



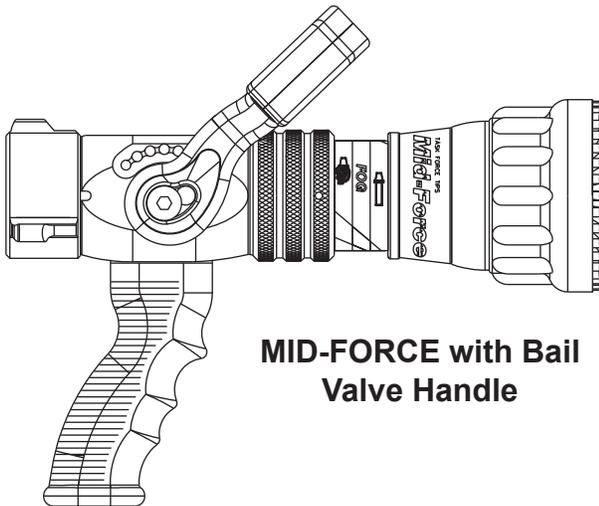
MANUAL: Hand Held Automatic Dual Pressure Nozzles

Mid-Force, CAFS-Force and Dual-Force

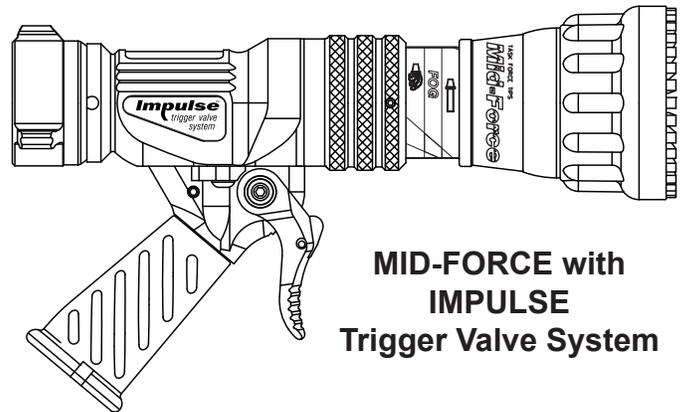
INSTRUCTIONS FOR SAFE OPERATION AND MAINTENANCE

⚠️ WARNING

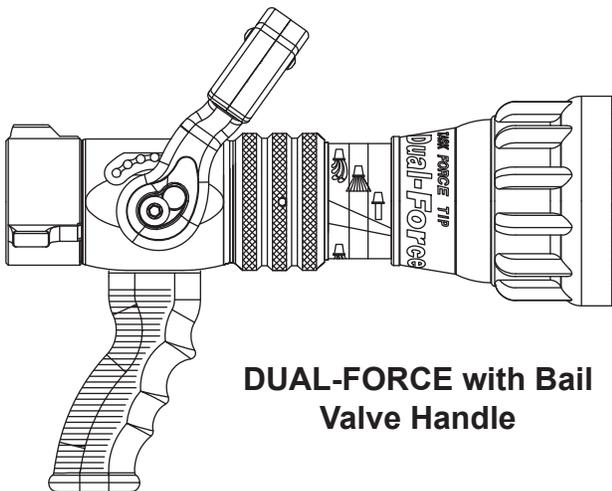
Understand manual before use. Operation of this device without understanding the manual and receiving proper training is a misuse of this equipment. Obtain safety information at www.tft.com/serial-number



**MID-FORCE with Bail
Valve Handle**



**MID-FORCE with
IMPULSE
Trigger Valve System**



**DUAL-FORCE with Bail
Valve Handle**

⚠️ DANGER

PERSONAL RESPONSIBILITY CODE

The member companies of FEMSA that provide emergency response equipment and services want responders to know and understand the following:

1. Firefighting and Emergency Response are inherently dangerous activities requiring proper training in their hazards and the use of extreme caution at all times.
2. It is your responsibility to read and understand any user's instructions, including purpose and limitations, provided with any piece of equipment you may be called upon to use.
3. It is your responsibility to know that you have been properly trained in Firefighting and /or Emergency Response and in the use, precautions, and care of any equipment you may be called upon to use.
4. It is your responsibility to be in proper physical condition and to maintain the personal skill level required to operate any equipment you may be called upon to use.
5. It is your responsibility to know that your equipment is in operable condition and has been maintained in accordance with the manufacturer's instructions.
6. Failure to follow these guidelines may result in death, burns or other severe injury.



Fire and Emergency Manufacturers and Service Association
P.O. Box 147, Lynnfield, MA 01940 • www.FEMSA.org

TASK FORCE TIPS, INC.
MADE IN USA • www.tft.com

3701 Innovation Way, Valparaiso, IN 46383-9327 USA
800-348-2686 • 219- 462-6161 • Fax 219-464-7155

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1.0 MEANING OF SAFETY SIGNAL WORDS

A safety related message is identified by a safety alert symbol and a signal word to indicate the level of risk involved with a particular hazard. Per ANSI standard Z535.6-2011, the definitions of the four signal words are as follows:



DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.



WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.



CAUTION indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury.



NOTICE is used to address practices not related to physical injury.

2.0 SAFETY



An inadequate supply of nozzle pressure and/or flow will cause an ineffective stream and can result in injury, death, or loss of property. See flow graphs or call 800-348-2686 for assistance.



The nozzle may be damaged if frozen while containing significant amounts of water. Such damage may be difficult to detect visually and can lead to possible injury or death. Any time the nozzle is subject to possible damage due to freezing, it must be tested by qualified personnel before being considered safe for use.



This equipment is intended for use by trained personnel for firefighting. Their use for other purposes may involve hazards not addressed by this manual. Seek appropriate guidance and training to reduce risk of injury.



Failure to restrain nozzle reaction can cause firefighter injury from loss of footing and/or stream protection. Nozzle reaction will vary as supply conditions change: such as opening or closing other nozzles, hose line kinks, changes in pump settings, etc. Changes in spray pattern or flushing will also affect nozzle reaction. The nozzle operator must always be prepared in the event of these changes.



If nozzle gets out of control or away from operator, retreat from nozzle immediately. Do not attempt to regain control of nozzle while flowing water. Injury from whipping can occur.



Water is a conductor of electricity. Application of water on high voltage equipment can cause injury or death by electrocution. The amount of current that may be carried back to the nozzle will depend on the following factors:

- Voltage of the line or equipment
- Distance from the nozzle to the line or equipment
- Size of the stream
- Whether the stream is solid or broken
- Purity of the water¹

¹ The Fire Fighter and Electrical Equipment, The University of Michigan Extension Service, Fourth Printing 1983. Page 47



Fire streams are capable of injury and damage. Do not direct water stream to cause injury or damage to persons or property.

3.0 GENERAL INFORMATION

The Task Force Tips nozzles are designed to provide excellent performance under most firefighting conditions. Their rugged construction is compatible with the use of fresh water as well as firefighting foam solutions. Other important operating features are:

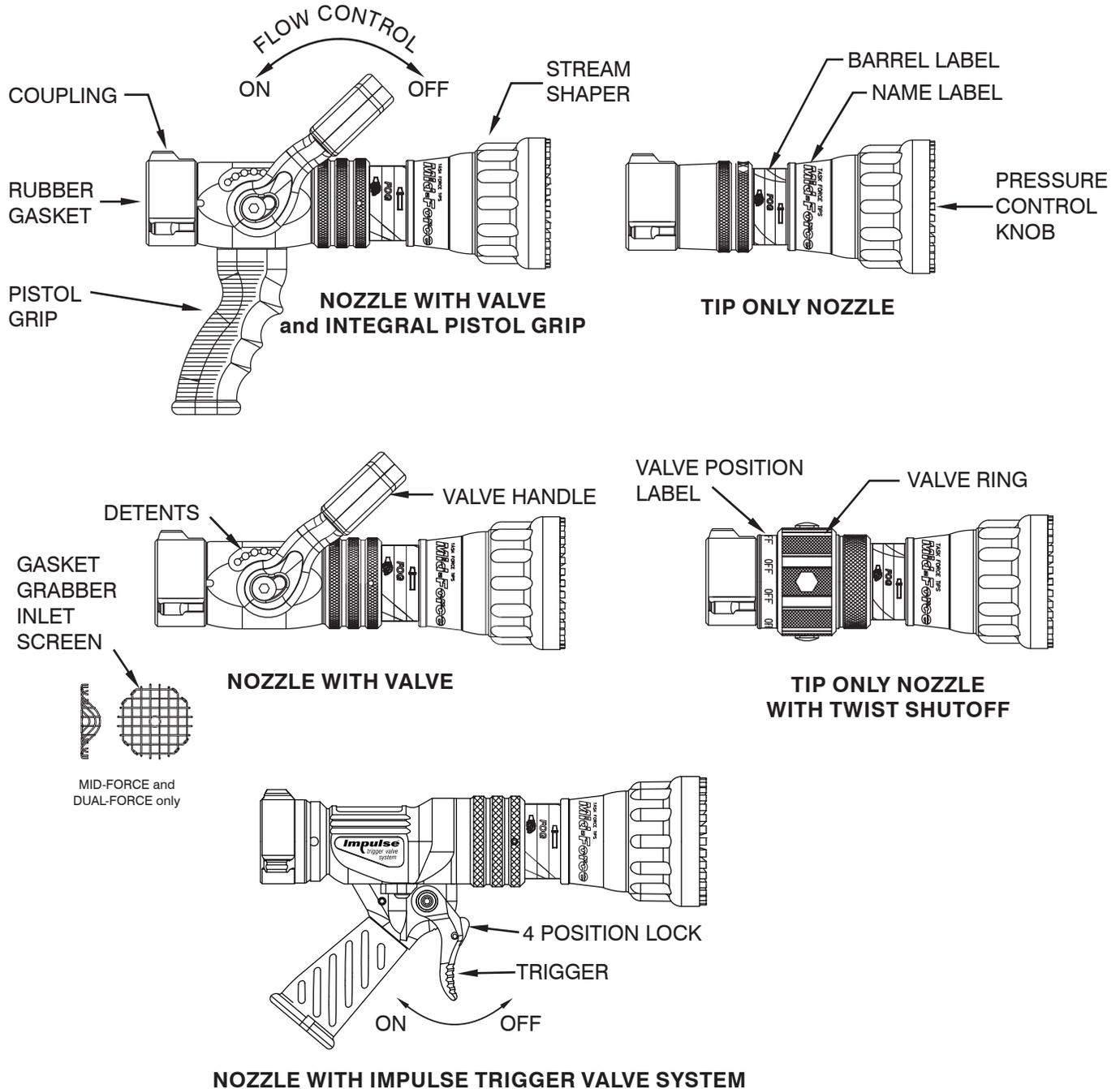
- Switchable from standard operation to low pressure
- Automatic pressure regulation (meets NFPA 1964 automatic nozzle pressure requirements)
- Slide valve for excellent stream quality at all valve positions
- Quick-acting pattern control from straight stream to wide fog
- “Power fog teeth” for full-fill fog
- “Gasket grabber” inlet screen to keep large debris from entering nozzle
- Easily flushable while flowing to clear trapped debris
- TFT’s five-year warranty and unsurpassed customer service

3.1 VARIOUS MODELS AND TERMS

The nozzle is available in several different models and inlet connections. Basic body styles are shown in figure 3.1A

SERIES	FLOW RANGE		NOMINAL PRESSURE		STANDARD COUPLING*
	GPM	L/min	PSI	BAR	
MID-FORCE	70-200	265-760	100	7	1-1/2 NH
MID-FORCE	70-200	265-760	75	5	1-1/2 NH
DUAL-FORCE	95-300	360-1150	100	7	1-1/2 NH
DUAL-FORCE	95-300	360-1150	75	5	1-1/2 NH
CAFS-FORCE1	70-200	265-760	75	5	1-1/2 NH
CAFS-FORCE2	95-250	360-950	75	5	1-1/2 NH

* Other threads, coupling sizes, or connector styles can be specified at time of order.



3.1A COMMON MODELS AND TERMS

3.2 SPECIFICATIONS

3.2.1 MECHANICAL

Maximum nozzle inlet pressure with valve shutoff	300 psi	21 bar
Operating temperature range of fluid	33 to 120° F	1 to 50° C
Storage temperature range	-40 to 150° F	-40 to 65° C
Materials used	Aluminum 6000 series hard anodized MIL8625 class 3 type 2, stainless steel 300 series, nylon 6-6, nitrile rubber	

3.3 NOZZLE COUPLINGS

Many inlet couplings such as NH (National Hose) or NPSH (National Pipe Straight Hose) can be specified at time of order.



Nozzle must be mated to a hose line with matched threads. Mismatched or damaged threads may cause nozzle to leak or uncouple under pressure and could cause injury.



Dissimilar metals coupled together can cause galvanic corrosion that can result in the inability to unscrew the threads or complete loss of thread engagement over time. Per NFPA 1962, if dissimilar metals are left coupled together an anti-corrosive lubricant should be applied to the threads. Also the coupling should be disconnected and inspected at least quarterly.

3.4 USE WITH SALT WATER

Use with saltwater is permissible provided nozzle is thoroughly cleaned with fresh water after each use. The service life of the nozzle may be shortened due to the effects of corrosion and is not covered under warranty.

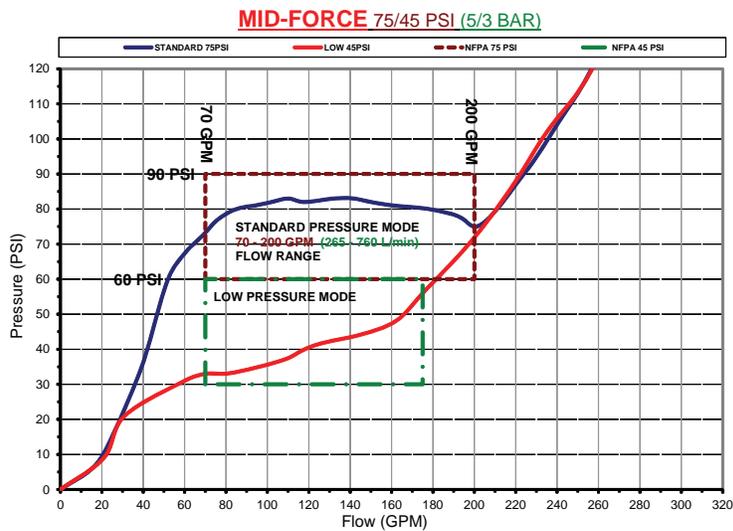
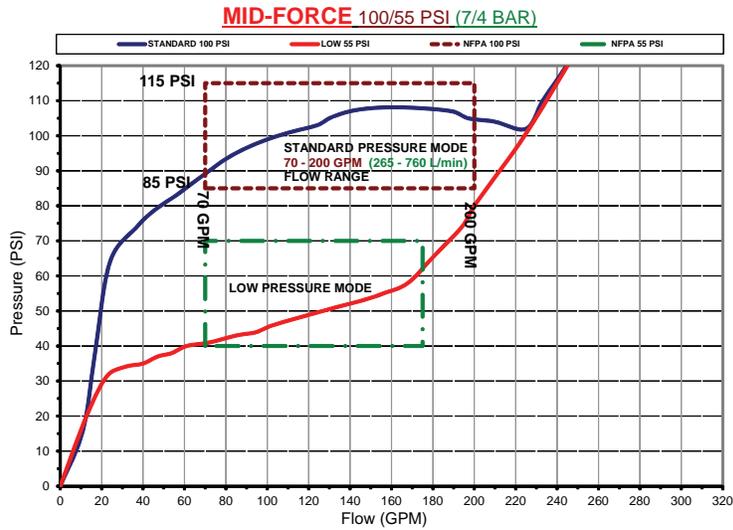
4.0 FLOW CHARACTERISTICS

The following graphs show the typical performance of MID-FORCE, CAFS-FORCE and DUAL-FORCE nozzles.

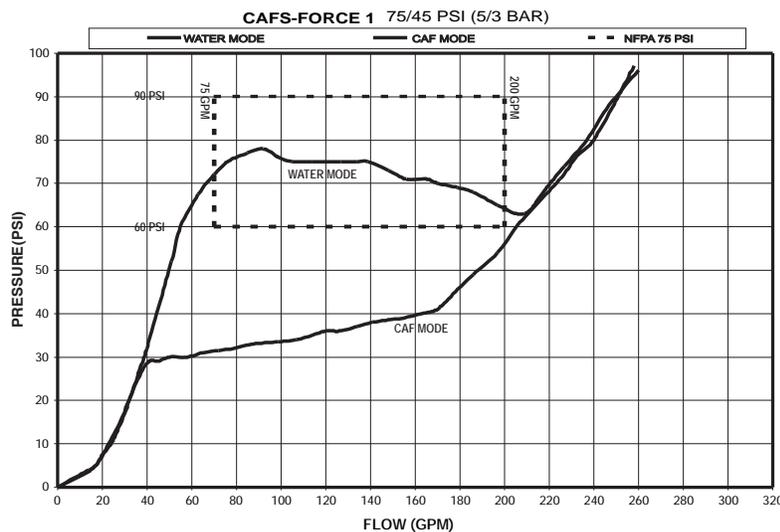
SPECIAL CONFIGURATIONS - If nozzles are made according to the special marking or performance requirements of the fire department then the operating characteristics may differ from the published data in this manual. Repair parts specific to each serial number may differ from those shown in the service procedure. The required parts for each serial number are available on-line by entering www.tft.123456 with the numbers corresponding to the serial number engraved on the product.

4.1 FLOW GRAPHS

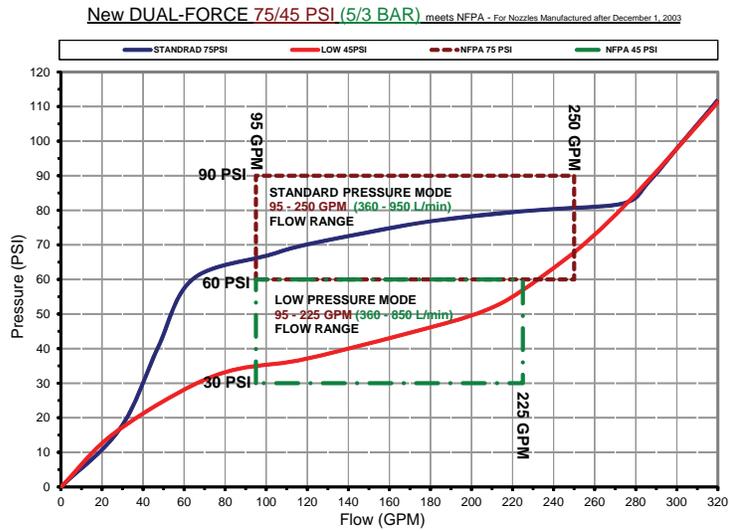
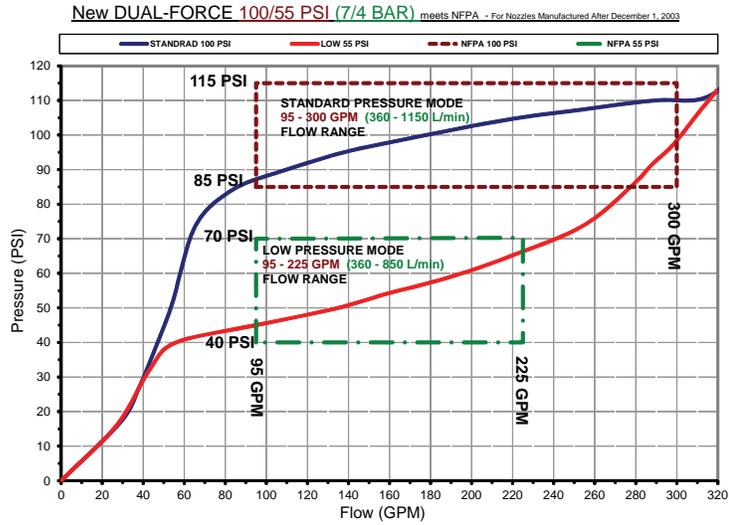
Mid-Force meets NFPA flow requirements.



CAFS-Force 1



The charts in section 4.2 of this document give specific examples of maximum flow rates for particular situations. Friction losses may vary due to differences in hose construction resulting in flows different than those shown. For situations or lengths of hose not listed on the chart, approximate flows can be calculated using conventional hydraulics. NOTE: Within the flow range, the nozzle inlet pressure may be approximated to be 100 or 75 PSI, when used in the standard pressure mode, and 55 or 45 PSI in low pressure mode.



CAFS-Force 2

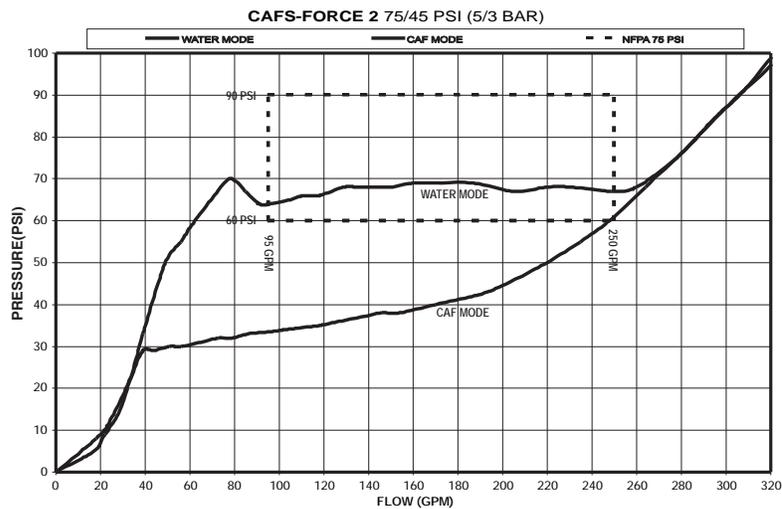


FIGURE 3 - NOZZLE PERFORMANCE
(on pages 6 - 7)

Mid-Force 100/55 PSI

STD = STANDARD PRESSURE MODE
LP = LOW PRESSURE MODE

Flow And Nozzle Reaction Chart

FLOW (GPM) REACTION (LBS)	1 1/2" HOSE						1 3/4" HOSE						2" HOSE					
	150 ft.		200 ft.		250 ft.		150 ft.		200 ft.		250 ft.		150 ft.		200 ft.		250 ft.	
	STD	LP	STD	LP	STD	LP	STD	LP	STD	LP	STD	LP	STD	LP	STD	LP	STD	LP
50	21 8	55 17	21 7	50 16	21 7	46 14	21 8	65 21	21 8	60 19	21 7	54 17	22 8	82 27	22 8	75 24	22 8	68 22
75	31 13	93 31	29 12	83 27	28 12	75 24	32 14	111 38	32 14	100 33	31 13	91 30	36 15	141 51	35 15	128 45	34 15	119 41
100	65 30	121 42	59 27	107 36	55 25	97 32	72 34	143 52	72 34	129 45	67 32	117 40	84 41	184 72	79 38	167 63	75 36	153 56
125	93 45	143 52	84 40	126 44	77 37	114 39	108 54	172 65	108 54	152 56	97 48	138 50	135 69	213 90	122 62	198 79	113 57	182 70
150	117 59	163 61	105 52	143 52	96 47	130 46	141 72	195 77	141 72	174 66	125 63	158 58	196 101	---	168 87	220 95	151 78	205 84
175	140 72	180 69	124 63	159 59	112 57	143 52	174 90	213 90	174 90	192 76	151 78	175 66	---	---	212 109	---	187 97	223 98
200	162 84	196 78	141 73	173 66	128 65	156 58	204 105	228 102	204 105	207 86	175 91	189 75	---	---	---	---	222 113	---
225	183 94	209 87	158 82	186 72	142 73	168 63	---	---	---	198 102	198 102	203 83	---	---	---	---	---	---

CAUTION: Changing to Low Pressure mode will typically increase nozzle reaction.

(1) Number on top in each box indicates flow (GPM), and number on bottom indicates nozzle reaction (LBS). (2) In Standard mode, the average nozzle pressure is 100 PSI. (3) Flows may vary with brand or condition of hose. (4) Flows are approximate and do not reflect losses in preconnect piping.

Mid-Force 7/4 BAR

Flow And Nozzle Reaction Chart

7 bar = STANDARD PRESSURE MODE
LP = LOW PRESSURE MODE

FLOW (LPM) REACTION (KG)	38mm HOSE						45mm HOSE						50mm HOSE					
	45M		60M		75M		45M		60M		75M		45M		60M		75M	
	7 bar	LP	7 bar	LP	7 bar	LP	7 bar	LP										
3.5	80 4	210 8	80 3	190 7	80 3	175 6	80 4	245 10	80 4	225 9	80 3	205 8	85 4	310 12	85 4	285 11	85 4	225 10
5.2	115 6	350 14	110 5	315 12	105 5	285 11	85 6	420 17	120 6	380 15	115 6	345 14	135 175	535 23	130 7	485 20	130 7	450 19
7.0	245 14	460 19	225 12	405 16	210 11	365 15	275 15	540 24	255 15	490 20	240 13	445 18	320 19	695 33	300 17	630 29	300 17	580 25
8.6	350 20	540 24	320 18	475 20	290 17	430 18	410 25	650 30	365 22	575 25	345 20	520 23	510 31	805 41	460 28	750 36	430 26	690 32
10.0	445 27	615 28	395 24	540 24	365 21	490 21	535 33	740 35	475 29	660 30	430 26	600 26	740 46	---	635 40	---	570 35	775 38
12.0	530 33	680 31	470 29	600 27	425 26	540 24	660 41	805 41	570 35	725 35	515 32	660 30	---	---	800 50	---	710 44	845 45
14.0	615 38	740 35	535 33	655 30	485 30	590 26	770 48	---	660 41	785 39	595 37	715 34	---	---	---	---	840 51	---
15.5	695 43	790 40	600 37	705 33	535 33	635 29	---	---	750 46	835 44	665 41	770 38	---	---	---	---	---	---

CAUTION: Changing to Low Pressure mode will typically increase nozzle reaction.

(1) Number on top in each box indicates flow (LPM), and number on bottom indicates nozzle reaction (KG). (2) In Standard mode, the average nozzle pressure is 7 bar. (3) Flows may vary with brand or condition of hose. (4) Flows are approximate and do not reflect losses in preconnect piping.

Mid-Force 75/45 PSI

STD = STANDARD PRESSURE MODE
LP = LOW PRESSURE MODE

Flow And Nozzle Reaction Chart

FLOW (GPM) REACTION (LBS)	1 1/2" HOSE						1 3/4" HOSE						2" HOSE					
	150 ft.		200 ft.		250 ft.		150 ft.		200 ft.		250 ft.		150 ft.		200 ft.		250 ft.	
	STD	LP	STD	LP	STD	LP	STD	LP	STD	LP	STD	LP	STD	LP	STD	LP	STD	LP
50	43 14	69 20	43 14	62 18	42 13	57 16	45 15	84 25	44 15	74 21	43 14	67 19	45 15	84 25	45 16	97 29	45 15	89 26
75	55 22	104 32	53 21	92 27	51 20	83 24	59 24	121 39	57 23	110 34	55 22	101 30	64 27	155 53	62 26	140 47	60 25	128 42
100	78 35	127 42	72 32	113 35	68 29	103 31	91 41	153 52	82 37	136 45	77 34	123 40	122 56	182 71	105 48	171 63	97 44	162 56
125	108 50	149 50	96 43	131 43	86 39	119 38	134 62	174 65	118 54	159 55	105 48	145 48	203 89	204 89	166 75	192 79	146 67	181 70
150	136 63	166 60	119 54	148 50	106 49	134 44	173 78	191 78	148 68	174 66	132 60	162 57	6 6	6 6	210 95	210 95	189 85	199 85
175	162 73	180 70	138 64	163 57	124 57	147 50	206 91	206 91	175 79	189 77	155 71	175 66	6 6	6 6	6 6	6 6	215 99	214 99
200	183 82	192 79	157 72	174 65	140 64	160 55	220 104	220 104	201 88	202 87	176 80	188 76	6 6	6 6	6 6	6 6	6 6	6 6
225	204 90	204 89	174 79	184 73	155 71	170 62	---	---	214 98	214 98	196 86	199 85	6 6	---	---	6 6	6 6	6 6

CAUTION: Changing to Low Pressure mode will typically increase nozzle reaction.

(1) Number on top in each box indicates flow (GPM), and number on bottom indicates nozzle reaction (LBS). (2) In Standard mode, the average nozzle pressure is 100 PSI. (3) Flows may vary with brand or condition of hose. (4)

Mid-Force 5/3 BAR

Flow And Nozzle Reaction Chart

7 bar = STANDARD PRESSURE MODE
LP = LOW PRESSURE MODE

FLOW (LPM) REACTION (KG)	38mm HOSE						45mm HOSE						50mm HOSE					
	45M		60M		75M		45M		60M		75M		45M		60M		75M	
	5 bar	LP																
3.5	163 6	261 9	163 6	235 8	159 6	216 7	170 7	318 11	167 7	280 10	163 6	254 9	170 7	318 11	170 7	367 13	170 7	337 12
5.2	208 10	394 15	193 9	348 12	193 9	314 11	223 11	458 18	216 12	416 15	208 10	382 14	242 12	587 24	235 12	530 21	227 11	484 19
7.0	295 16	481 19	257 13	428 16	257 13	390 14	344 19	579 24	310 19	515 20	291 15	466 18	462 25	689 32	397 22	647 29	367 20	613 25
8.6	409 23	564 23	326 18	496 20	326 18	450 17	507 28	659 29	447 25	602 25	397 22	549 22	768 40	772 40	628 34	727 36	553 30	685 32
10.0	515 29	628 27	401 22	560 23	401 22	507 20	655 35	723 35	560 31	659 30	500 27	613 26	613 26	613 26	795 43	795 43	715 39	753 39
12.0	613 33	681 32	469 26	617 26	469 26	556 23	780 41	780 41	662 36	715 35	587 32	662 30	662 30	662 30	662 30	662 30	814 45	810 45
14.0	693 37	727 36	530 29	659 29	530 29	606 25	833 47	833 47	761 40	765 39	666 36	712 34	666 36	666 36	666 36	666 36	666 36	666 36
15.5	772 41	772 40	587 32	696 33	587 32	643 28	---	---	810 44	810 44	742 39	753 39	742 39	742 39	742 39	742 39	742 39	742 39

CAUTION: Changing to Low Pressure mode will typically increase nozzle reaction.

(1) Number on top in each box indicates flow (LPM), and number on bottom indicates nozzle reaction (KG). (2) In Standard mode, the average nozzle pressure is 7 bar. (3) Flows may vary with brand or condition of hose. (4) Flows are approximate and do not reflect losses in preconnect piping.

For Nozzles with: Serial # TFT-H465101 and over or Manufactured after 12/01/2003

Dual-Force 100/55 PSI

Flow And Nozzle Reaction Chart

STD = STANDARD PRESSURE MODE
LP = LOW PRESSURE MODE

FLOW (GPM) REACTION (LBS)	1 1/2" HOSE						1 3/4" HOSE						2" HOSE						2 1/2" HOSE					
	150 ft.		200 ft.		250 ft.		150 ft.		200 ft.		250 ft.		150 ft.		200 ft.		250 ft.		150 ft.		200 ft.		250 ft.	
	STD	LP	STD	LP	STD	LP	STD	LP	STD	LP	STD	LP	STD	LP	STD	LP	STD	LP	STD	LP	STD	LP	STD	LP
50	48	54	47	50	45	47	50	62	49	56	48	53	51	76	51	70	50	65	53	107	53	102	53	97
	16	17	15	15	14	14	17	20	16	18	15	17	18	25	17	23	17	21	19	37	19	35	19	33
75	59	91	57	80	56	72	61	110	60	98	59	89	63	141	62	127	61	116	65	206	65	194	65	184
	23	31	22	27	21	24	25	38	24	33	23	30	27	51	26	45	25	40	28	82	28	76	28	71
100	74	118	69	104	65	94	83	144	77	128	73	116	99	185	91	166	86	152	135	265	128	254	122	242
	33	41	30	36	28	32	38	52	35	45	33	40	47	71	43	62	40	56	66	119	62	110	59	103
125	100	141	89	124	82	112	119	172	107	152	98	138	152	221	136	199	126	182	245	299	223	288	207	279
	47	51	42	44	38	39	58	65	51	56	46	50	76	90	67	78	61	70	128	149	115	139	106	130
150	124	160	110	141	100	128	151	196	134	174	122	157	198	252	176	227	160	208	328	326	312	315	283	306
	60	60	53	51	47	45	75	77	66	66	59	58	101	108	89	93	80	80	179	179	166	167	149	156
175	146	178	128	157	116	142	179	217	158	193	143	175	238	274	210	251	190	230	---	---	340	340	331	329
	72	68	63	58	56	51	91	88	79	75	71	66	124	126	108	108	97	95	---	---	195	195	183	182
200	165	194	145	171	131	154	204	237	179	210	162	190	273	294	240	270	217	250	---	---	---	---	---	---
	83	76	72	64	64	57	105	99	91	84	81	74	144	144	125	123	112	108	---	---	---	---	---	---
225	183	209	160	184	144	166	227	255	199	226	179	205	307	311	268	287	242	268	---	---	---	---	---	---
	93	84	80	71	71	62	117	110	101	93	91	81	163	163	141	138	126	121	---	---	---	---	---	---
250	199	223	174	196	157	177	248	269	216	241	195	218	329	328	293	303	264	283	---	---	---	---	---	---
	102	91	88	77	81	67	129	122	112	102	100	89	181	181	155	154	139	134	---	---	---	---	---	---

CAUTION: Changing to Low Pressure mode will typically increase nozzle reaction.

(1) Number on top of each box indicates flow (GPM), and number on bottom indicates nozzle reaction (LBS). (2) In Standard mode, the average nozzle pressure is 100 PSI. (3) Flows may vary with brand or condition of hose. (4) Flows are approximate and do not reflect losses in preconnect piping.

For Nozzles with: Serial # TFT-H465101 and over or Manufactured after 12/01/2003

DualForce 7/4 BAR

Flow And Nozzle Reaction Chart

7 bar = STANDARD PRESSURE MODE

LP = LOW PRESSURE MODE

FLOW (l/min) REACTION (KG)	38mm HOSE						45mm HOSE						50mm HOSE						64mm HOSE					
	45M		60M		75M		45M		60M		75M		45M		60M		75M		45M		60M		75M	
	7 bar	LP	7 bar	LP	7 bar	LP	7 bar	LP	7 bar	LP	7 bar	LP	7 bar	LP	7 bar	LP	7 bar	LP	7 bar	LP	7 bar	LP	7 bar	LP
3.5	182	204	178	189	170	178	185	212	182	201	193	288	193	265	189	246	201	405	201	386	201	367	15	15
5.2	223	344	212	303	212	273	227	371	223	337	238	534	235	481	231	439	246	780	246	734	246	696	32	32
7.0	280	447	246	394	246	356	291	484	276	439	375	700	344	628	326	575	511	1003	484	961	462	916	47	47
8.6	379	534	310	469	310	424	405	575	371	522	575	836	515	753	477	689	927	1132	844	1090	783	1056	59	59
10.0	469	606	379	534	379	484	507	659	462	594	749	954	666	859	606	787	1241	1234	1181	1192	1071	1158	71	71
12.0	553	674	439	594	439	537	598	731	541	662	901	1037	795	950	719	871	6	6	1287	1287	1253	1245	83	83
14.0	625	734	496	647	496	583	678	795	613	719	1033	1113	908	1022	821	946	6	6	---	6	6	6	6	6
15.5	693	791	545	696	545	628	753	855	678	776	1162	1177	1014	1086	916	1014	6	6	6	6	6	6	6	6
17.0	753	844	594	742	594	670	818	912	738	825	1245	1241	1109	1147	999	1071	6	6	---	6	6	---	---	---

CAUTION: Changing to Low Pressure mode will typically increase nozzle reaction.

(1) Number on top of each box indicates flow (GPM), and number on bottom indicates nozzle reaction (LBS). (2) In Standard mode, the average nozzle pressure is 100 PSI. (3) Flows may vary with brand or condition of hose. (4) Flows are approximate and do not reflect losses in preconnect piping.

For Nozzles with: Serial # TFT-H465101 and over or Manufactured after 12/01/2003

DualForce 75/45 PSI

Flow And Nozzle Reaction Chart

STD = STANDARD PRESSURE MODE
LP = LOW PRESSURE MODE

FLOW (GPM) REACTION (LBS)	1 1/2" HOSE						1 3/4" HOSE						2" HOSE						2 1/2" HOSE					
	150 ft.		200 ft.		250 ft.		150 ft.		200 ft.		250 ft.		150 ft.		200 ft.		250 ft.		150 ft.		200 ft.		250 ft.	
	STD	LP	STD	LP	STD	LP	STD	LP	STD	LP	STD	LP	STD	LP	STD	LP	STD	LP	STD	LP	STD	LP	STD	LP
50	48	71	47	65	45	60	84	49	75	48	70	51	107	51	96	88	50	88	53	157	53	148	53	140
	16	20	15	18	14	16	25	16	22	15	20	18	33	17	29	26	17	26	19	52	19	48	18	45
75	64	104	60	91	58	82	126	67	112	63	101	88	162	81	145	133	76	133	123	230	116	221	111	212
	25	31	23	27	22	24	39	26	34	25	30	36	54	33	47	42	31	42	52	89	49	83	46	77
100	96	130	85	114	77	103	115	103	139	93	126	148	203	132	182	166	121	166	252	269	224	260	206	251
	39	41	34	35	31	31	48	42	44	38	39	64	72	57	63	56	51	56	114	120	101	112	92	105
125	122	151	108	133	98	120	149	131	162	119	147	197	232	173	212	194	158	194	300	300	290	290	282	281
	52	49	45	42	40	37	64	56	54	50	48	88	90	76	77	69	69	68	150	150	140	140	131	131
150	145	170	124	149	115	135	177	156	182	141	165	239	256	210	234	218	189	218	343	341	317	335	307	307
	63	57	54	48	48	43	78	68	63	61	55	108	108	94	92	84	84	81	185	185	167	173	157	157
175	165	187	144	164	130	148	203	178	201	160	182	276	276	242	255	236	217	236	356	355	349	348	342	342
	72	65	62	55	56	48	91	79	71	70	63	127	127	109	108	98	94	94	210	209	198	197	186	186
200	183	202	160	178	144	160	227	198	217	178	197	295	295	270	272	243	223	254	369	368	362	361	356	354
	81	72	70	61	62	53	102	88	80	79	70	145	145	123	123	110	107	107	235	234	222	221	210	209
225	200	216	174	190	157	172	249	216	231	195	211	312	313	289	288	266	269	269	6	6	375	373	368	367
	89	80	77	66	68	58	113	97	90	87	77	163	163	138	138	121	120	120	6	6	245	245	232	232
250	216	229	188	202	169	182	269	234	244	210	223	329	336	304	304	284	284	284	---	---	6	6	380	378
	97	88	83	72	74	63	123	106	99	94	85	181	180	154	154	133	134	134	---	---	---	---	255	255

CAUTION: Changing to Low Pressure mode will typically increase nozzle reaction.

(1) Number on top of each box indicates flow (GPM), and number on bottom indicates nozzle reaction (LBS). (2) In Standard mode, the average nozzle pressure is 100 PSI. (3) Flows may vary with brand or condition of hose. (4) Flows are approximate and do not reflect losses in preconnect piping.

For Nozzles with: Serial # TFT-H465101 and over or Manufactured after 12/01/2003

Dual-Force 5/3 BAR

Flow And Nozzle Reaction Chart

7 bar = STANDARD PRESSURE MODE

LP = LOW PRESSURE MODE

FLOW (l/min) REACTION (KG)	38mm HOSE						45mm HOSE						50mm HOSE						64mm HOSE					
	45M		60M		75M		45M		60M		75M		45M		60M		75M		45M		60M		75M	
	5 bar	LP	5 bar	LP	5 bar	LP	5 bar	LP	5 bar	LP	5 bar	LP	5 bar	LP	5 bar	LP	5 bar	LP	7 bar	LP	5 bar	LP	5 bar	LP
3.5	182 7	269 8	178 7	246 8	170 6	227 7	189 8	318 11	185 7	284 10	265 9	193 8	405 15	363 13	189 8	333 12	201 9	594 24	201 9	560 22	201 9	560 22	201 9	530 20
5.2	242 11	394 14	227 10	344 12	220 10	310 11	276 13	477 18	254 12	424 15	382 14	333 16	613 24	549 21	288 14	503 19	466 24	871 40	439 22	836 38	420 21	836 38	420 21	802 35
7.0	363 18	492 19	322 15	431 16	291 14	390 14	435 22	594 24	390 19	526 20	477 18	560 29	768 33	689 29	458 23	628 25	954 52	1018 54	848 46	984 51	780 42	984 51	780 42	950 48
8.6	462 24	572 23	409 20	503 19	371 18	454 17	564 29	693 29	496 25	613 24	556 22	746 40	878 41	802 35	598 31	734 31	1136 68	1136 68	1098 64	1098 64	1067 59	1067 59	1067 59	1064 59
10.0	549 29	643 27	481 24	564 22	435 22	511 20	670 35	780 34	590 31	689 29	534 28	905 49	969 49	886 42	715 38	825 37	1298 84	1291 84	1200 76	1268 78	1162 71	1162 71	1162 71	1162 71
12.0	625 33	708 31	545 28	621 25	492 25	560 22	768 41	852 39	674 36	761 32	606 32	1045 58	1045 58	965 49	821 44	893 43	1347 95	1344 95	1321 90	1317 89	1298 84	1298 84	1298 84	1294 84
14.0	693 37	765 34	606 32	674 28	545 28	606 24	859 46	912 44	749 40	821 36	674 36	1117 66	1117 66	1022 56	920 50	961 49	1397 107	1393 106	1370 101	1366 100	1347 95	1347 95	1347 95	1340 95
15.5	757 40	818 38	659 35	719 30	594 31	651 26	942 51	973 49	818 44	874 41	738 39	1181 74	1185 74	1094 63	1007 55	1018 54	1419 111	1419 111	1412 111	1412 111	1393 105	1393 105	1393 105	1389 105
17.0	818 44	867 41	712 38	765 33	640 34	689 29	1018 56	1026 55	886 48	924 45	795 43	1245 82	1272 82	1151 70	1075 60	1075 61	1438 116	1438 116	1431 116	1431 116	1431 116	1431 116	1431 116	1431 116

CAUTION: Changing to Low Pressure mode will typically increase nozzle reaction.

(1) Number on top of each box indicates flow (GPM), and number on bottom indicates nozzle reaction (LBS). (2) In Standard mode, the average nozzle pressure is 100 PSI. (3) Flows may vary with brand or condition of hose. (4) Flows are approximate and do not reflect losses in preconnect piping.

4.3 REACH AND TRAJECTORY

Care must be taken to avoid dents or nicks in the nozzle tip because they can seriously affect the stream reach.

The following are specific examples of maximum flow rates for particular situations. Friction losses may vary due to differences in hose construction resulting in flows different than those shown. For situations or lengths of hose not listed on the chart, approximate flows can be calculated using conventional hydraulics.

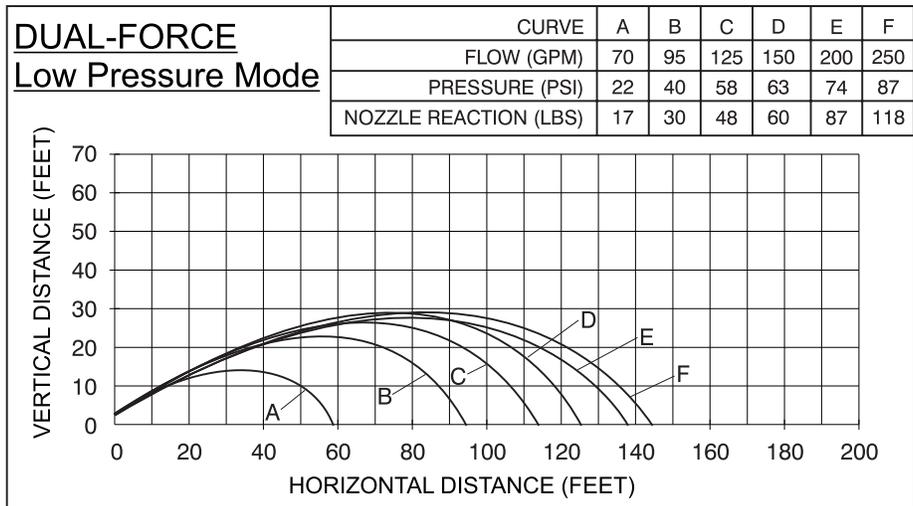
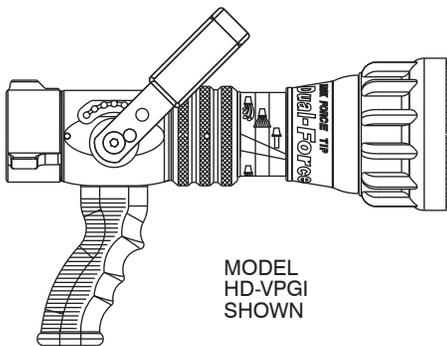
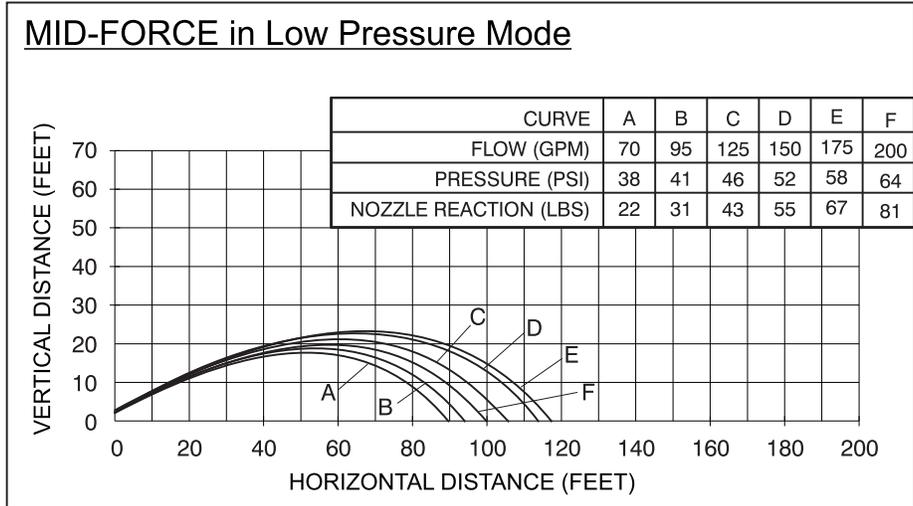
All reach testing was taken in still air conditions at an elevation of 30 degrees.

MID-FORCE

Flow range 70-200 GPM, automatic pressure control at emergency low pressure mode.

NOZZLE TESTED

Mid-Force
Model: HM-VPGI
Serial #: TFTH-145249

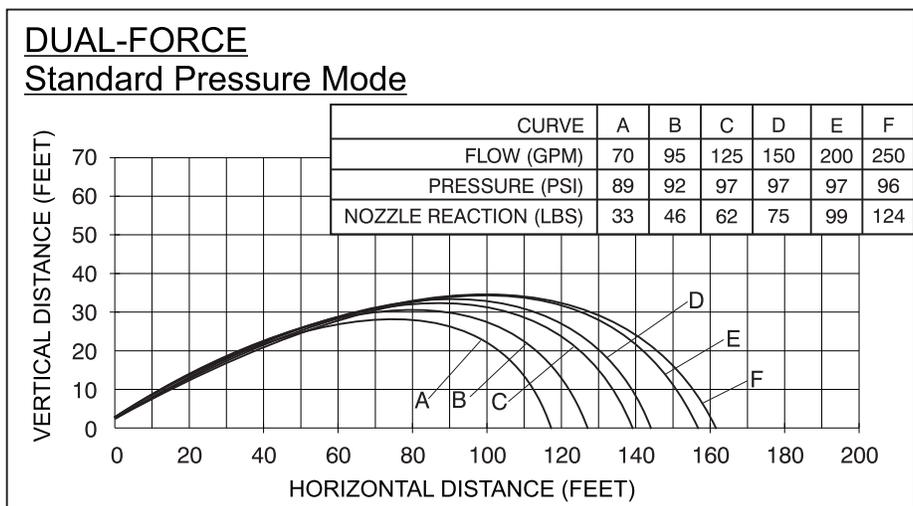


DUAL-FORCE

Flow range 70-250 GPM, automatic pressure control with 100 PSI and emergency low pressure mode.

NOZZLE TESTED

DUAL-FORCE
Model: HD-VPGI
Serial #: TFTH-041501



5.0 NOZZLE CONTROLS

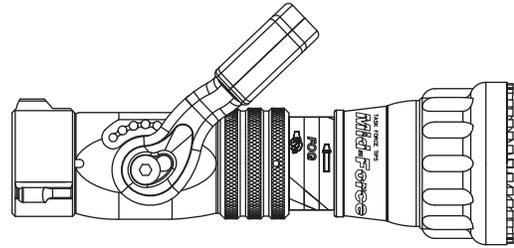
Nozzle control valves must be opened slowly to eliminate unnecessary strain on the hose and couplings and reduce pressure surges.

5.1 FLOW CONTROL

5.1.1 LEVER TYPE FLOW CONTROL

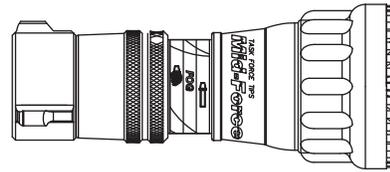
On models that use a lever type valve handle, the nozzle is shut off when the handle is fully forward. The valve handle has detented flow positions. These detent positions allow the nozzle operator to regulate the flow of the nozzle depending on the need or what can be safely and effectively handled. TFT recommends the use of a pistol grip for easier handling. For additional stress reduction, a hose rope or strap may also be used. This permits more effective use and ease of advancement, while minimizing strain and fatigue.

Nozzles attached to an in-service hose shall be stored in the off position.



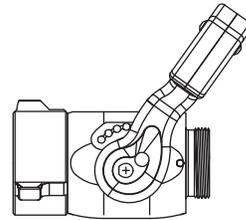
5.1.2 TIP ONLY

Tip only nozzles have NO shut-off valve within the nozzle and MUST be used with a separate ball valve attached to the nozzle. Using a nozzle without a shutoff is an unsafe practice and should never be done.



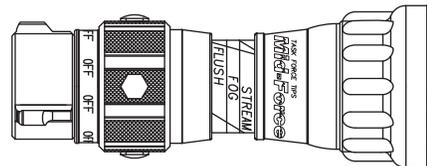
5.1.3 BALL SHUT-OFF

A separate ball valve for use with Tip Only nozzles is shut off when the valve handle is fully forward. Pulling back on the handle opens the valve. Open valve slowly to avoid sudden changes in nozzle reaction. Close valve slowly to prevent water hammer. Note: In partially open positions a ball valve will cause turbulence and adversely affect stream quality. Nozzles attached to an in-service hose shall be stored in the off position.

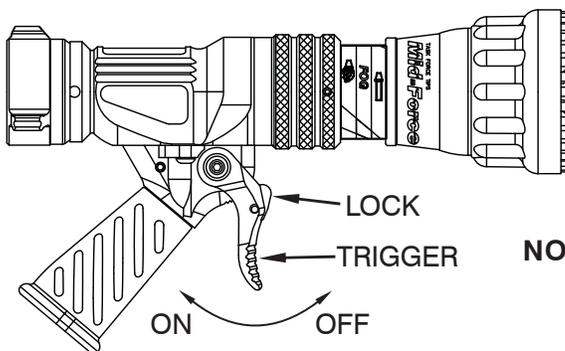


5.1.4 TWIST SHUT-OFF

On models that use a twist flow control, the valve is opened or closed by rotating the valve ring. Rotating the ring clockwise (as seen from the operating position behind the nozzle) closes the valve, while counterclockwise rotation opens it. Detents are provided at four intermediate positions and the position of the valve is shown by the exposed valve position label. Nozzles attached to an in-service hose shall be stored in the off position.



5.1.5 IMPULSE TRIGGER FLOW CONTROL

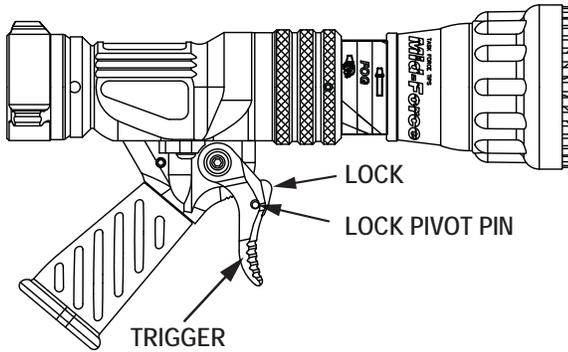


NOTE: THE TRIGGER RETURNS TO OFF IF NOT HELD OR LOCKED



Do not intentionally release the nozzle while flowing and trust the valve to shut off automatically. The trigger nozzle's ability to shut off by itself represents an extra level of safety when following normal nozzle handling procedures. To rely on it as the sole means of safety increases the risk of injury from an out of control nozzle. Release nozzle when flow has stopped.

5.1.5.1 IMPULSE TRIGGER LOCK



To Lock: Push on the lock while pulling back the trigger to engage one of the four locked positions.

To Release: Pull back slightly on trigger without any pressure on the lock. The spring loaded lock will automatically move to the unlocked position.

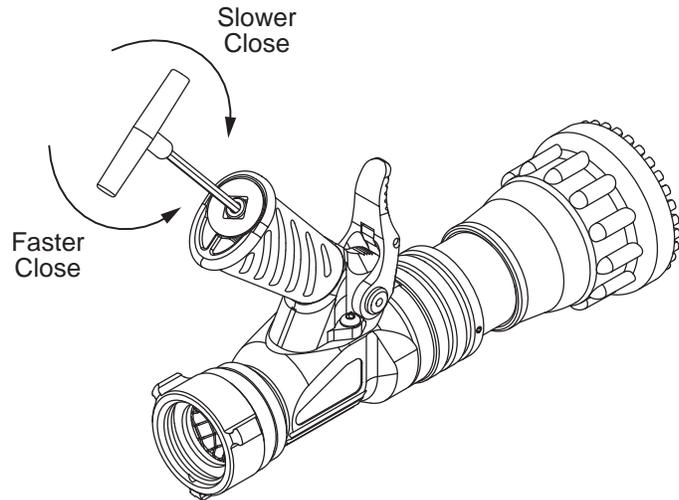
Use an 1/8" (3mm) punch to push out pin and remove lock if the lock is not desired.

▲WARNING

When the trigger lock is engaged, the nozzle will not shut off if dropped. Always shut off nozzle before releasing the pistol grip to avoid injury from an out of control nozzle.

5.1.5.2 TRIGGER FLOW CONTROL SPEED ADJUSTMENT

The IMPULSE valve contains a slow close mechanism to prevent the nozzle from slamming off if the trigger is suddenly released. The closing speed is set at the factory to be slow enough to reduce water hammer, ("water hammer" is always present in any valve when it is shut off. The slow close mechanism will reduce this but cannot eliminate it completely) but fast enough to reduce the potential danger of hose whipping from a dropped nozzle. The closing speed may be adjusted as shown in the figure.5.1.5.2.

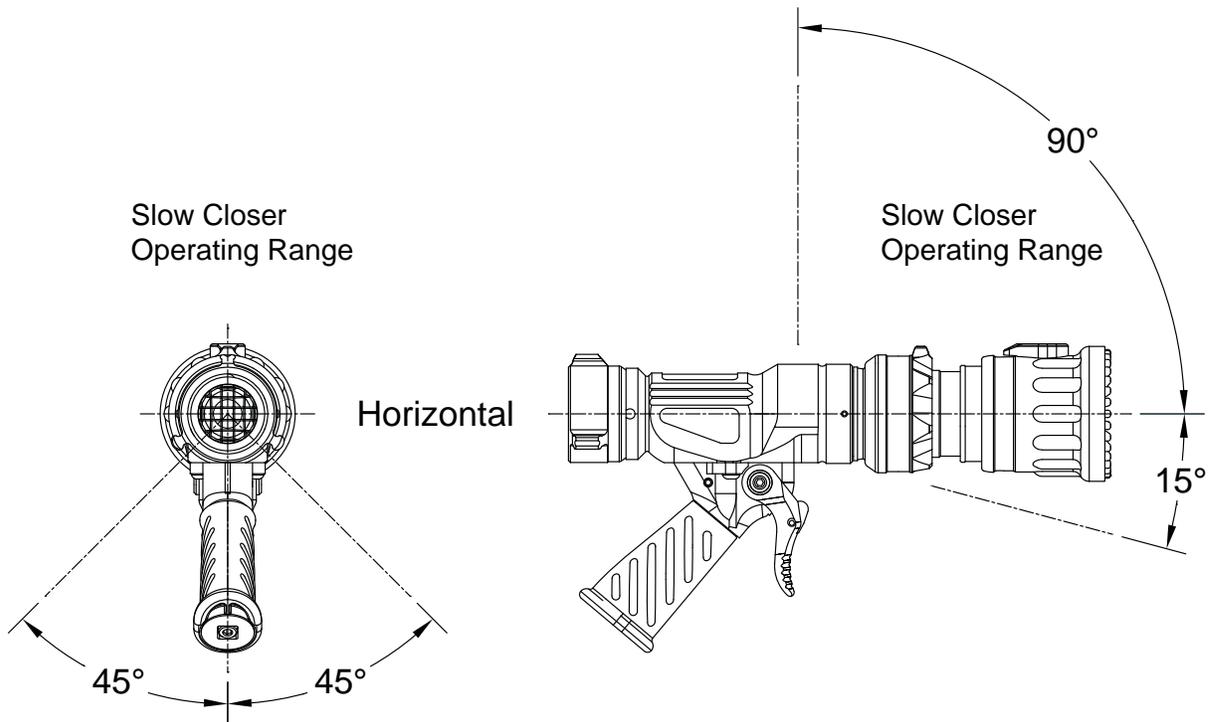


Do not unscrew the adjuster past the end of the hand grip (to unscrew it too far could result in the loss of dampening fluid.)

▲WARNING

As the closing time is increased so does the risk of injury from an out of control nozzle. A flowing nozzle can cause injury within the first second of lost control. Use caution when adjusting the closing speed and always verify performance after adjustment.

5.1.5.3 NORMAL OPERATING POSITION



⚠ WARNING

The Slow Close Feature relies on a fluid and air combination in the pistol grip. For proper function, the pistol grip should be within its normal operating position. The normal operating position is with the nozzle horizontal or pointing up with the pistol grip within 45 degrees of vertical. Releasing the trigger suddenly outside of the normal orientation will likely result in faster shut-off causing a higher pressure spike and increasing the risk of a burst hose. Do not suddenly release the trigger when operating outside of the nozzle's normal orientation.

5.2 PATTERN AND FLUSH CONTROL

5.2.1 PATTERN CONTROL

TFT's nozzles have full pattern control from straight stream to wide fog. Turning the stream shaper clockwise (as seen from the operating position behind the nozzle) moves the shaper to the straight stream position. Turning the shaper counterclockwise will result in an increasingly wider pattern.

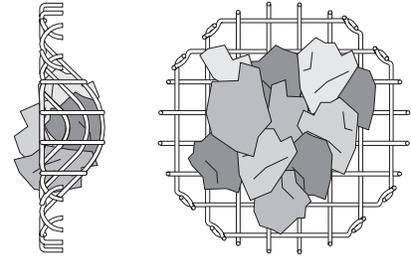
Since the stream trim point varies with flow, the stream should be "trimmed" after changing the flow to obtain the straightest and farthest reaching stream. To properly trim the stream, first open the pattern to narrow fog. Then close the stream to parallel to give maximum reach. **Note: Turning the shaper further forward will cause stream crossover and reduce the effective reach of the nozzle.**

The nozzle reaction is greatest when the shaper is in the straight stream position. The nozzle operator must be prepared for a change in reaction as the pattern is changed.

5.2.2 FLUSH CONTROL

Small debris passes through the debris screen (if equipped) and may get caught inside the nozzle. This trapped material will cause poor stream quality, shortened reach, and reduced flow. To remove small debris, the nozzle may be flushed as follows:

- While still flowing water, rotate the SHAPER counterclockwise (as viewed from behind the nozzle) to the flush position. (increased resistance will be felt on the SHAPER or RING as the nozzle goes into flush) This will open the nozzle allowing debris to pass through.
- During flush the nozzle reaction will decrease as the pattern becomes wider and the pressure drops. The nozzle operator must be prepared for an increase of nozzle reaction when returning the nozzle from the flush position to retain control of the nozzle.
- Rotate the SHAPER out of flush to continue normal operations.

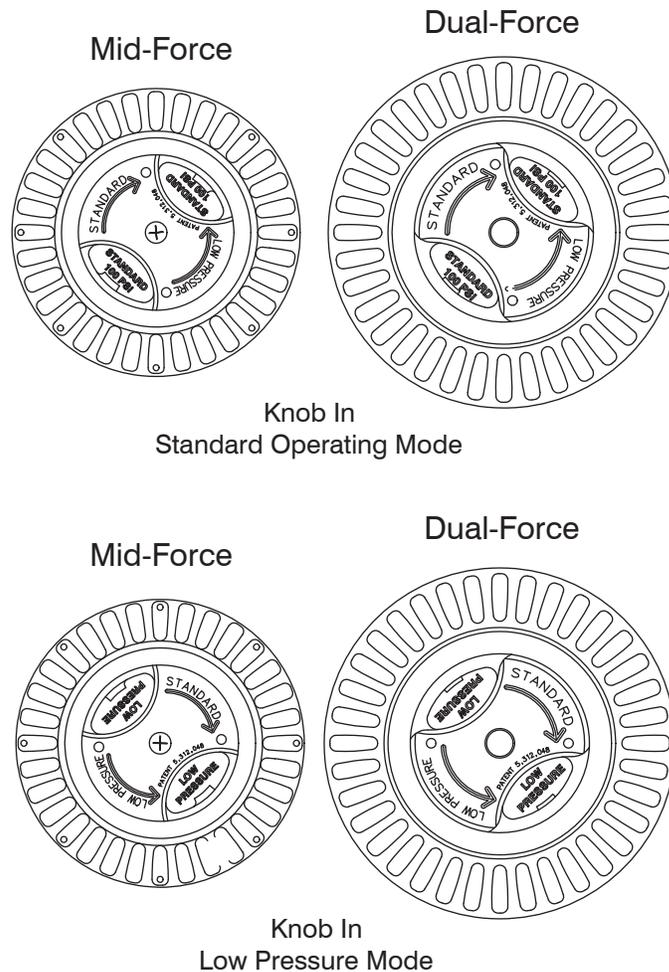


WARNING Large amounts or pieces of debris may be unflushable and can reduce the flow of the nozzle resulting in an ineffective flow. In the event of a blockage, it may be necessary to retreat to a safe area, uncouple the nozzle and remove debris.

5.3 STANDARD/LOW PRESSURE KNOB MID-FORCE & DUAL-FORCE

For situations where the standard pressure setting at the nozzle is impractical, the MID-FORCE or DUAL-FORCE may be switched to a low pressure mode. In the low pressure mode the nozzle pressure is reduced by about 50% while maintaining a usable stream and increasing the flow. The nozzle operator must be prepared for a change in reaction when changing modes. See the flow chart in section 4.2 for actual performance.

To switch to the low pressure mode, shut off water flow with valve and turn knob at front of nozzle (see figure 4) counterclockwise (when viewed from front). Reopen valve to flow water at reduced pressure. Repeat the process, except turn knob clockwise, to return to standard pressure operation



6.0 USE WITH FOAM

The nozzle may be used with foam solutions. Refer to fire service training for the proper use of foam.

⚠ WARNING

For Class B fires, lack of foam or interruption in the foam stream can cause a break in the foam blanket and greatly increase the risk of injury or death.

Assure that:

- Application rate is sufficient (see NFPA 11 or foam manufacturer's recommendations)
- Enough concentrate is on hand to complete task (see NFPA for minimum duration time requirements)
- Foam logistics have been carefully planned.

Allow for such things as:

- Storage of foam in a location not exposed to the hazard it protects
- Personnel, equipment and technique to deliver foam at a rapid enough rate
- Removal of empty foam containers
- Clear path to deliver foam, as hoses and other equipment and vehicles are deployed

⚠ WARNING

Improper use of foam can result in injury or damage to the environment. Follow foam manufacturer's instructions and fire service training to avoid:

- Using wrong type of foam on a fire, i.e. Class A foam on a Class B fire
- Plunging foam into pools of burning liquid fuels
- Causing environmental damage
- Directing stream at personnel

⚠ WARNING

There are a wide variety of foam concentrates. Each user is responsible for verifying that any foam concentrate chosen to be used with this unit has been tested to assure that the foam obtained is suitable for the purpose intended.

⚠ WARNING

Use of compressed air foam (CAF) with hand held nozzles can cause sudden surges in nozzle reaction force resulting in risk of injury or death from loss of footing or hose whipping. Be prepared for sudden changes in nozzle reaction caused by:

- Slug loading (Loss of foam concentrate sends slugs of air and water into the nozzle)
- Sudden release of built-up pressure in the hose when opening a nozzle

6.1 FOAM ASPIRATING ATTACHMENTS

Multi-expansion or low expansion aspirating attachments may be used with nozzles to increase the expansion ratio. These foam tubes attach and detach quickly from the nozzle. As expansion ratio is increased, the reach of the nozzle will be decreased due to the greater amount of bubbles in the stream and their ability to penetrate the air. Generally the straight stream reach with foam is approximately 10% less than with water only. Actual results will vary based on brand of foam, hardness of water, temperature, etc. For specific information, see LIA-025 (MANUAL: Foam Attachments for TFT Nozzles).

7.0 USE OF NOZZLES

7.1 MID-FORCE AND DUAL-FORCE NOZZLES

Many factors contribute to the extinguishment of a fire. Among the most important is delivering water at a flow rate sufficient to absorb heat faster than it is being generated. The flow rate depends largely on the pump discharge pressure and hose friction loss. It can be calculated using a hydraulic equation such as:

$$PDP = NP + FL + DL + EL$$

PDP = Pump discharge pressure in PSI

NP = Nozzle pressure in PSI

FL = Hose friction loss in PSI

DL = Device loss in PSI

EL = Elevation loss in PSI

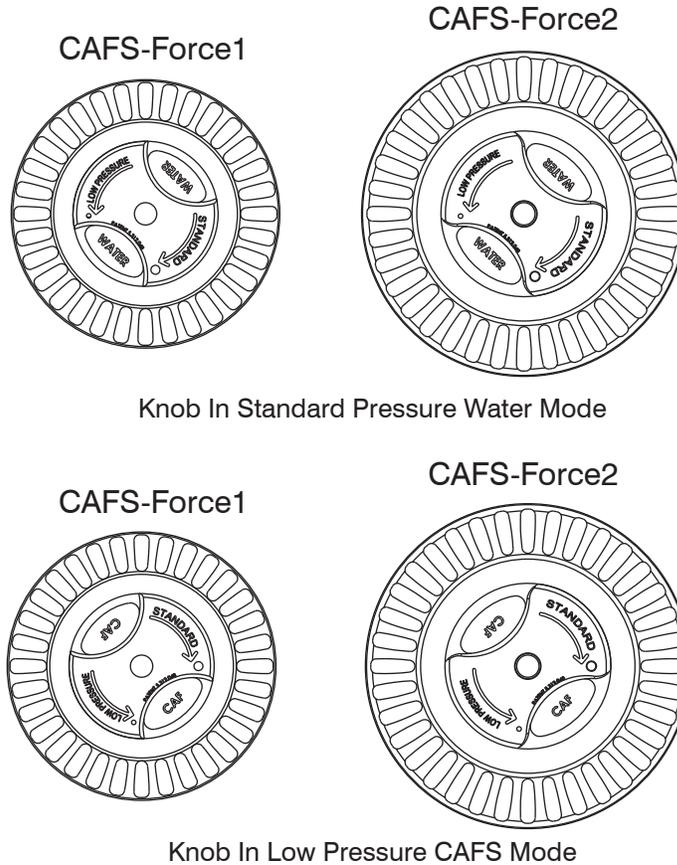
This manual is not intended to act as a training guide for safe fireground tactics and operations. For additional information visit www/tft.com or contact customer service at 800-348-2686.

IT IS THE RESPONSIBILITY OF THE INDIVIDUAL FIRE DEPARTMENT OR AGENCY TO DETERMINE PHYSICAL CAPABILITIES AND SUITABILITY FOR AN INDIVIDUAL'S USE OF THIS EQUIPMENT.

7.2 CAFS-FORCE 1 AND CAFS-FORCE 2 NOZZLES

The CAFS-FORCE 1 and CAFS-FORCE 2 nozzles are optimized for use with compressed air foam systems, CAFS. They have a streamlined flow path with no gasket grabber. The CAFS-FORCE nozzles have two settings: Standard pressure/Water and Low Pressure/CAFS. The CAFS-FORCE tip can be removed to use the valve as a smoothbore. See Section 4.0 Flow Characteristics for CAFS-FORCE Nozzle flow characteristics.

Hose handling techniques with compressed air foam (CAF) differ considerably from liquid filled hoses as a result of the added energy stored by pressurized air. The authority having jurisdiction must establish safe CAF operational procedures and insure appropriate training.



WARNING

Use of compressed air foam (CAF) with hand held nozzles can cause sudden surges in nozzle reaction force resulting in risk of injury or death from loss of footing or hose whipping. Be prepared for sudden changes in nozzle reaction caused by:
Slug loading (Loss of foam concentrate sends slugs of air and water into the nozzle)
Sudden release of built-up pressure in the hose when opening a nozzle

8.0 APPROVALS

Many nozzle configurations carry the FM Approval rating, NFPA certification, or EN certification.

9.0 COLOR CODED VALVE HANDLE AND PISTOL GRIP

The TFT nozzle with lever type valve handles are supplied with black valve handle covers and pistol grips. The handle covers and pistol grips are available from TFT in various colors for those departments wishing to color code the nozzle to the discharge controls. A colored handle cover set will be sent upon receipt of the warranty card by TFT. Your department's name can also be engraved on the covers (see warranty card for more information).

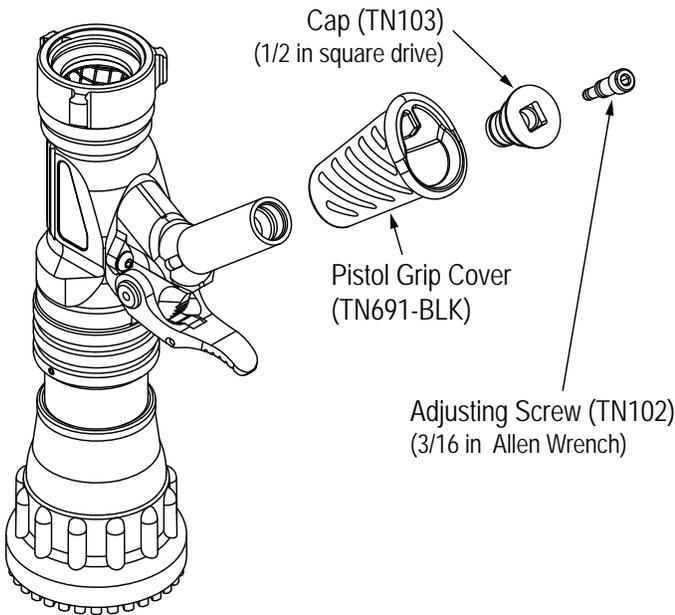
Handle covers are replaceable by removing the four screws that hold the handle covers in place. Use a 3/32" Allen wrench when replacing screws. Pistol grip is replaceable by following TFT instruction sheet LTT-108 for standard grips or LTT-115 for Trigger Controlled Valves.

For standardization NFPA 1901 (A-4-9.3) recommends the following color code scheme:

Preconnect #1 or Bumper Jump Line	Orange	Other Colors Available:
Preconnect or discharge #2	Red	• Gray
Preconnect or discharge #3	Yellow	• Pink
Preconnect or discharge #4	White	• Purple
Preconnect or discharge #5	Blue	• Tan
Preconnect or discharge #6	Black	
Preconnect or discharge #7	Green	
Foam Lines	Red w/ White border (Red/White)	

9.1 IMPULSE TRIGGER VALVE SYSTEM NOZZLE COLORED PISTOL GRIPS

The TFT Impulse Trigger Valve System nozzles are supplied with black pistol grip covers. The pistol grip covers are available from TFT in various colors for those departments wishing to color code the nozzle to the discharge controls. Follow the steps below to change the pistol grip cover.



- 1) Orient nozzle vertically. This keeps the dampening fluid in the pistol grip from spilling out.
- 2) Remove the Cap. (1/2 in square drive) The Adjusting Screw (3/16 in Allen Wrench) may need to be turned in or removed to be able to engage the square pocket in the cap. Note the position of the Adjusting Screw before moving it.
- 3) Slide off the Pistol Grip Cover and install a new one. Be sure the Pistol Grip Cover's internal rib is toward the back of the nozzle.
- 4) Reinstall the Cap until it bottoms out on its shoulder.
- 5) Reinstall or reposition the Adjusting Screw if it has been moved from its original location.
- 6) Flow nozzle to check performance of slow closer. Adjust as needed (see section 5.1.5.2).

10.0 WARRANTY

Task Force Tips, Inc., 3701 Innovation Way, Valparaiso, Indiana 46383-9327 ("TFT") warrants to the original purchaser of its nozzles and other equipment ("equipment"), and to anyone to whom it is transferred, that the equipment shall be free from defects in material and workmanship during the five (5) year period from the date of purchase.

TFT's obligation under this warranty is specifically limited to replacing or repairing the equipment (or its parts) which are shown by TFT's examination to be in a defective condition attributable to TFT. To qualify for this limited warranty, the claimant must return the equipment to TFT, at 3701 Innovation Way, Valparaiso, Indiana 46383-9327, within a reasonable time after discovery of the defect. TFT will examine the equipment. If TFT determines that there is a defect attributable to it, TFT will correct the problem within a reasonable time. If the equipment is covered by this limited warranty, TFT will assume the expenses of repair.

If any defect attributable to TFT under this limited warranty cannot be reasonably cured by repair or replacement, TFT may elect to refund the purchase price of the equipment, less reasonable depreciation, in complete discharge of its obligations under this limited warranty. If TFT makes this election, claimant shall return the equipment to TFT free and clear of any liens and encumbrances.

This is a limited warranty. The original purchaser of the equipment, any person to whom it is transferred, and any person who is an intended or unintended beneficiary of the equipment, shall not be entitled to recover from TFT any consequential or incidental damages for injury to person and/or property resulting from any defective equipment manufactured or assembled by TFT. It is agreed and understood that the price stated for the equipment is in part consideration for limiting TFT's liability. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above may not apply to you.

TFT shall have no obligation under this limited warranty if the equipment is, or has been, misused or neglected (including failure to provide reasonable maintenance) or if there have been accidents to the equipment or if it has been repaired or altered by someone else.

THIS IS A LIMITED EXPRESS WARRANTY ONLY. TFT EXPRESSLY DISCLAIMS WITH RESPECT TO THE EQUIPMENT ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND ALL IMPLIED WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE. THERE IS NO WARRANTY OF ANY NATURE MADE BY TFT BEYOND THAT STATED IN THIS DOCUMENT.

This limited warranty gives you specific legal rights, and you may also have other rights which vary from state to state

11.0 MAINTENANCE

TFT nozzles are designed and manufactured to be damage resistant and require minimal maintenance. However, as the primary firefighting tool upon which your life depends, it should be treated accordingly. Do not drop or throw equipment.

11.1 FIELD LUBRICATION

All Task Force Tip nozzles are factory lubricated with high quality silicone grease. This lubricant has excellent washout resistance and long term performance. If your department has unusually hard or sandy water, the moving parts may be affected. Foam agents and water additives contain soaps and chemicals that may break down the factory lubrication.

The moving parts of the nozzle should be checked on a regular basis for smooth and free operation, and signs of damage. IF THE NOZZLE IS OPERATING CORRECTLY, THEN NO ADDITIONAL LUBRICATION IS NEEDED. Any nozzle that is not operating correctly should be immediately removed from service.

The field use of Break Free CLP (spray or liquid) lubricant will help to restore the smooth and free operation of the nozzle. However, these lubricants do not have the washout resistance and long-term performance of the silicone grease. Therefore, re-application of Break Free CLP will be needed on a regular basis. CAUTION: Aerosol lubricants contain solvents that can swell O-Rings if applied in excess. The swelling can inhibit smooth operation of the moving parts. When used in moderation, as directed, the solvents quickly evaporate without adversely swelling the O-Rings.

The nozzle can be returned to the factory for a complete checkup and re-lubrication with silicone grease

PART ONE — COUPLING DOWN

Position the nozzle at a 45-degree angle with the COUPLING end down. CLOSE the valve handle and set the pattern to STRAIGHT STREAM. Then spray a short burst into these areas:

#1 FRONT PATTERN CONTROL SEAL

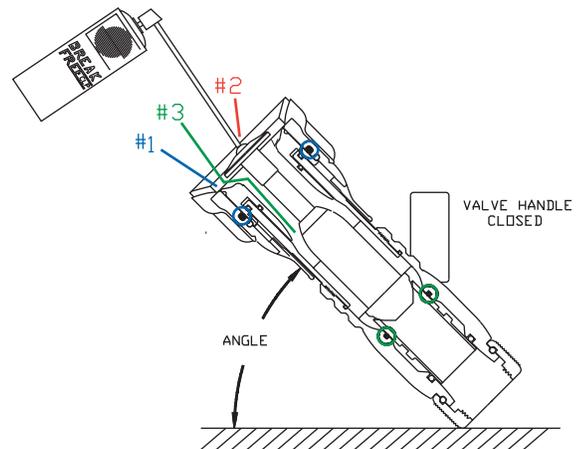
Spray in between the pattern control and the barrel.

#2 PRESSURE CONTROL UNIT

Place check sticks behind baffle while shaper is in flush. Cycle baffle in and out using check sticks several times to work lubrication into o-rings.

#3 FRONT SLIDER SEAL

- Rotate shaper into FLUSH position.
- Spray down the front end of the nozzle to dribble lubricant into the clearances between the shaper and the valve body.



While holding nozzle at the angle, wait 30 seconds for the lubricant to penetrate into the clearances. Cycle the valve handle and rotate the shaper from straight stream to full flush several times, and then proceed to the next section.

PART TWO — COUPLING UP

Position the nozzle at a 45-degree angle with the BUMPER end down. OPEN the valve handle and set the pattern to FLUSH. Spray a short burst in these areas:

#4 REAR SHAPER SEAL

Spray down the clearance between the label and the shaper guide.

#5 REAR SLIDER SEAL

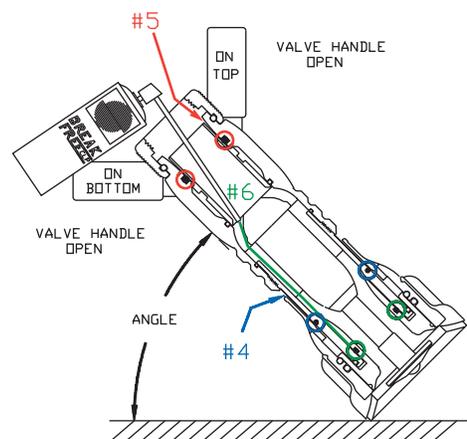
Spray into the clearance between the slider and the valve body.

#6 FLUSH MECHANISM SEAL

- With the handle on the top, spray down into the nozzle. The aerosol extension tip will help direct the spray into clearances leading to the O-Ring.
- Rotate nozzle so the valve is on the bottom and spray another short burst.

#7 DETENTS IN THE HANDLE

Spray a small amount on the detent followers located in the handle.

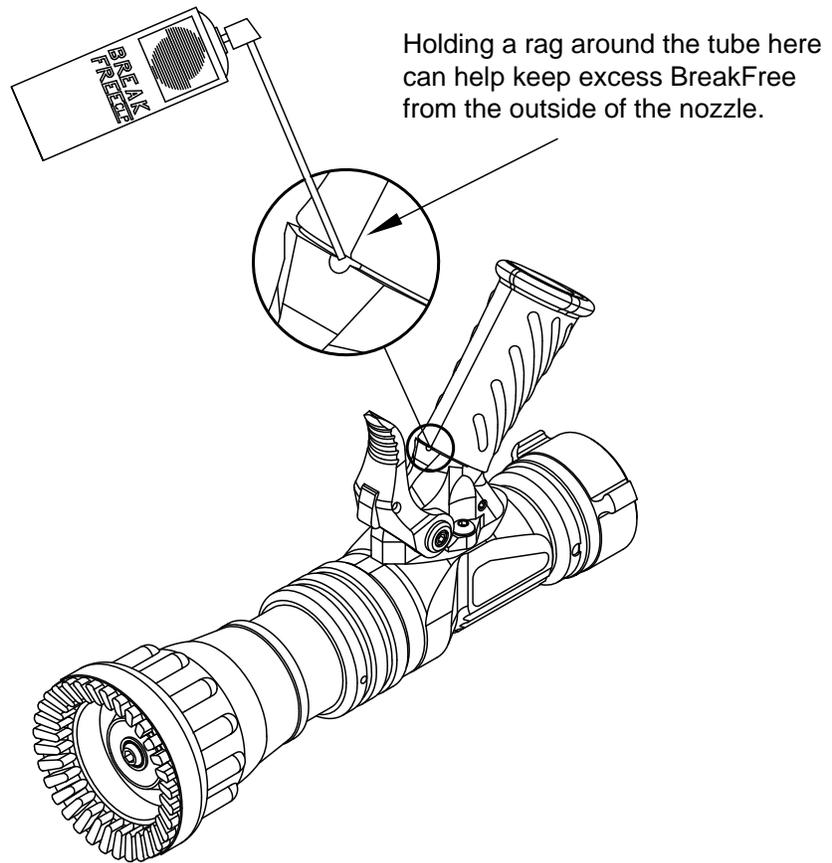


While holding nozzle at the angle, wait 30 seconds, then cycle the valve handle several times. Rotate the pattern control from straight stream to full flush several times. The pattern control should move freely and easily. The barrel cone should move forward to within 1/16" of the baffle before the shaper reaches straight stream position. Wipe off excess lubricant.

IF THIS PROCEDURE DOES NOT RESTORE SMOOTH AND FREE OPERATION OF ALL THE MOVING PARTS, THEN FACTORY SERVICE IS NEEDED. • 24-HOUR HOT LINE — 800-348-2686 • www.tft.com

11.2 IMPULSE TRIGGER VALVE LUBRICATION

- 1) Insert tube from BreakFree into drain hole in pistol grip.
- 2) With nozzle upside down spray a 2 second burst into the pistol grip. Holding a rag around the tube here can help keep excess BreakFree from the outside of the nozzle.
- 3) Keep nozzle upside down for at least 10 seconds to allow the BreakFree to flow into the valve area.
- 4) Check for smooth and free operation of the trigger. Repeat a second time if needed.



**If this procedure does not restore trigger operation then factory service is needed.
24 hour Technical Service and Support - 800-348-2686 - www.tft.com**

11.3 SERVICE TESTING

In accordance with NFPA 1962 (2013), nozzles must be tested a minimum of annually. Nozzles failing any part of this test must be removed from service, repaired and retested upon completion of the repair.

11.3.1 HYDROSTATIC TESTING

Each nozzle with a shut off mechanism shall be tested in the following manner.

- 1. The nozzle shall be placed in a device capable of holding it and the shut off shall be closed.*
- 2. A device capable of exerting a hydrostatic pressure of 300 psi (2070 kPa) or 1.5 times the maximum operating pressure, whichever is higher, shall be attached to the nozzle.*
- 3. All air shall be bled from the system.*
- 4. The gage pressure shall be increased by 50 psi (3.5 bar or 345 kPa) increments, held for 30 seconds at each pressure up to the maximum pressure for which the nozzle is being tested, and then held for one minute without leakage.*
- 5. There shall be no sign of leakage through the valve or shut off.*

11.3.2 FLOW TESTING

Flow testing must be conducted in the following manner.

- 1. The nozzle shall be mounted so that the flow rate and pressure through the nozzle and the pressure at the inlet can be accurately measured.*
- 2. With the shut off fully open, the inlet pressure shall be adjusted to the rated pressure ± 2 percent.*
- 3. The valve or shut off and pattern controls shall be operated through their full range of motion at 100 psi (6.9 bar or 690 kPa) with no signs of leaking, binding or other problems.*
- 4. Evaluate the flow of nozzles as defined by NFPA 1964 in the following manner:*
 - Automatic (Constant Pressure) Spray Nozzles*
 - 1. The flow rate shall slowly be increased to the maximum rated flow, and the minimum and maximum pressures through the flow range recorded.*
 - 2. Nozzles shall maintain their rated pressure ± 15 psi (± 1 bar or ± 100 kPa) throughout the rated flow range.*

11.3.3 RECORDS

A record of testing and repairs must be maintained from the time the nozzle is purchased until it is discarded. Each TFT nozzle is engraved with a unique serial number which, if so desired, can be used to identify nozzle for documentation purposes.

The following information, if applicable, must be included on the test record for each nozzle:

- 1. Assigned identification number*
- 2. Manufacturer*
- 3. Product or model designation*
- 4. Vendor*
- 5. Warranty*
- 6. Hose connection size*
- 7. Maximum operating pressure*
- 8. Flow rate or range*
- 9. Date received and date put in service*
- 10. Date of each service test and service test results*
- 11. Damage and repairs, including who made the repairs and the cost of repair parts*
- 12. Reason removed from service*

NFPA 1962: Standard for the care, use, inspection, service testing, and replacement of fire hose, couplings, nozzles and fire hose appliances. (2013 ed., Section 5.5.4). Quincy, MA: National Fire Protection Agency.

11.4 REPAIR

Factory service is available with repair time seldom exceeding one day in our facility. Factory-serviced nozzles are repaired by experienced technicians, wet tested to original specifications, and promptly returned. Repair charges for non-warranty items are minimal. Any returns should include a note as to the nature of the problem and whom to reach in case of questions.

Repair parts and service procedures are available for those wishing to perform their own repairs. Task Force Tips assumes no liability for damage to equipment or injury to personnel that is a result of user service. Contact the factory or visit the web site at www.tft.com for parts lists, exploded views, test procedures and troubleshooting guides.

Performance tests shall be conducted on the nozzle after a repair, or anytime a problem is reported to verify operation in accordance with TFT test procedures. Consult factory for the procedure that corresponds to the model and serial number of the nozzle. Any equipment which fails the related test criteria should be removed from service immediately. Troubleshooting guides are available with each test procedure or equipment can be returned to the factory for service and testing.



Any alterations to the nozzle and its markings could diminish safety and constitutes a misuse of this product.

12.0 OPERATION AND INSPECTION CHECKLIST

BEFORE EACH USE the nozzle must be inspected to this checklist:

- 1) There is no obvious damage such as missing, broken or loose parts, damaged labels etc.
- 2) Debris screen is free of debris
- 3) Coupling is tight and leak free
- 4) Valve operates freely through full range and regulates flow
- 5) "OFF" position does fully shut off and flow is stopped
- 6) Nozzle flow is adequate as indicated by pump pressure and nozzle reaction
- 7) Shaper turns freely and adjusts pattern through full range
- 8) Shaper turns into full flush and out of flush with normal flow and pressure restored
- 9) Shaper detent (if so equipped) operates smoothly and positively.

BEFORE BEING PLACED BACK IN SERVICE, nozzles must be inspected to this checklist;

- 1) *All controls and adjustments are operational*
- 2) *Shut off valve (if so equipped) closes off the flow completely*
- 3) *There are no broken or missing parts*
- 4) *There is no damage to the nozzle that could impair safe operation (e.g. dents, cracks, corrosion or other defects)*
- 5) *The thread gasket is in good condition*
- 6) *The waterway is clear of obstructions*
- 7) *Nozzle is clean and markings are legible*
- 8) *Coupling is retightened properly*
- 9) *Shaper is set to desired pattern*
- 10) *Shutoff handle is stored in the OFF position*

NFPA 1962: Standard for the care, use, inspection, service testing, and replacement of fire hose, couplings, nozzles and fire hose appliances. (2013 ed., Section 5.2.2). Quincy, MA: National Fire Protection Agency.



Any nozzle failing any part of the checklist is unsafe for use and must have the problem corrected before use or being placed back into service. Operating a nozzle that has failed the checklist is a misuse of this equipment.

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