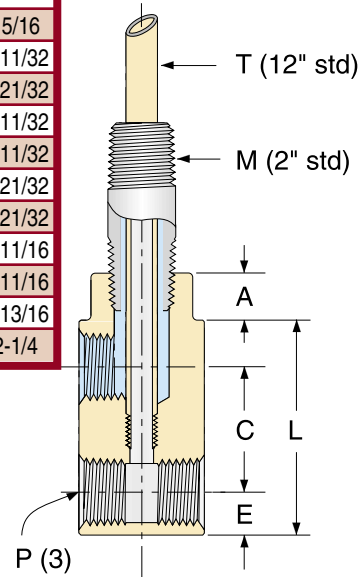


ASSEMBLIES

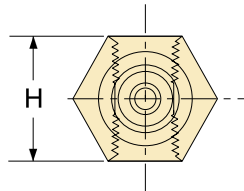
CATALOG NUMBER	M PIPE NIPPLE (NPT)	P PIPE TAP SIZE (NPT)	T BRASS TUBE O.D.	BRASS TUBE INCLUDED	H HEX SIZE	E	C	A	L
16N	1/8	1/16	3/16	187T-12	3/4	7/32	1/2	9/32	15/16
186N	1/8	1/8	3/16	187T-12	7/8	21/64	11/16	9/32	1-11/32
181N	1/8	1/8	3/16	187T-12	7/8	21/64	1"	9/32	1-21/32
146N	1/4	1/8	1/4	250T-12	1"	21/64	11/16	7/32	1-11/32
146N-4	1/4	1/4	1/4	250T-12	1"	21/64	11/16	7/32	1-11/32
141N	1/4	1/8	1/4	250T-12	1"	21/64	1"	7/16	1-21/32
141N-4	1/4	1/4	1/4	250T-12	1"	21/64	1"	7/16	1-21/32
381N	3/8	1/8	5/16	312T-12	1"	11/32	1"	13/32	1-11/16
381N-4	3/8	1/4	5/16	312T-12	1"	11/32	1"	13/32	1-11/16
121N-4	1/2	1/4	7/16	437T-12	1-1/4	13/32	1"	9/16	1-13/16
341N-4	3/4	3/8	5/8	625T-12	1-1/2	1/2	1-1/4	3/4	2-1/4



- Assemblies include brass head, 12" brass tube, 2" long galvanized pipe nipple, and brass pipe plug.
- Order extra length brass tubes below.
- Cascade assemblies are available in special pipe tap and tube combinations.

HEADS

CATALOG NUMBER	TUBE THREAD SIZE	BRASS TUBE NUMBER
16H	10-32	187T-
186H	10-32	187T-
181H	10-32	187T-
146H	1/4-28	250T-
146H-4	1/4-28	250T-
141H	1/4-28	250T-
141H-4	1/4-28	250T-
381H	5/16-24	312T-
381H-4	5/16-24	312T-
121H-4	7/16-20	437T-
341H-4	5/8-18	625T-



- For use with standard brass tubes.
- All dimensions are same as above assembly chart for corresponding catalog number.
- Supplied with brass pipe plug.
- Special pipe tap sizes, tube thread sizes and hole locations are available.
- Use brass tubes on page HC5.

HIGH FLOW HEADS

CATALOG NUMBER	TUBE THREAD SIZE	HIGH FLOW TUBE NUMBER
16H-HFT	1/4-28	HF187T-
186H-HFT	1/4-28	HF187T-
181H-HFT	1/4-28	HF187T-
146H-HFT	5/16-24	HF250T-
146H-4-HFT	5/16-24	HF250T-
141H-HFT	5/16-24	HF250T-
141H-4-HFT	5/16-24	HF250T-
381H-HFT	3/8-24	HF312T-
381H-4-HFT	3/8-24	HF312T-
121H-4-HFT	1/2-20	HF437T-



- For use with high flow stainless tubes.
- All dimensions are same as above assembly chart except for tube thread size.
- Supplied with brass pipe plug.
- Special pipe tap sizes, tube thread sizes and hole locations are available.
- Use high flow stainless tubes on page HC5.

Increased inlet areas produce higher flow rates.

ASSEMBLIES

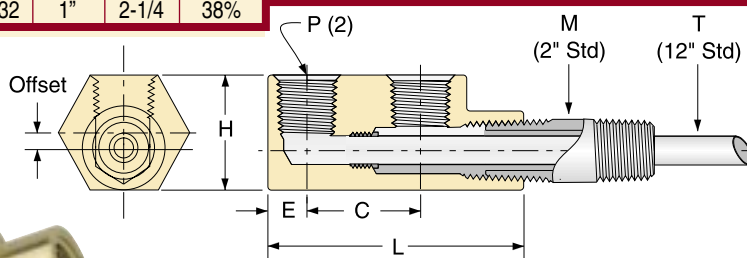
CATALOG NUMBER	M PIPE NIPPLE (NPT)	P PIPE TAP SIZE (NPT)	T HIGH FLOW TUBE O.D.	T HIGH FLOW TUBE INCLUDED	H HEX SIZE	OFFSET	E	C	L	% ACTUAL FLOW INCREASE
HF16N	1/16	1/16	1/8	HF125T-12	5/8	3/32	1/4	1/2	1-1/4	-
HF186N	1/8	1/8	3/16	HF187T-12	3/4	3/32	5/16	11/16	1-5/8	64%
HF181N	1/8	1/8	3/16	HF187T-12	3/4	3/32	5/16	1"	1-15/16	64%
HF146N-4	1/4	1/4	1/4	HF250T-12	1"	5/32	11/32	11/16	1-7/8	48%
HF141N-4	1/4	1/4	1/4	HF250T-12	1"	5/32	11/32	1"	2-3/16	48%
HF381N-4	3/8	1/4	3/8	HF375T-12	1-1/8	1/8	11/32	1"	2-1/4	38%

- Up to 64% higher flow rates than standard cascades.
- Offset design provides more sealing threads without pipe interference.
- Assemblies include brass head, 12" high flow stainless tube, and 2" long galvanized pipe nipple.

If cooling rates are limiting cycle times, or connection leakage is a problem, the High Flow Cascade should solve the problem.

HEADS

CATALOG NUMBER	HIGH FLOW TUBE THREAD SIZE	USE HIGH FLOW TUBE NUMBER
HF16H	10-32	HF125T-
HF186H	1/4-28	HF187T-
HF181H	1/4-28	HF187T-
HF146H-4	5/16-24	HF250T-
HF141H-4	5/16-24	HF250T-
HF381H-4	7/16-20	HF375T-



- All dimensions are same as above assembly chart.
- Special pipe tap sizes and tube combinations are available.
- Use high flow stainless tubes on page HC5.

Compact Cascades

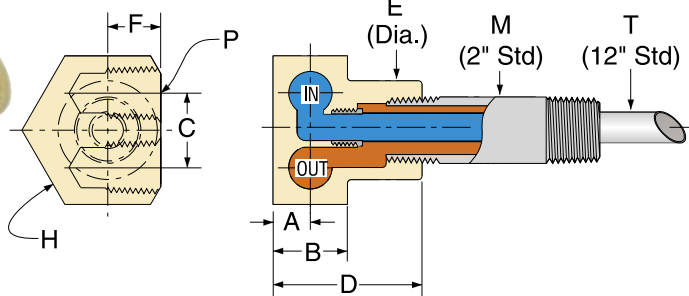
ASSEMBLIES

CATALOG NUMBER	M PIPE NIPPLE (NPT)	P IN/OUT PIPE (NPT)	T HIGH FLOW TUBE O.D.	T HIGH FLOW TUBE INCLUDED	H HEX SIZE	A	B	C	D	E	F
ET1816	1/8	1/16	3/16	HF187T-12	15/16	7/32	7/16	1/2	1"	5/8	.330
ET1418	1/4	1/8	1/4	HF250T-12	1-1/4	5/16	5/8	11/16	1-1/4	3/4	.410
ET1414	1/4	1/4	1/4	HF250T-12	1-1/2	3/8	3/4	3/4	1-1/2	7/8	.540
ET3814	3/8	1/4	5/16	HF312T-12	1-1/2	3/8	3/4	3/4	1-1/2	1"	.540

- Assemblies include brass head, 12" high flow stainless tube, and 2" long galvanized pipe nipple.
- In/Out connections are positioned sideways for mounting in tight spaces or thin mold plates.

HEADS

CATALOG NUMBER	M PIPE NIPPLE (NPT)	P IN/OUT PIPE (NPT)	HIGH FLOW TUBE THREAD SIZE	USE HIGH FLOW TUBE NUMBER
ET1816H	1/8	1/16	1/4-28	HF187T-
ET1418H	1/4	1/8	5/16-24	HF250T-
ET1414H	1/4	1/4	5/16-24	HF250T-
ET3814H	3/8	1/4	3/8-24	HF312T-



- All dimensions are same as above assembly chart.
- Use high flow stainless tubes on page HC5.

Compact Cascades provide maximum cooling rates with improved design and High Flow Tubes.

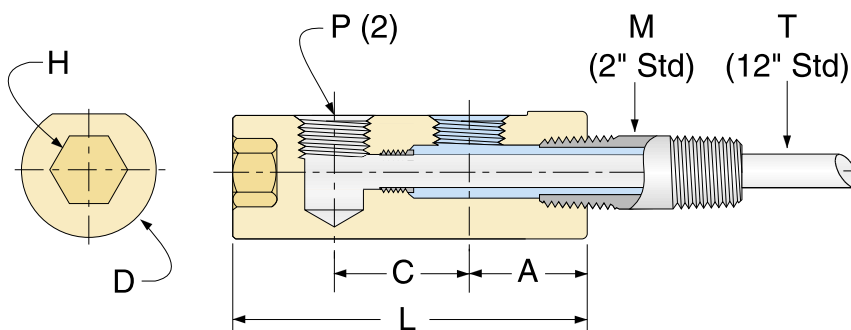
HexKey Cascades are round, and install with an Allen wrench. They may be installed with minimal clearance or very close together where space is limited.



ASSEMBLIES

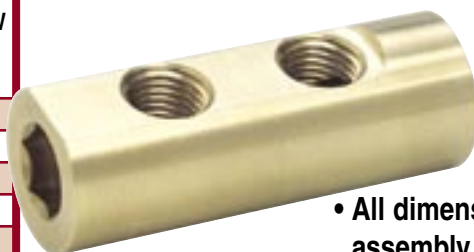
CATALOG NUMBER	M PIPE NIPPLE (NPT)	P PIPE TAP SIZE (NPT)	T HIGH FLOW TUBE O.D.	HIGH FLOW TUBE INCLUDED	H HEX KEY SIZE	L	C	A	NOMINAL CLEARANCE DRILL	D ACTUAL O.D.
E16N	1/16	1/16	1/8	HF125T-12	5/16	1.625	9/16	1/2	5/8	.610
E16N-2	1/8	1/16	3/16	HT187T-12	3/8	1.687	9/16	9/16	3/4	.735
E186N	1/8	1/8	3/16	HT187T-12	3/8	1.875	11/16	9/16	7/8	.860
E181N	1/8	1/8	3/16	HT187T-12	3/8	2.187	1"	9/16	7/8	.860
E146N	1/4	1/8	1/4	HT250T-12	1/2	2.187	11/16	13/16	1"	.985
E146N-4	1/4	1/4	1/4	HT250T-12	1/2	2.312	11/16	7/8	1"	.985
E141N	1/4	1/8	1/4	HT250T-12	1/2	2.500	1"	13/16	1"	.985
E141N-4	1/4	1/4	1/4	HT250T-12	1/2	2.625	1"	7/8	1"	.985
E381N-4	3/8	1/4	5/16	HT312T-12	1/2	2.625	1"	7/8	1"	.985
E121N-4	1/2	1/4	3/8	HT375T-12	1/2	2.812	1"	1"	1-1/4	1.235

- Assemblies include brass head, 12" high flow stainless tube, and 2" long galvanized pipe nipple.
- Easy to install and remove.



HEADS

CATALOG NUMBER	HIGH FLOW TUBE THREAD SIZE	USE HIGH FLOW TUBE NUMBER
E16H	10-32	HF125T-
E16H-2	1/4-28	HF187T
E186H	1/4-28	HF187T-
E181H	1/4-28	HF187T-
E146H	5/16-24	HF250T-
E146H-4	5/16-24	HF250T-
E141H	5/16-24	HF250T-
E141H-4	5/16-24	HF250T-
E381H-4	3/8-24	HF312T-
E121H-4	7/16-20	HF375T-



- All dimensions are same as above assembly chart.
- HexKey Cascade heads use High Flow stainless tubes on page HC5.