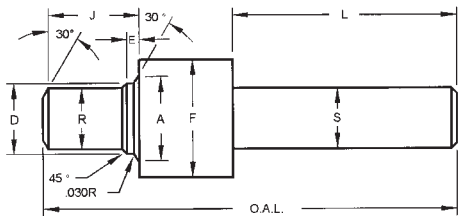
MS33649 – PORT TOOLS – CARBIDE TIPPED

MS33649-S – Solid Pilot



A	D	E	F	J	L	P	S	O.A.L.	TUBE	THREAD	ORDER #
.367	.2665	.071	.575	.390	2.00	.217	.500	3.00	—	.250-28UNJF-3B	MS33649-1S
.446	.3305	.071	.742	.430	2.00	.274	.500	3.00	.125	.3125-24UNJF-3B	MS33649-2S
.508	.3925	.071	.805	.470	2.00	.337	.500	3.00	.188	.375-24UNJF-3B	MS33649-4S
.570	.4565	.083	.888	.520	2.00	.392	.500	3.12	.250	.4375-20UNJF-3B	MS33649-4S
.633	.5195	.083	.950	.560	2.00	.454	.500	3.12	.312	.500-20UNJF-3B	MS33649-5S
.696	.5825	.091	1.012	.600	2.00	.511	.500	3.25	.375	.5625-18UNJF-3B	MS33649-6S
.758	.6455	.102	1.105	.600	2.00	.574	.500	3.25	.438	.625-18UNJF-3B	MS33649-7S
.883	.7715	.102	1.240	.660	2.12	.692	.750	3.57	.500	.750-16UNJF-3B	MS33649-8S
.946	.8345	.115	1.300	.700	2.12	.755	.750	3.61	.562	.8125-16UNJ-3B	MS33649-9S
1.008	.8985	.115	1.415	.750	2.12	.809	.750	3.66	.625	.875-14UNJF-3B	MS33649-10S
1.164	1.0255	.133	1.602	.800	2.12	.923	.750	3.75	.688	1.000-12UNJF-3B	MS33649-11S
1.242	1.0885	.133	1.665	.800	2.12	.983	.750	3.80	.750	1.0625-12UNJ-3B	MS33649-12S
1.370	1.2135	.133	1.790	.800	2.25	1.110	1.000	4.00	.875	1.1875-12UNJ-3B	MS33649-14S
1.495	1.3385	.133	1.965	.850	2.25	1.233	1.000	4.05	1.000	1.3125-12UNJ-3B	MS33649-16S
1.808	1.6505	.133	2.310	.900	2.25	1.547	1.000	4.20	1.250	1.625-12UNJ-3B	MS33649-20S
2.058	1.9005	.133	2.628	.900	2.25	1.797	1.000	4.20	1.500	1.875-12UNJ-3B	MS33649-24S
2.433	2.2755	.133	3.050	.950	2.50	2.172	1.250	4.50	1.750	2.250-12UNJ-3B	MS33649-28S
2.683	2.5265	.133	3.520	.950	2.50	2.422	1.250	4.60	2.000	2.500-12UNJ-3B	MS33649-32S

MS33649-R – Reamer Pilot

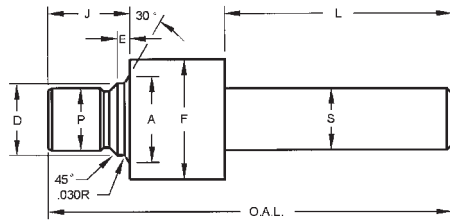


A	D	E	F	J	L	R	S	O.A.L.	TUBE	THREAD	ORDER #
.367	.2665	.071	.575	.425	1.75	.219	.500	3.00	—	.250-28UNJF-3B	MS33649-1R
.446	.3305	.071	.742	.610	1.75	.276	.500	3.00	.125	.3125-24UNJF-3B	MS33649-2R
.508	.3925	.071	.805	.610	1.75	.339	.500	3.00	.188	.375-24UNJF-3B	MS33649-3R
.570	.4565	.083	.888	.675	1.88	.393	.500	3.12	.250	.4375-20UNJF-3B	MS33649-4R
.633	.5195	.083	.950	.675	1.88	.455	.500	3.12	.312	.500-20UNJF-3B	MS33649-5R
.696	.5825	.091	1.012	.730	1.88	.513	.500	3.38	.375	.5625-18UNJF-3B	MS33649-6R
.758	.6455	.102	1.105	.745	1.88	.575	.500	3.38	.438	.625-18UNJF-3B	MS33649-7R
.883	.7715	.102	1.240	.855	2.12	.693	.750	3.84	.500	.750-16UNJF-3B	MS33649-8R
.946	.8345	.115	1.300	.875	2.12	.758	.750	3.84	.562	.8125-16UNJ-3B	MS33649-9R
1.008	.8985	.115	1.415	.950	2.12	.810	.750	3.94	.625	.875-14UNJF-3B	MS33649-10R
1.164	1.0255	.133	1.500	1.080	2.12	.925	.750	4.12	.688	1.000-12UNJF-3B	MS33649-11R
1.242	1.0885	.133	1.665	1.080	2.12	.985	.750	4.12	.750	1.0625-12UNJ-3B	MS33649-12R
1.370	1.2135	.133	1.790	1.080	2.25	1.112	1.000	4.37	.875	1.1875-12UNJ-3B	MS33649-14R
1.495	1.3385	.133	1.965	1.080	2.25	1.235	1.000	4.37	1.000	1.3125-12UNJ-3B	MS33649-16R
1.683	1.5265	.133	2.090	1.130	2.25	1.425	1.000	4.53	1.125	1.500-12UNJF-3B	MS33649-18R
1.808	1.6505	.133	2.310	1.130	2.25	1.549	1.000	4.54	1.250	1.625-12UNJ-3B	MS33649-20R
2.058	1.9005	.133	2.628	1.140	2.25	1.799	1.000	4.54	1.500	1.875-12UNJ-3B	MS33649-24R
2.433	2.2755	.133	3.050	1.270	2.50	2.174	1.250	4.92	1.750	2.250-12UNJ-3B	MS33649-28R
2.683	2.5265	.133	3.520	1.400	2.50	2.424	1.250	5.15	2.000	2.500-12UNJ-3B	MS33649-32R

SCSMC Super Compressed Sub-Micron Carbide

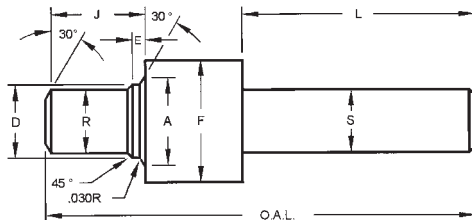
AND10050 – PORT TOOLS – CARBIDE TIPPED

AND10050-S – Solid Pilot



A	D	E	F	J	L	P	S	O.A.L.	TUBE	THREAD	ORDER #
.446	.3305	.071	.742	.430	2.00	.270	.500	3.00	.125	.3125-24UNF-3B	AND10050-2S
.508	.3925	.071	.805	.470	2.00	.331	.500	3.00	.188	.375-24UNF-3B	AND10050-3S
.570	.4565	.083	.888	.520	2.00	.385	.500	3.12	.250	.4375-20UNF-3B	AND10050-4S
.633	.5195	.083	.950	.560	2.00	.448	.500	3.12	.312	.500-20UNF-3B	AND10050-5S
.696	.5825	.091	1.012	.600	2.00	.504	.500	3.25	.375	.5625-18UNF-3B	AND10050-6S
.883	.7715	.102	1.240	.660	2.12	.685	.750	3.57	.500	.750-16UNF-3B	AND10050-8S
1.008	.8985	.115	1.415	.750	2.12	.801	.750	3.66	.625	.875-14UNF-3B	AND10050-10S
1.242	1.0885	.133	1.665	.800	2.12	.975	.750	3.75	.750	1.0625-12UN-3B	AND10050-12S
1.495	1.3385	.133	1.965	.850	2.25	1.225	1.000	4.05	1.000	1.3125-12UN-3B	AND10050-16S
1.808	1.6505	.133	2.310	.900	2.25	1.537	1.000	4.20	1.250	1.625-12UN-3B	AND10050-20S
2.058	1.9005	.133	2.628	.900	2.25	1.787	1.000	4.20	1.500	1.875-12UN-3B	AND10050-24S
2.433	2.2755	.133	3.050	.950	2.50	2.162	1.250	4.50	1.750	2.250-12UN-3B	AND10050-28S
2.683	2.5265	.133	3.520	.950	2.50	2.412	1.250	4.60	2.000	2.500-12UN-3B	AND10050-32S

AND10050-R – Reamer Pilot



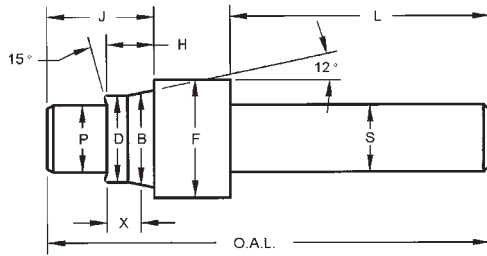
A	D	E	F	J	L	R	S	O.A.L.	TUBE	THREAD	ORDER #
.446	.3305	.071	.742	.515	1.75	.271	.500	3.00	.125	.3125-24UNF-3B	AND10050-2R
.508	.3925	.071	.805	.515	1.75	.333	.500	3.00	.188	.375-24UNF-3B	AND10050-3R
.570	.4565	.083	.888	.610	1.88	.386	.500	3.12	.250	.4375-20UNF-3B	AND10050-4R
.633	.5195	.083	.950	.610	1.88	.449	.500	3.12	.312	.500-20UNF-3B	AND10050-5R
.696	.5825	.091	1.012	.630	1.88	.506	.500	3.38	.375	.5625-18UNF-3B	AND10050-6R
.883	.7715	.102	1.240	.735	2.12	.686	.750	3.70	.500	.750-16UNF-3B	AND10050-8R
1.008	.8985	.115	1.415	.805	2.12	.802	.750	3.80	.625	.875-14UNF-3B	AND10050-10R
1.242	1.0885	.133	1.665	.925	2.12	.976	.750	3.94	.750	1.0625-12UN-3B	AND10050-12R
1.495	1.3385	.133	1.965	.955	2.25	1.226	1.000	4.25	1.000	1.3125-12UN-3B	AND10050-16R
1.808	1.6505	.133	2.310	1.000	2.25	1.538	1.000	4.35	1.250	1.625-12UN-3B	AND10050-20R
2.058	1.9005	.133	2.628	1.140	2.25	1.788	1.000	4.54	1.500	1.875-12UN-3B	AND10050-24R
2.433	2.2755	.133	3.050	1.260	2.50	2.163	1.250	4.92	1.750	2.250-12UN-3B	AND10050-28R
2.683	2.5265	.133	3.520	1.390	2.50	2.413	1.250	5.15	2.000	2.500-12UN-3B	AND10050-32R

MS21921 - MS21922 - MS20819 - BACD2036 - BACU24AB & AN818 — Port Tools Also Available.

SCSMC For Greater Performance

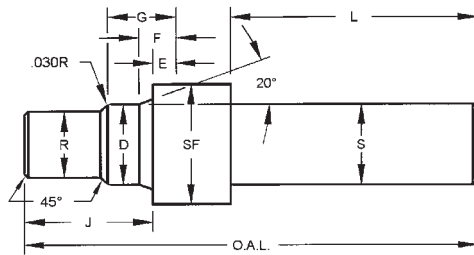
MS33514 – PORT TOOLS – CARBIDE TIPPED

MS33514 – Carbide Tipped



B	D	F	H	J	L	P	S	X	O.A.L.	TUBE	THREAD	ORDER #
.163	.137	.300	.188	.380	1.88	.091	.500	.128	3.00	.125	.3125-24UNJF-3A	MS33514-2CT
.234	.198	.400	.234	.440	1.88	.123	.500	.158	3.00	.188	.375-24UNJF-3A	MS33514-3CT
.293	.263	.410	.234	.440	1.88	.185	.500	.174	3.00	.250	.4375-20UNJF-3A	MS33514-4CT
.356	.326	.470	.250	.480	1.88	.232	.500	.190	3.00	.312	.500-20UNJF-3A	MS33514-5CT
.416	.388	.530	.250	.480	1.88	.295	.500	.193	3.00	.375	.5625-18UNJF-3A	MS33514-6CT
.560	.516	.690	.305	.640	1.88	.420	.500	.210	3.00	.500	.750-16UNJF-3A	MS33514-8CT
.686	.643	.830	.350	.740	1.88	.498	.500	.255	3.15	.625	.875-14UNJF-3A	MS33514-10CT
.810	.768	1.000	.350	.790	1.88	.654	.500	.253	3.23	.750	1.0625-12UNJ-3A	MS33514-12CT
1.062	1.018	1.250	.415	.940	2.00	.873	.750	.322	3.50	1.000	1.3125-12UNJ-3A	MS33514-16CT
1.316	1.272	1.560	.415	.950	2.00	1.091	.750	.325	3.62	1.250	1.625-12UNJ-3A	MS33514-20CT
1.565	1.522	1.800	.485	.950	2.12	1.342	1.000	.390	3.82	1.500	1.875-12UNJ-3A	MS33514-24CT
2.068	2.024	2.400	.485	1.060	2.12	1.811	1.000	.395	4.09	2.000	2.500-12UNJ-3A	MS33514-32CT

(SAE) AS1300 for Rosan Cavity PS-10035



D	E	F	G	J	L	R	S	SF	O.A.L.	TUBE	THREAD	ORDER #
.255	.093	.1555	.2985	.610	2.00	.184	.375	.382	4.00	.125	.2160-28UNJF	RPT-2
.287	.093	.1555	.2985	.670	2.00	.218	.375	.449	4.00	.188	.2500-28UNJF	RPT-3
.340	.093	.1555	.2985	.700	2.00	.275	.500	.496	4.00	.250	.3125-24UNJF	RPT-4
.402	.093	.1555	.2985	.725	2.00	.337	.500	.602	3.48	.312	.3750-24UNJF	RPT-5
.465	.108	.1705	.3135	.785	2.00	.392	.500	.676	3.53	.375	.4375-20UNJF	RPT-6
.583	.108	.1705	.3135	.850	2.00	.511	.500	.785	3.85	.500	.5625-18UNJF	RPT-8
.726	.108	.1705	.3135	.810	2.00	.650	.500	1.016	3.81	.625	.6875-24UNJEF	RPT-10
.900	.108	.1705	.3455	.950	2.00	.767	.500	1.140	4.20	.750	.8125-20UNJEF	RPT-12
1.163	.108	.1705	.3455	1.015	2.00	1.073	.750	1.428	4.26	1.000	1.125-18UNJEF	RPT-16
1.388	.135	.1975	.3775	1.020	2.00	1.261	.750	1.751	4.52	1.250	1.312-18UNJEF	RPT-20

MS21921 - MS21922 - MS20819 - BACD2036 - BACU24AB & AN818 — Port Tools Also Available.

SCSMC Super Compressed Sub-Micron Carbide