

ORFS Tube Fittings

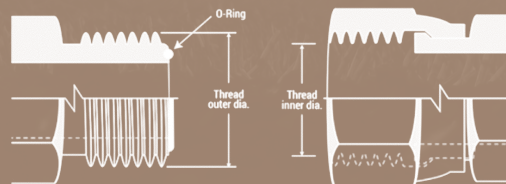
Part. 03

| Specifications

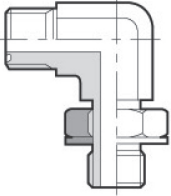
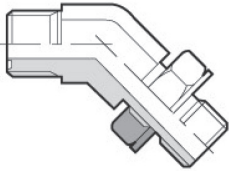
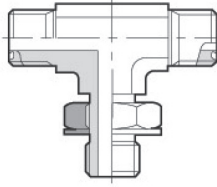
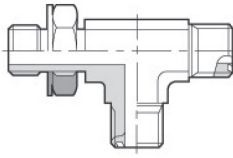
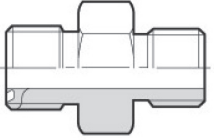
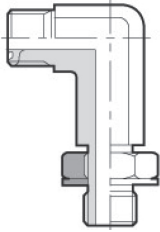
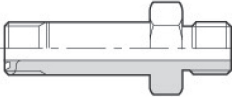
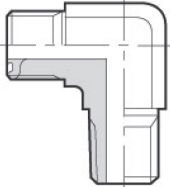
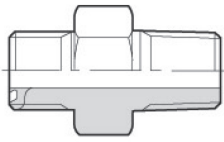
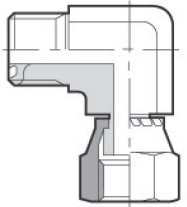
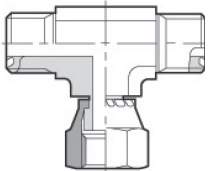
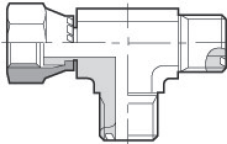
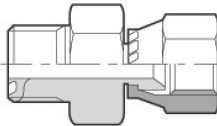
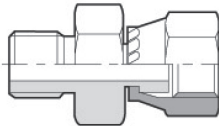
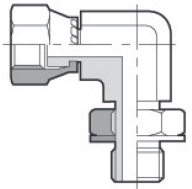
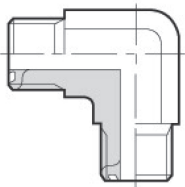
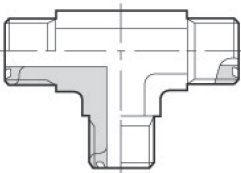
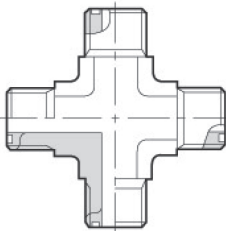
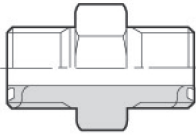
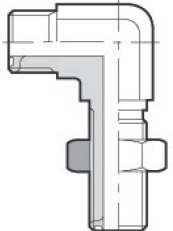
Designed for higher pressure fluid power applications, these O-Ring Face Seal (ORFS) Hydraulic Fittings meet or exceed SAE J1453 and ISO 8434-3 standards. The ORFS style fitting provides a connection between steel tubing, and SAE J1926 / ISO 11926-10-Ring Ports.

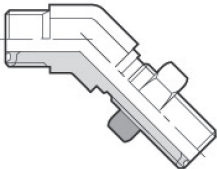
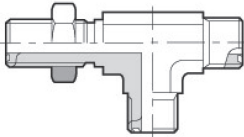
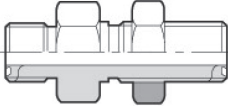
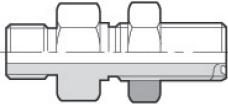
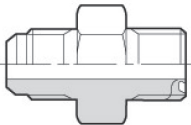
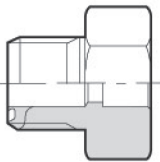
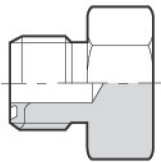
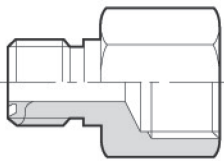
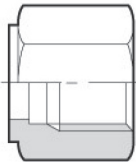
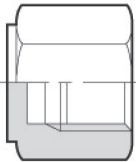

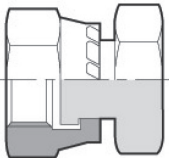
| Features

- Size Range: 9/16" to 2"
- Design Standard: SAE J1453/ISO 8434-3
- Material: Steel/Stainless/Brass



ORFS Tube Fittings Index

<p>ProtecOW-90 • P.52</p> 	<p>ProtecOW-45 • P.53</p> 	<p>ProtecOW-TC • P.54</p> 	<p>ProtecOW-TR • P.54</p> 	<p>ProtecOB • P.55</p> 
<p>ProtecOW-9L • P.56</p> 	<p>ProtecOB-OL • P.56</p> 	<p>ProtecON-90 • P.57</p> 	<p>ProtecON • P.58</p> 	<p>ProtecOV-90 • P.59</p> 
<p>ProtecOV-TC • P.59</p> 	<p>ProtecOV-TR • P.60</p> 	<p>ProtecOV • P.60</p> 	<p>ProtecBVO • P.61</p> 	<p>ProtecVW-90 • P.61</p> 
<p>ProtecOO-90 • P.62</p> 	<p>ProtecOO-T3 • P.62</p> 	<p>ProtecOO-C4 • P.63</p> 	<p>ProtecOO • P.63</p> 	<p>ProtecOH-90 • P.64</p> 

<p>ProtecOH-45 • P.64</p>	<p>ProtecOH-TR • P.65</p>	<p>ProtecOH • P.65</p>	<p>ProtecBH • P.66</p>	<p>ProtecSO • P.66</p>
				
<p>ProtecOD • P.67</p>	<p>ProtecOP • P.67</p>	<p>ProtecOVN • P.68</p>	<p>ProtecONU • P.68</p>	<p>ProtecOCA • P.69</p>
				
<p>ProtecOLN • P.69</p>	<p>ProtecUV • P.70</p>			
				

ProtecOW-90

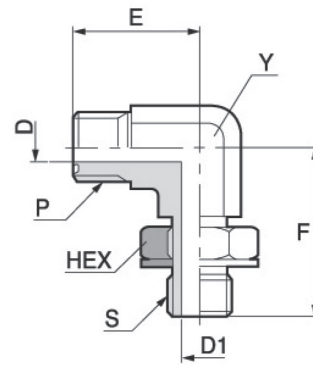
ORFS tube end / Straight thread O-ring

SAE 520220

Part Number Information

only with O-rings

All dimensions are in inches



PART NO	P (UNF/UN)	S (UNF/UN)	E	F	D	D1	HEX	Y
ProtecOW-90-04-04	9/16-18	7/16-20	0.85	1.29	0.172	0.172	5/8	9/16
ProtecOW-90-04-06	9/16-18	9/16-18	0.93	1.45	0.172	0.264	3/4	9/16
ProtecOW-90-06-04	11/16-16	7/16-20	0.98	1.37	0.264	0.172	5/8	3/4
ProtecOW-90-06-06	11/16-16	9/16-18	0.98	1.45	0.264	0.264	3/4	3/4
ProtecOW-90-06-08	11/16-16	3/4-16	1.04	1.6	0.264	0.378	15/16	3/4
ProtecOW-90-06-10	11/16-16	7/8-14	1.15	1.97	0.264	0.484	1 1/16	7/8
ProtecOW-90-08-06	13/16-16	9/16-18	1.1	1.44	0.378	0.264	3/4	3/4
ProtecOW-90-08-08	13/16-16	3/4-16	1.1	1.6	0.378	0.378	15/16	3/4
ProtecOW-90-08-10	13/16-16	7/8-14	1.23	1.97	0.378	0.484	1 1/16	7/8
ProtecOW-90-08-12	13/16-16	1 1/16-12	1.32	2.17	0.378	0.609	1 3/8	1 3/16
ProtecOW-90-10-08	1-14	3/4-16	1.31	1.8	0.484	0.378	15/16	1 1/16
ProtecOW-90-10-10	1-14	7/8-14	1.31	1.97	0.484	0.484	1 1/16	1 1/16
ProtecOW-90-10-12	1-14	1 1/16-12	1.41	2.17	0.484	0.609	1 3/8	1 3/16
ProtecOW-90-12-08	1 3/16-12	3/4-16	1.47	1.84	0.609	0.378	3/4	1 3/16
ProtecOW-90-12-10	1 3/16-12	7/8-14	1.47	2.03	0.609	0.484	1 1/16	1 3/16
ProtecOW-90-12-12	1 3/16-12	1 1/16-12	1.47	2.17	0.609	0.609	1 3/8	1 3/16
ProtecOW-90-12-16	1 3/16-12	1 5/16-12	1.62	2.35	0.609	0.812	1 5/8	1 7/16
ProtecOW-90-16-16	1 7/16-12	1 5/16-12	1.64	2.35	0.812	0.812	1 5/8	1 7/16
ProtecOW-90-16-20	1 7/16-12	1 5/8-12	1.76	2.45	0.812	1.024	1 7/8	1 5/8
ProtecOW-90-20-20	1 11/16-12	1 5/8-12	1.76	2.45	1.024	1.024	1 7/8	1 5/8
ProtecOW-90-24-24	2-12	1 7/8-12	1.92	2.59	1.26	1.26	2 1/8	1 7/8

ProtecOW-45

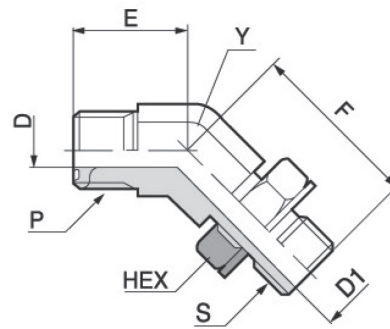
ORFS tube end / Straight thread O-ring

SAE 520320

Part Number Information

Body with O-rings

All dimensions are in inches



PART NO	P (UNF/UN)	S (UNF/UN)	E	F	D	D1	HEX	Y
ProtecOW-45-04-04	9/16-18	7/16-20	0.63	1.18	0.172	0.172	5/8	9/16
ProtecOW-45-04-06	9/16-18	9/16-18	0.69	1.3	0.172	0.264	3/4	3/4
ProtecOW-45-06-04	11/16-16	7/16-20	0.74	1.22	0.264	0.172	5/8	3/4
ProtecOW-45-06-06	11/16-16	9/16-18	0.74	1.3	0.264	0.264	3/4	3/4
ProtecOW-45-06-08	11/16-16	3/4-16	0.74	1.45	0.264	0.378	15/16	3/4
ProtecOW-45-08-06	13/16-16	9/16-18	0.8	1.27	0.378	0.264	3/4	3/4
ProtecOW-45-08-08	13/16-16	3/4-16	0.8	1.43	0.378	0.378	15/16	3/4
ProtecOW-45-08-10	13/16-16	7/8-14	0.84	1.76	0.378	0.484	1 1/16	3/4
ProtecOW-45-10-08	1-14	3/4-16	0.92	1.59	0.484	0.378	15/16	1 1/16
ProtecOW-45-10-10	1-14	7/8-14	0.92	1.76	0.484	0.484	1 1/16	1 1/16
ProtecOW-45-10-12	1-14	1 1/16-12	0.98	1.97	0.484	0.609	1 3/8	1 3/16
ProtecOW-45-12-10	1 3/16-12	7/8-14	1.02	1.81	0.609	0.484	1 1/16	1 3/16
ProtecOW-45-12-12	1 3/16-12	1 1/16-12	1.02	1.97	0.609	0.609	1 3/8	1 3/16
ProtecOW-45-12-16	1 3/16-12	1 5/16-12	1.02	2.06	0.609	0.812	1 5/8	1 7/16
ProtecOW-45-16-16	1 7/16-12	1 5/16-12	1.18	2.06	0.812	0.812	1 5/8	1 7/16
ProtecOW-45-16-20	1 7/16-12	1 5/8-12	1.26	2.25	0.812	1.024	1 7/8	1 5/8
ProtecOW-45-20-20	1 11/16-12	1 5/8-12	1.26	2.11	1.024	1.024	1 7/8	1 5/8
ProtecOW-45-24-24	2-12	1 7/8-12	1.45	2.11	1.26	1.26	2 1/8	1 7/8

ProtecOW-TC

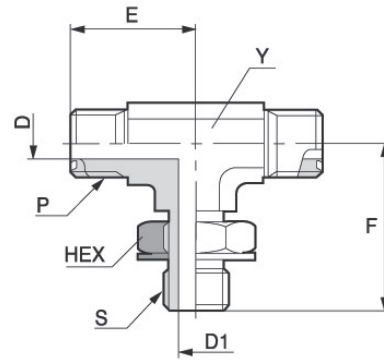
ORFS tube ends / Straight thread O-ring

SAE 520429

Part Number Information

Body with O-rings

All dimensions are in inches



PART NO	P (UNF/UN)	S (UNF/UN)	E	F	D	D1	HEX	Y
ProtecOW-TC-04-04-04	9/16-18	7/16-20	0.85	1.29	0.172	0.172	5/8	9/16
ProtecOW-TC-06-06-06	11/16-16	9/16-18	0.98	1.45	0.264	0.264	3/4	3/4
ProtecOW-TC-08-08-08	13/16-16	3/4-16	1.1	1.6	0.378	0.378	15/16	3/4
ProtecOW-TC-10-10-10	1-14	7/8-14	1.31	1.97	0.484	0.484	1 1/16	1 1/16
ProtecOW-TC-12-12-12	1 3/16-12	1 1/16-12	1.47	2.17	0.609	0.609	1 3/8	1 3/16
ProtecOW-TC-16-16-16	1 7/16-12	1 5/16-12	1.64	2.35	0.812	0.812	1 5/8	1 7/16
ProtecOW-TC-20-20-20	1 11/16-12	1 5/8-12	1.76	2.45	1.024	1.024	1 7/8	1 5/8
ProtecOW-TC-24-24-24	2-12	1 7/8-12	1.92	2.59	1.26	1.26	2 1/8	1 7/8

ProtecOW-TR

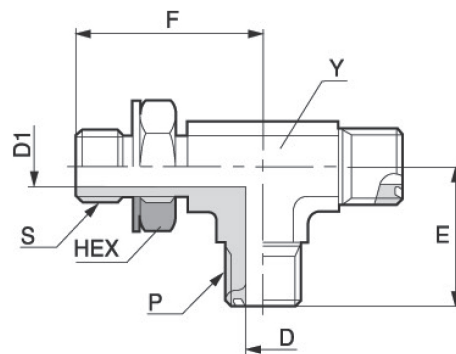
ORFS tube ends / Straight thread O-ring

SAE 520428

Part Number Information

Body with O-rings

All dimensions are in inches



PART NO	P (UNF/UN)	S (UNF/UN)	E	F	D	D1	HEX	Y
ProtecOW-TR-04-04-04	9/16-18	7/16-20	0.85	1.29	0.172	0.172	5/8	9/16
ProtecOW-TR-06-06-06	11/16-16	9/16-18	0.98	1.45	0.264	0.264	3/4	3/4
ProtecOW-TR-08-08-08	13/16-16	3/4-16	1.1	1.6	0.378	0.378	15/16	3/4
ProtecOW-TR-10-10-10	1-14	7/8-14	1.31	1.97	0.484	0.484	1 1/16	1 1/16
ProtecOW-TR-12-12-12	1 3/16-12	1 1/16-12	1.47	2.17	0.609	0.609	1 3/8	1 3/16
ProtecOW-TR-16-16-16	1 7/16-12	1 5/16-12	1.64	2.35	0.812	0.812	1 5/8	1 7/16
ProtecOW-TR-20-20-20	1 11/16-12	1 5/8-12	1.76	2.45	1.024	1.024	1 7/8	1 5/8
ProtecOW-TR-24-24-24	2-12	1 7/8-12	1.92	2.59	1.26	1.26	2 1/8	1 7/8

ProtecOB

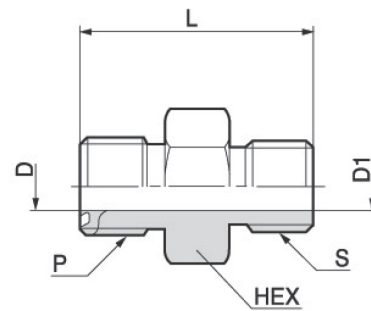
ORFS tube end / Straight thread O-ring

SAE 520120

Part Number Information

Body with O-rings

All dimensions are in inches



PART NO	P (UNF/UN)	S (UNF/UN)	HEX	L	D	D1
ProtecOB-04-04	9/16-18	7/16-20	5/8	1.13	0.172	0.172
ProtecOB-04-06	9/16-18	9/16-18	3/4	1.20	0.172	0.264
ProtecOB-06-04	11 /16-16	7/16-20	3/4	1.37	0.264	0.172
ProtecOB-06-06	11 /16-16	9/16-18	3/4	1.26	0.264	0.264
ProtecOB-06-08	11 /16-16	3/4-16	7/8	1.38	0.264	0.264
ProtecOB-06-10	11 /16-16	7/8-14	1	1.53	0.264	0.484
ProtecOB-08-06	13/16-16	9/16-18	7/8	1.52	0.378	0.264
ProtecOB-08-08	13/16-16	3/4-16	7/8	1.44	0.378	0.378
ProtecOB-08-10	13/16-16	7/8-14	1	1.59	0.378	0.484
ProtecOB-08-12	13/16-16	1 1/16-12	1 1/4	1.75	0.378	0.609
ProtecOB-10-08	1-14	3/4-16	1 1/16	1.78	0.484	0.378
ProtecOB-10-10	1-14	7/8-14	1 1/16	1.70	0.484	0.484
ProtecOB-10-12	1-14	1 1/16-12	1 1/4	1.85	0.484	0.484
ProtecOB-12-08	1 3/16-12	3/4-16	1 1/4	1.91	0.609	0.378
ProtecOB-12-10	1 3/16-12	7/8-14	1 1/4	1.99	0.609	0.484
ProtecOB-12-12	1 3/16-12	1 1/16-12	1 1/4	1.91	0.609	0.609
ProtecOB-12-16	1 3/16-12	1 5/16-12	1 1/2	1.96	0.609	0.609
ProtecOB-16-16	1 7/16-12	1 5/16-12	1 1/2	1.98	0.812	0.812
ProtecOB-16-20	1 7/16-12	1 5/8-12	1 7/8	2.06	0.812	1.024
ProtecOB-20-20	1 11/16-12	1 5/8-12	1 7/8	2.06	1.024	1.024
ProtecOB-24-24	2-12	1 7/8-12	2 1/8	2.13	1.260	1.260

ProtecOW-9L

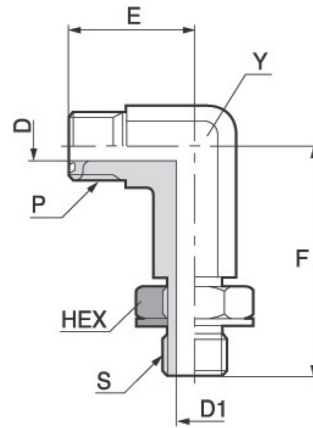
ORFS tube end / Straight thread O-ring

SAE 520520

Part Number Information

Body with O-rings

All dimensions are in inches



PART NO	P (UNF/UN)	S (UNF/UN)	E	F	D	D1	HEX	Y
ProtecOW-9L-04-04	9/16-18	7/16-20	0.85	2.23	0.172	0.172	5/8	9/16
ProtecOW-9L-06-06	11/16-16	9/16-18	0.98	2.61	0.264	0.264	3/4	3/4
ProtecOW-9L-08-08	13/16-16	3/4-16	1.1	2.95	0.378	0.378	15/16	3/4
ProtecOW-9L-10-10	1-14	7/8-14	1.31	3.51	0.484	0.484	1 1/16	1 1/16
ProtecOW-9L-12-12	1 3/16-12	1 1/16-12	1.47	3.97	0.609	0.609	1 3/8	1 3/16
ProtecOW-9L-16-16	1 7/16-12	1 5/16-12	1.64	4.51	0.812	0.812	1 5/8	1 7/16

ProtecOB-OL

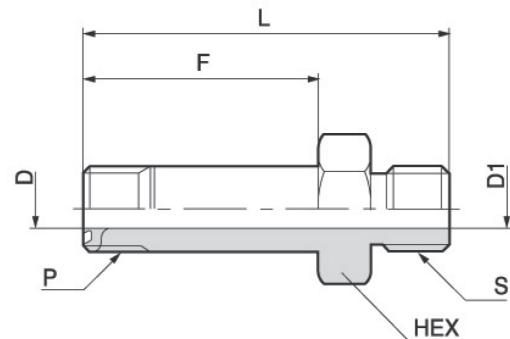
ORFS tube end / Straight thread O-ring

SAE 520122

Part Number Information

OL Body with O-rings

All dimensions are in inches

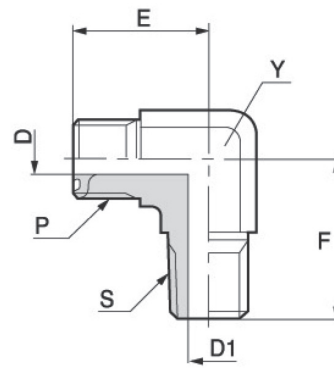


PART NO	P (UNF/UN)	S (UNF/UN)	HEX	L	F	D	D1
ProtecOB-OL-04-04	9/16-18	7/16-20	5/8	2.07	1.33	0.172	0.172
ProtecOB-OL-06-06	11/16-16	9/16-18	3/4	2.27	1.45	0.264	0.264
ProtecOB-OL-08-08	13/16-16	3/4-16	7/8	2.68	1.74	0.378	0.378
ProtecOB-OL-10-10	1-14	7/8-14	1 1/16	3.13	2.04	0.484	0.484
ProtecOB-OL-12-12	1 3/16-12	1 1/16-12	1 5/16	3.76	2.05	0.609	0.609
ProtecOB-OL-16-16	1 7/16-12	1 5/16-12	1 5/8	4.14	2.85	0.812	0.812
ProtecOB-OL-20-20	1 11/16-12	1 5/8-12	1 7/8	4.76	3.39	1.024	1.024

ProtecON-90

ORFS tube end / Male pipe end

Part Number Information
 Body with O-rings
 All dimensions are in inches



PART NO	P (UNF/UN)	S (PT/NPT)	E	F	D	D1	Y
ProtecON-90-04-02	9/16-18	1/8-27	0.85	0.8	0.172	0.188	9/16
ProtecON-90-04-04	9/16-18	1/4-18	0.85	1.12	0.172	0.281	9/16
ProtecON-90-04-06	9/16-18	3/8-18	0.97	1.22	0.172	0.406	3/4
ProtecON-90-06-06	11/16-16	3/8-18	0.98	1.22	0.264	0.406	3/4
ProtecON-90-06-08	11/16-16	1/2-14	1.15	1.47	0.264	0.531	7/8
ProtecON-90-08-06	13/16-16	3/8-18	1.10	1.22	0.378	0.406	3/4
ProtecON-90-08-08	13/16-16	1/2-14	1.10	1.47	0.378	0.531	7/8
ProtecON-90-10-08	1-14	1/2-14	1.31	1.47	0.484	0.531	1 1/16
ProtecON-90-10-12	1-14	3/4-14	1.41	1.59	0.484	0.719	1 3/16
ProtecON-90-12-12	1 3/16-12	3/4-14	1.47	1.59	0.609	0.719	1 3/16
ProtecON-90-12-16	1 3/16-12	1-11 1/2	1.62	1.97	0.609	0.938	1 5/16
ProtecON-90-16-12	1 7/16-12	3/4-14	1.64	1.78	0.812	0.719	1 7/16
ProtecON-90-16-16	1 7/16-12	1-11 1/2	1.64	1.97	0.812	0.938	1 7/16
ProtecON-90-20-20	1 11/16-12	1 1/4-11 1/2	1.76	2.38	1.024	1.25	1 5/8
ProtecON-90-24-24	2-12	1 1/2-11 1/2	1.92	2.64	1.26	1.5	1 7/8

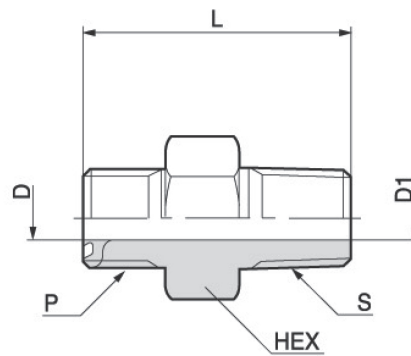
ProtecON

ORFS tube end/ Male pipe end

Part Number Information

Body with O-rings

All dimensions are in inches



PART NO	P (UNF/UN)	S (NFTP)	HEX	L	D	D1
ProtecON-04-02	9/16-18	1/8-27	5/8	1.07	0.172	0.188
ProtecON-04-04	9/16-18	1/4-18	5/8	1.26	0.172	0.281
ProtecON-04-06	9/16-18	3/8-18	3/4	1.32	0.172	0.172
ProtecON-06-06	11/16-16	3/8-18	3/4	1.34	0.264	0.406
ProtecON-06-08	11/16-16	1/2-14	7/8	1.55	0.264	0.531
ProtecON-08-06	13/16-16	3/8-18	7/8	1.48	0.378	0.406
ProtecON-08-08	13/16-16	1/2-14	7/8	1.64	0.378	0.531
ProtecON-10-08	1-14	1/2-14	1 1/16	1.82	0.484	0.531
ProtecON-10-12	1-14	3/4-14	1 1/8	1.82	0.484	0.719
ProtecON-12-12	1 3/16-12	3/4-14	1 1/4	1.93	0.609	0.719
ProtecON-12-16	1 3/16-12	1-11 1/2	1 3/8	2.13	0.609	0.938
ProtecON-16-12	1 7/16-12	3/4-14	1 1/2	2	0.812	0.719
ProtecON-16-16	1 7/16-12	1-11 1/2	1 1/2	2.19	0.812	0.938
ProtecON-20-20	1 11/16-12	1 1/4-11 1/2	1 7/8	2.3	1.024	1.25
ProtecON-24-24	2-12	1 1/2-11 1/2	2 1/8	2.4	1.26	1.5

ProtecOV-90

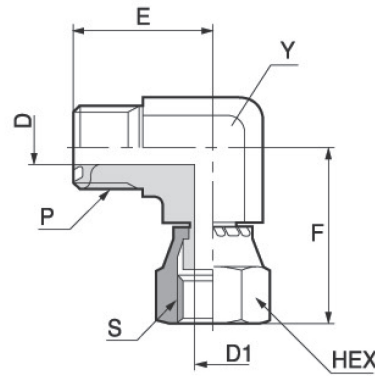
ORFS swivel / ORFS tube ends

SAE 520221

Part Number Information

Body with O-rings

All dimensions are in inches



PART NO	P (UNF/UN)	S (UNF/UN)	E	F	D	D1	HEX	Y
ProtecOV-90-04-04-04	9/16-18	9/16-18	0.85	1.07	0.172	0.166	11/16	9/16
ProtecOV-90-06-06-06	11/16-16	11/16-16	0.98	1.17	0.264	0.264	13/16	3/4
ProtecOV-90-08-08-08	13/16-16	13/16-16	1.1	1.49	0.378	0.358	15/16	3/4
ProtecOV-90-10-10-10	1-14	1-14	1.31	1.65	0.484	0.453	1 1/8	1 1/16
ProtecOV-90-12-12-12	1 3/16-12	1 3/16-12	1.47	1.82	0.609	0.547	1 3/8	1 3/16
ProtecOV-90-16-16-16	1 7/16-12	1 7/16-12	1.64	2.1	0.812	0.781	1 5/8	1 7/16
ProtecOV-90-20-20-20	1 11/16-12	1 11/16-12	1.76	2.29	1.024	1.024	1 7/8	1 5/8
ProtecOV-90-24-24-24	2-12	2-12	1.92	2.41	1.26	1.26	2 1/4	1 7/8

ProtecOV-TC

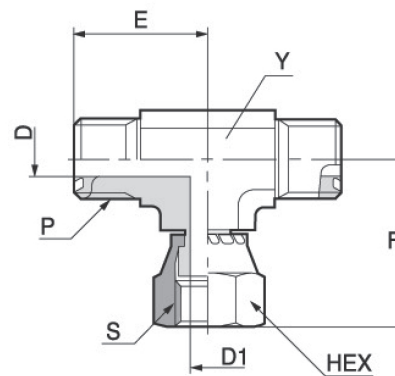
ORFS swivel / ORFS tube ends

SAE 520433

Part Number Information

Body with O-rings

All dimensions are in inches



PART NO	P (UNF/UN)	S (UNF/UN)	E	F	D	D1	HEX	Y
ProtecOV-TC-04-04-04	9/16-18	9/16-18	0.85	1.07	0.172	0.166	11/16	9/16
ProtecOV-TC-06-06-06	11/16-16	11/16-16	0.98	1.17	0.264	0.264	13/16	3/4
ProtecOV-TC-08-08-08	13/16-16	13/16-16	1.1	1.49	0.378	0.358	15/16	3/4
ProtecOV-TC-10-10-10	1-14	1-14	1.31	1.65	0.484	0.453	1 1/8	1 1/16
ProtecOV-TC-12-12-12	1 3/16-12	1 3/16-12	1.47	1.82	0.609	0.547	1 3/8	1 3/16
ProtecOV-TC-16-16-16	1 7/16-12	1 7/16-12	1.64	2.1	0.812	0.781	1 5/8	1 7/16
ProtecOV-TC-20-20-20	1 11/16-12	1 11/16-12	1.76	2.29	1.024	1.024	1 7/8	1 5/8
ProtecOV-TC-24-24-24	2-12	2-12	1.92	2.41	1.26	1.26	2 1/4	1 7/8

ProtecOV-TR

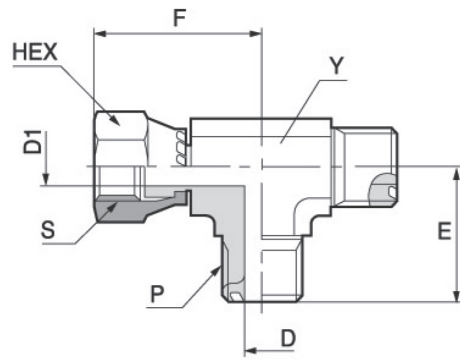
ORFS swivel / ORFS tube ends

SAE 520432

Part Number Information

Body with O-rings

All dimensions are in inches



PART NO	P (UNF/UN)	S (UNF/UN)	E	F	D	D1	HEX	Y
ProtecOV-TR-04-04-04	9/16-18	9/16-18	0.85	1.07	0.172	0.166	11/16	9/16
ProtecOV-TR-06-06-06	11/16-16	11/16-16	0.98	1.17	0.264	0.264	13/16	3/4
ProtecOV-TR-08-08-08	13/16-16	13/16-16	1.1	1.49	0.378	0.358	15/16	3/4
ProtecOV-TR-10-10-10	1-14	1-14	1.31	1.65	0.484	0.453	1 1/8	1 1/16
ProtecOV-TR-12-12-12	1 3/16-12	1 3/16-12	1.47	1.82	0.609	0.547	1 3/8	1 3/16
ProtecOV-TR-16-16-16	1 7/16-12	1 7/16-12	1.64	2.1	0.812	0.781	1 5/8	1 7/16
ProtecOV-TR-20-20-20	1 11/16-12	1 11/16-12	1.76	2.29	1.024	1.024	1 7/8	1 5/8
ProtecOV-TR-24-24-24	2-12	2-12	1.92	2.41	1.26	1.26	2 1/4	1 7/8

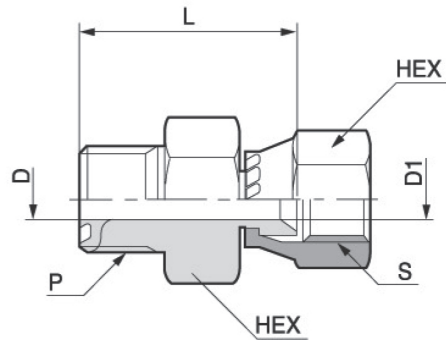
ProtecOV

37° swivel / ORFS tube ends

Part Number Information

Body with O-rings

All dimensions are in inches



PART NO	P (UNF/UN)	S (UNF/UN)	HEX	L	D	D1
ProtecOV-04-04	9/16-18	7/16-20	5/8	1.04	0.172	0.172
ProtecOV-06-06	11/16-16	9/16-18	3/4	1.14	0.264	0.264
ProtecOV-08-08	13/16-16	3/4-16	7/8	1.32	0.378	0.378
ProtecOV-10-10	1-14	7/8-14	1 1/16	1.52	0.484	0.484
ProtecOV-12-12	1 3/16-12	1 1/16-12	1 1/4	1.63	0.609	0.609
ProtecOV-16-16	1 7/16-12	1 5/16-12	1 1/2	1.79	0.812	0.812

ProtecBVO

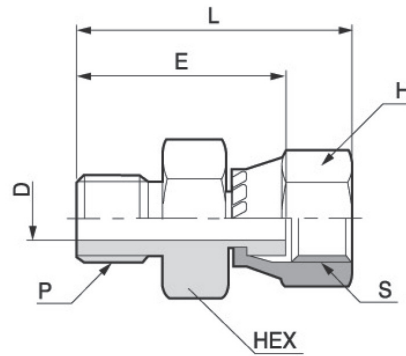
ORFS swivel / straight thread O-ring

SAE 520181

Part Number Information

Body with O-rings

All dimensions are in inches



PART NO	P (UNF/UN)	S (UNF/UN)	HEX	L	F	D	H
ProtecBVO-04-04	7/16-20	9/16-18	5/8	1.46	1.03	0.172	11/16
ProtecBVO-06-06	9/16-18	11/16-16	3/4	1.58	1.11	0.264	13/16
ProtecBVO-08-08	3/4-16	13/16-16	7/8	1.95	1.39	0.378	15/16
ProtecBVO-10-10	7/8-14	1-14	1 1/16	2.13	1.49	0.484	1 1/8
ProtecBVO-12-12	1 1/16-12	1 3/16-12	1 1/4	2.34	1.62	0.609	1 3/8
ProtecBVO-16-16	1 5/16-12	1 7/16-12	1 1/2	2.66	1.93	0.812	1 5/8

ProtecVW-90

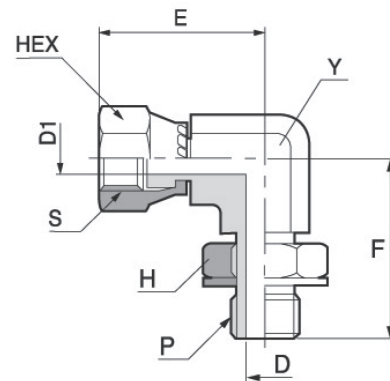
ORFS swivel / straight thread O-ring

SAE 520281

Part Number Information

Body with O-rings

All dimensions are in inches



PART NO	P (UNF/UN)	S (UNF/UN)	E	F	D	D1	HEX	H	Y
ProtecVW-90-04-04	7/16-20	9/16-18	1.07	1.29	0.172	0.166	11/16	5/8	9/16
ProtecVW-90-06-06	9/16-18	11/16-16	1.17	1.45	0.264	0.264	13/16	3/4	3/4
ProtecVW-90-08-08	3/4-16	13/16-16	1.49	1.6	0.378	0.358	15/16	15/16	3/4
ProtecVW-90-10-10	7/8-14	1-14	1.65	1.97	0.484	0.453	1 1/8	1 1/16	1 1/16
ProtecVW-90-12-12	1 1/16-12	1 3/16-12	1.82	2.17	0.609	0.547	1 3/8	1 3/8	1 3/16
ProtecVW-90-16-16	1 5/16-12	1 7/16-12	2.1	2.35	0.812	0.783	1 5/8	1 5/8	1 7/16
ProtecVW-90-20-20	1 5/8-12	1 11/16-12	2.29	2.45	1.024	1.024	1 7/8	1 7/8	1 5/8
ProtecVW-90-24-24	1 7/8-12	2-12	2.41	2.59	1.26	1.26	2 1/4	2 1/8	1 7/8

ProtecOO-90

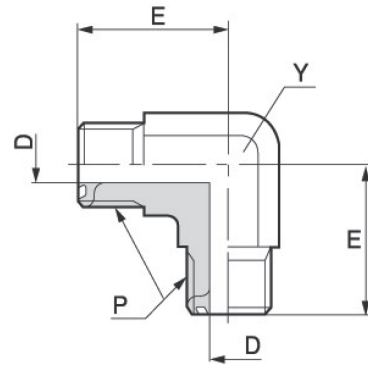
ORFS tube end / ORFS tube ends

SAE 520201

Part Number Information

Body with O-rings

All dimensions are in inches



PART NO	P (UNF/UN)	E	D	Y
ProtecOO-90-04-04	9/16-18	0.85	0.172	9/16
ProtecOO-90-06-06	11/16-16	0.98	0.264	3/4
ProtecOO-90-08-08	13/16-16	1.10	0.378	3/4
ProtecOO-90-10-10	1-14	1.31	0.484	1 1/16
ProtecOO-90-12-12	1 3/16-12	1.47	0.609	1 3/16
ProtecOO-90-16-16	1 7/16-12	1.64	0.812	1 7/16
ProtecOO-90-20-20	1 11/16-12	1.76	1.024	1 5/8
ProtecOO-90-24-24	2-12	1.92	1.260	1 7/8

ProtecOO-T3

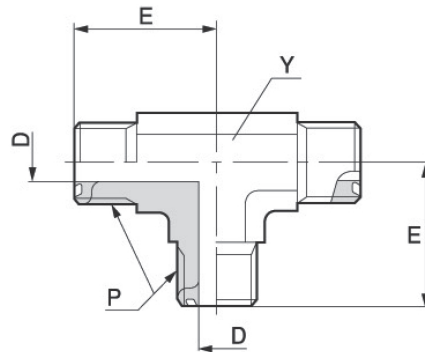
ORFS tube end (all three ends)

SAE 520401

Part Number Information

Body with O-rings

All dimensions are in inches



PART NO	P (UNF/UN)	E	D	Y
ProtecOO-T3-04-04-04	9/16-18	0.85	0.172	9/16
ProtecOO-T3-06-06-06	11/16-16	0.98	0.264	3/4
ProtecOO-T3-08-08-08	13/16-16	1.10	0.378	3/4
ProtecOO-T3-10-10-10	1-14	1.31	0.484	1 1/16
ProtecOO-T3-12-12-12	1 3/16-12	1.47	0.609	1 3/16
ProtecOO-T3-16-16-16	1 7/16-12	1.64	0.812	1 7/16
ProtecOO-T3-20-20-20	1 11/16-12	1.76	1.024	1 5/8
ProtecOO-T3-24-24-24	2-12	1.92	1.260	1 7/8

ProtecOO-C4

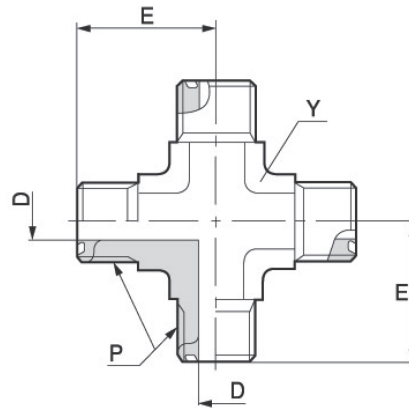
ORFS tube end (all four ends)

SAE 520501

Part Number Information

Body with O-rings

All dimensions are in inches



PART NO	P (UNF/UN)	E	D	Y
ProtecOO-C4-04-04-04-04	9/16-18	0.85	0.172	9/16
ProtecOO-C4-06-06-06-06	11/16-16	0.98	0.264	3/4
ProtecOO-C4-08-08-08-08	13/16-16	1.10	0.378	3/4
ProtecOO-C4-10-10-10-10	1-14	1.31	0.484	1 1/16
ProtecOO-C4-12-12-12-12	1 3/16-12	1.47	0.609	1 3/16
ProtecOO-C4-16-16-16-16	1 7/16-12	1.64	0.812	1 7/16
ProtecOO-C4-20-20-20-20	1 11/16-12	1.76	1.024	1 5/8

ProtecOO

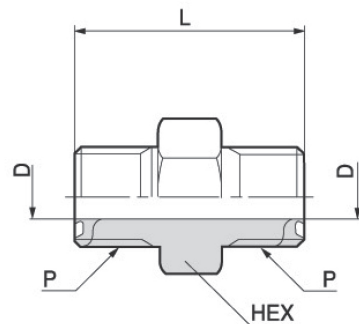
ORFS tube end / ORFS tube end

SAE 520101

Part Number Information

Body with O-rings

All dimensions are in inches



PART NO	P (UNF/UN)	HEX	L	D
ProtecOO-04-04	9/16-18	5/8	1.08	0.172
ProtecOO-06-06	11/16-16	3/4	1.22	0.264
ProtecOO-08-08	13/16-16	7/8	1.39	0.378
ProtecOO-10-10	1-14	1 1/16	1.68	0.484
ProtecOO-12-12	1 3/16-12	1 1/4	1.85	0.608
ProtecOO-16-16	1 7/16-12	1 1/2	1.94	0.812
ProtecOO-20-20	1 11/16-12	1 3/4	2.02	1.024
ProtecOO-24-24	2-12	2 1/8	2.09	1.260

ProtecOH-90

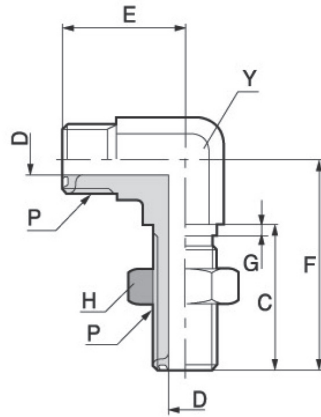
ORFS tube end/ ORFS tube end

SAE 520701

Part Number Information

Body with O-rings and locknut

All dimensions are in inches



PART NO	P (UNF/UN)	E	F	D	C	G	H	Y
ProtecOH-90-04-04	9/16-18	0.89	1.85	0.172	1.24	0.06	13/16	9/16
ProtecOH-90-06-06	11/16-16	1.02	2.05	0.264	1.34	0.06	1	3/4
ProtecOH-90-08-08	13/16-16	1.14	2.18	0.378	1.44	0.06	1.125	3/4
ProtecOH-90-10-10	1-14	1.36	2.48	0.484	1.6	0.06	1 5/16	1 1/16
ProtecOH-90-12-12	1 3/16-12	1.52	2.65	0.609	1.64	0.06	1.5	1 3/16
ProtecOH-90-16-16	1 7/16-12	1.67	2.80	0.812	1.66	0.06	1.75	1 7/16
ProtecOH-90-20-20	1 11/16-12	1.79	2.97	1.024	1.66	0.06	2	1 5/8
ProtecOH-90-24-24	2-12	1.95	3.13	1.26	1.66	0.06	2 3/8	1 7/8

ProtecOH-45

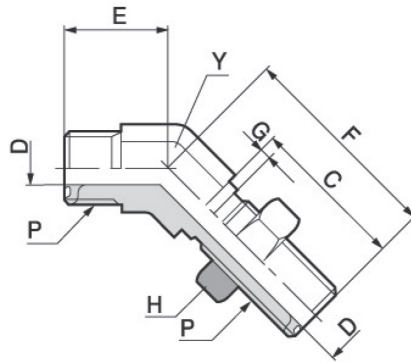
ORFS tube end/ ORFS tube end

SAE 520701

Part Number Information

Body with O-rings and locknut

All dimensions are in inches



PART NO	P (UNF/UN)	E	F	D	C	G	H	Y
ProtecOH-90-04-04	9/16-18	0.89	1.85	0.172	1.24	0.06	13/16	9/16
ProtecOH-90-06-06	11/16-16	1.02	2.05	0.264	1.34	0.06	1	3/4
ProtecOH-90-08-08	13/16-16	1.14	2.18	0.378	1.44	0.06	1.125	3/4
ProtecOH-90-10-10	1-14	1.36	2.48	0.484	1.6	0.06	1 5/16	1 1/16
ProtecOH-90-12-12	1 3/16-12	1.52	2.65	0.609	1.64	0.06	1.5	1 3/16
ProtecOH-90-16-16	1 7/16-12	1.67	2.80	0.812	1.66	0.06	1.75	1 7/16
ProtecOH-90-20-20	1 11/16-12	1.79	2.97	1.024	1.66	0.06	2	1 5/8
ProtecOH-90-24-24	2-12	1.95	3.13	1.26	1.66	0.06	2 3/8	1 7/8

ProtecOH-TR

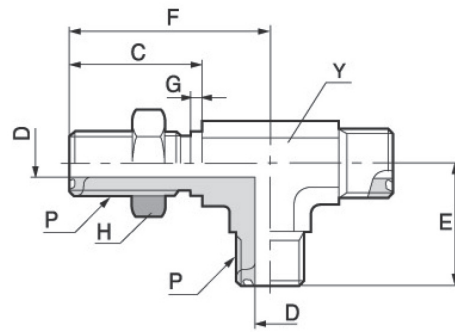
ORFS tube end (all three ends)

SAE 520958

Part Number Information

Body with O-rings and locknut

All dimensions are in inches



PART NO	P (UNF/UN)	E	F	D	C	G	H	Y
ProtecOH-TR-04-04-04	9/16-18	0.89	1.85	0.172	1.24	0.06	13/16	9/16
ProtecOH-TR-06-06-06	11/16-16	1.02	2.05	0.264	1.34	0.06	1	3/4
ProtecOH-TR-08-08-08	13/16-16	1.14	2.18	0.378	1.44	0.06	1.125	3/4
ProtecOH-TA-10-10-10	1-14	1.36	2.48	0.484	1.6	0.06	1 5/16	1 1/16
ProtecOH-TA-12-12-12	1 3/16-12	1.52	2.65	0.609	1.64	0.06	1.5	1 3/16
ProtecOH-TA-16-16-16	1 7/16-12	1.67	2.80	0.812	1.66	0.06	1.75	1 7/16
ProtecOH-TA-20-20-20	1 11/16-12	1.79	2.97	1.024	1.66	0.06	2	1 5/8
ProtecOH-TA-24-24-24	2-12	1.95	3.13	1.26	1.66	0.06	2 3/8	1 7/8

ProtecOH

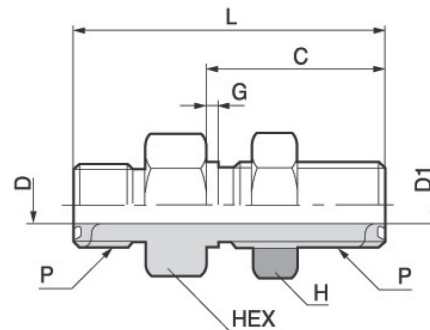
ORFS tube end / ORFS tube end

SAE 520601

Part Number Information

Body with O-rings and locknut

All dimensions are in inches

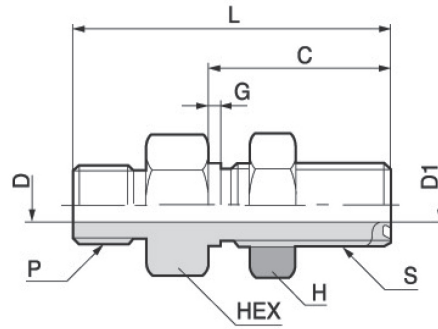


PART NO	P (UNF/UN)	HEX	L	D	C	G	H
ProtecOH-04-04	9/16-18	13/16	1.90	0.172	1.24	0.06	13/16
ProtecOH-06-06	11/16-16	1	2.09	0.264	1.34	0.06	1
ProtecOH-08-08	13/16-16	1 1/8	2.30	0.378	1.44	0.06	1.125
ProtecOH-10-10	1-14	1 5/16	2.62	0.484	1.6	0.06	1 5/16
ProtecOH-12-12	1 3/16-12	1 1/2	2.72	0.609	1.64	0.06	1.5
ProtecOH-16-16	1 7/16-12	1 3/4	2.76	0.812	1.66	0.06	1.75
ProtecOH-20-20	1 11/16-12	2	2.76	1.024	1.66	0.06	2
ProtecOH-24-24	2-12	2 3/8	2.76	1.26	1.66	0.06	2 3/8

ProtecBH

ORFS tube end / Straight thread O-ring

Part Number Information
 Body with O-rings and locknut
 All dimensions are in inches

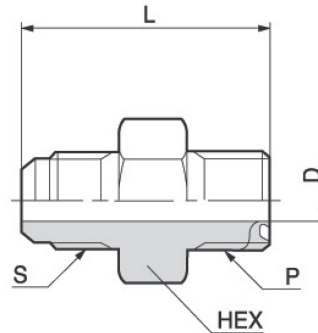


PART NO	P (UNF/UN)	S (UNF/UN)	HEX	L	D	D1	C	G	H
ProtecBH-06-04	9/16-18	9/16-18	13/16	2.18	0.172	0.297	1.24	0.06	13/16
ProtecBH-06-06	9/16-18	11/16-16	1	2.28	0.264	0.297	1.34	0.06	1
ProtecBH-08-08	3/4-16	13/16-16	1 1/8	2.57	0.378	0.391	1.44	0.06	1 1/8

ProtecSO

37°tube end/ ORFS tube end

Part Number Information
 Body with O-rings
 All dimensions are in inches



PART NO	P (UNF/UN)	S (UNF/UN)	HEX	L	D
ProtecSO-04-04	9/16-18	7/16-20	5/8	1.25	0.172
ProtecSO-06-06	11/16-16	9/16-18	3/4	1.34	0.264
ProtecSO-08-08	13/16-16	3/4-16	7/8	1.55	0.378
ProtecSO-10-10	1-14	7/8-14	1 1/16	1.83	0.484
ProtecSO-12-12	1 3/16-16	1 1/16-12	1 1/4	2.05	0.609
ProtecSO-16-16	1 7/16-12	1 5/16-12	1 1/2	2.16	0.812
ProtecSO-20-20	1 11/16-12	1 5/8-12	1 3/4	2.29	1.024
ProtecSO-24-24	2-12	1 7/8-12	2 1/8	2.48	1.26

ProtecOD

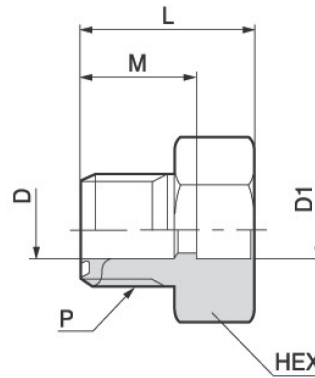
ORFS tube end / Silver braze socket

SAE 520104

Part Number Information

Body with O-rings

All dimensions are in inches



PART NO	P (UNF/UN)	HEX	L	M	D	D1
ProtecOD-04-04	9/16-18	5/8	0.86	0.52	0.172	0.26
ProtecOD-06-06	11/16-16	3/4	0.90	0.56	0.264	0.38
ProtecOD-08-08	13/16-16	7/8	0.97	0.63	0.378	0.51
ProtecOD-10-10	1-14	1 1/16	1.07	0.73	0.484	0.63
ProtecOD-12-12	1 3/16-12	1 1/4	1.32	0.83	0.609	0.76
ProtecOD-16-16	1 7/16-12	1 1/2	1.52	0.97	0.812	1.01
ProtecOD-20-20	1 11/16-12	1 3/4	1.52	0.97	1.024	1.26
ProtecOD-24-24	2-11 1/2	2 1/8	1.52	0.97	1.260	1.51

ProtecOP

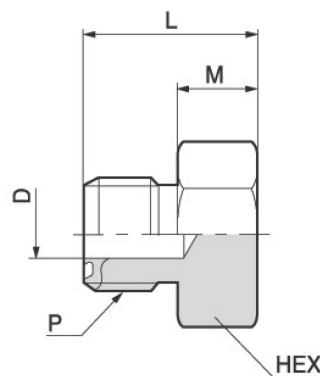
ORFS tube end plug

SAE 520109

Part Number Information

Body with O-rings

All dimensions are in inches



PART NO	P (UNF/UN)	HEX	L	M	D
ProtecOP-04	9/16-18	5/8	0.66	0.20	0.172
ProtecOP-06	11/16-16	3/4	0.76	0.32	0.264
ProtecOP-08	13/16-16	7/8	0.86	0.35	0.378
ProtecOP-10	1-14	1 1/16	1.02	0.41	0.484
ProtecOP-12	1 3/16-12	1 1/4	1.08	0.41	0.609
ProtecOP-16	1 7/16-12	1 1/2	1.10	0.41	0.812
ProtecOP-20	1 11/16-12	1 3/4	1.10	0.41	1.024
ProtecOP-24	2-12	2 1/8	1.10	0.41	1.260

ProtecOVN

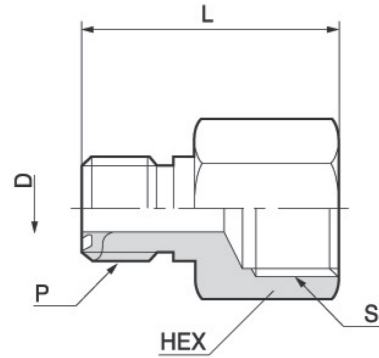
ORFS swivel / ORFS tube end

SAE 520123

Part Number Information

Body with O-rings and cap nut

All dimensions are in inches



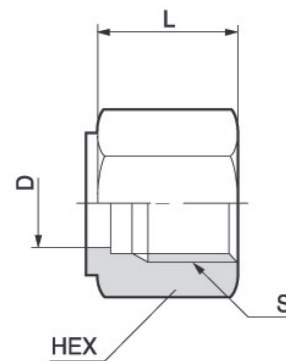
PART NO	P (UNF/UN)	S (UNF/UN)	L	D	HEX
ProtecOVN-04-06	9/16-18	11/16-16	0.77	0.172	13/16
ProtecOVN-04-08	9/16-18	13/16-16	0.86	0.172	15/16
ProtecOVN-06-08	11/16-16	13/16-16	0.88	0.264	15/16
ProtecOVN-06-10	11/16-16	1-14	0.95	0.264	1 1/8
ProtecOVN-08-10	13/16-16	1-14	1.02	0.378	1 1/8
ProtecOVN-08-12	13/16-16	1 3/16-12	1.09	0.378	1 3/8
ProtecOVN-10-12	1-14	1 3/16-12	1.16	0.484	1 3/8
ProtecOVN-10-16	1-14	1 7/16-12	1.26	0.484	1 5/8
ProtecOVN-12-16	1 3/16-12	1 7/16-12	1.30	0.609	1 5/8
ProtecOVN-12-20	1 3/16-12	1 11/16-12	1.32	0.609	1 7/8
ProtecOVN-16-20	1 7/16-12	1 11/16-12	1.51	0.812	1 7/8
ProtecOVN-16-24	1 7/16-12	2-12	1.23	0.812	2 1/4
ProtecOVN-20-24	1 11/16-12	2-12	1.35	1.024	2 1/4

ProtecONU

ORFS tube nut

SAE 520110

All dimensions are in inches



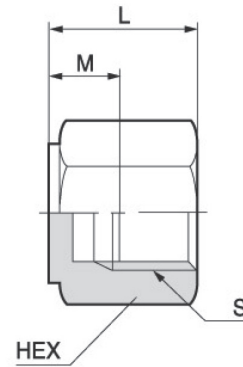
PART NO	P (UNF/UN)	HEX	L	D
ProtecONUT-04	9/16-18	11/16	0.58	0.41
ProtecONUT-06	11/16-16	13/16	0.67	0.53
ProtecONUT-08	13/16-16	15/16	0.83	0.65
ProtecONUT-10	1-14	1 1/8	0.93	0.83
ProtecONUT-12	1 3/16-12	1 3/8	1.02	0.95
ProtecONUT-16	1 7/16-12	1 5/8	1.10	1.14
ProtecONUT-20	1 11/16-12	1 7/8	1.10	1.42
ProtecONUT-24	2-12	2 1/4	1.10	1.73

ProtecOCA

ORFS tube end cap

SAE 520112

All dimensions are in inches



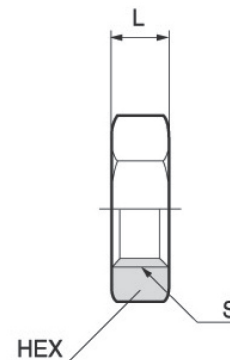
PART NO	S (UNF/UN)	HEX	L	M
ProtecOCAP-04	9/16-18	11/16	0.65	0.34
ProtecOCAP-06	11/16-16	13/16	0.74	0.37
ProtecOCAP-08	13/16-16	15/16	0.90	0.47
ProtecOCAP-10	1-14	1 1/8	1.00	0.47
ProtecOCAP-12	1 3/16-12	1 3/8	1.10	0.53
ProtecOCAP-16	1 7/16-12	1 5/8	1.16	0.59
ProtecOCAP-20	1 11/16-12	1 7/8	1.16	0.59
ProtecOCAP-24	2-12	2 1/4	1.16	0.59

ProtecOLN

Bulkhead fitting lock nut

SAE 520118

All dimensions are in inches

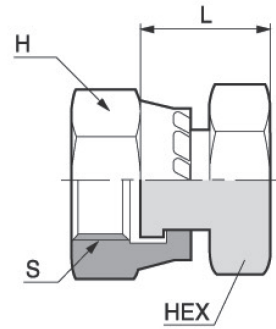


PART NO	S (UNF/UN)	HEX	L
ProtecOLN-04	9/16-18	13/16	0.27
ProtecOLN-06	11/16-16	1	0.32
ProtecOLN-08	13/16-16	1 1/8	0.35
ProtecOLN-10	1-14	1 5/16	0.41
ProtecOLN-12	1 3/16-12	1 1/2	0.41
ProtecOLN-16	1 7/16-12	1 3/4	0.41
ProtecOLN-20	1 11/16-12	2	0.41
ProtecOLN-24	2-12	2 3/8	0.41

ProtecUV

Fitting swivel nut

All dimensions are in millimeters



PART NO	S (UNF/UN)	HEX	L	H
ProtecUV-04	9/16-18	19	16.5	19
ProtecUV-06	11/16-16	22	18	22
ProtecUV-08	13/16-16	27	21.5	27
ProtecUV-12	1 3/16-12	36	23	36
ProtecUV-16	1 7/16-12	41	24.5	41.3