



# MANUAL: Hand Held Automatic Dual Pressure Nozzles

## Mid-Force<sup>®</sup> and Dual-Force<sup>®</sup> INSTRUCTIONS FOR SAFE OPERATION AND MAINTENANCE

### ⚠ WARNING

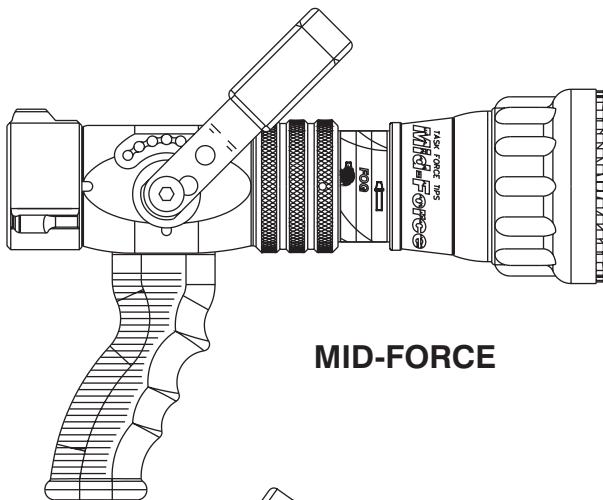
Read instruction manual before use. Operation of this nozzle without understanding the manual and receiving proper training can be dangerous and is a misuse of this equipment. Call 800-348-2686 with any questions.

### ⚠ WARNING

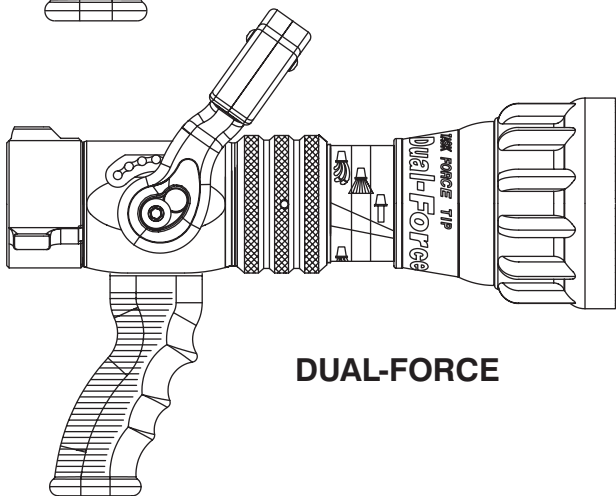
This instruction manual is intended to familiarize firefighters and maintenance personnel with the operation, servicing and safety procedures associated with the Mid-Force and Dual-Force fire fighting nozzles.

### ⚠ WARNING

This manual should be kept available to all operating and maintenance personnel.



MID-FORCE



DUAL-FORCE

### ⚠ 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 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 Services Association, Inc.  
P.O. Box 147, Lynnfield, MA 01940 • www.FEMSA.org

**TASK FORCE TIPS, Inc.**  
Made in USA • www.tft.com

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800-348-2686 • 219-462-6161 • Fax 219-464-7155

# 1.0 GENERAL INFORMATION

The Task Force Tips MID-FORCE and DUAL-FORCE nozzles are designed to provide excellent performance under most fire fighting conditions. Their rugged construction is compatible with the use of fresh water (see section 5.0 for saltwater use) as well as fire fighting foam solutions. Other important operating features are:

- Switchable from standard operation to low pressure
- Automatic pressure regulation at (meets NFPA 1964 automatic nozzle pressure requirements)
- Slide valve with valve handle detent flow control 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

# 1.1 VARIOUS MODELS AND TERMS

The TFT MID-FORCE and DUAL-FORCE nozzles are available in several different models. Some common models and operating features are shown in figure 1.

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	95-250	360-950	75	5	1-1/2 NH

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

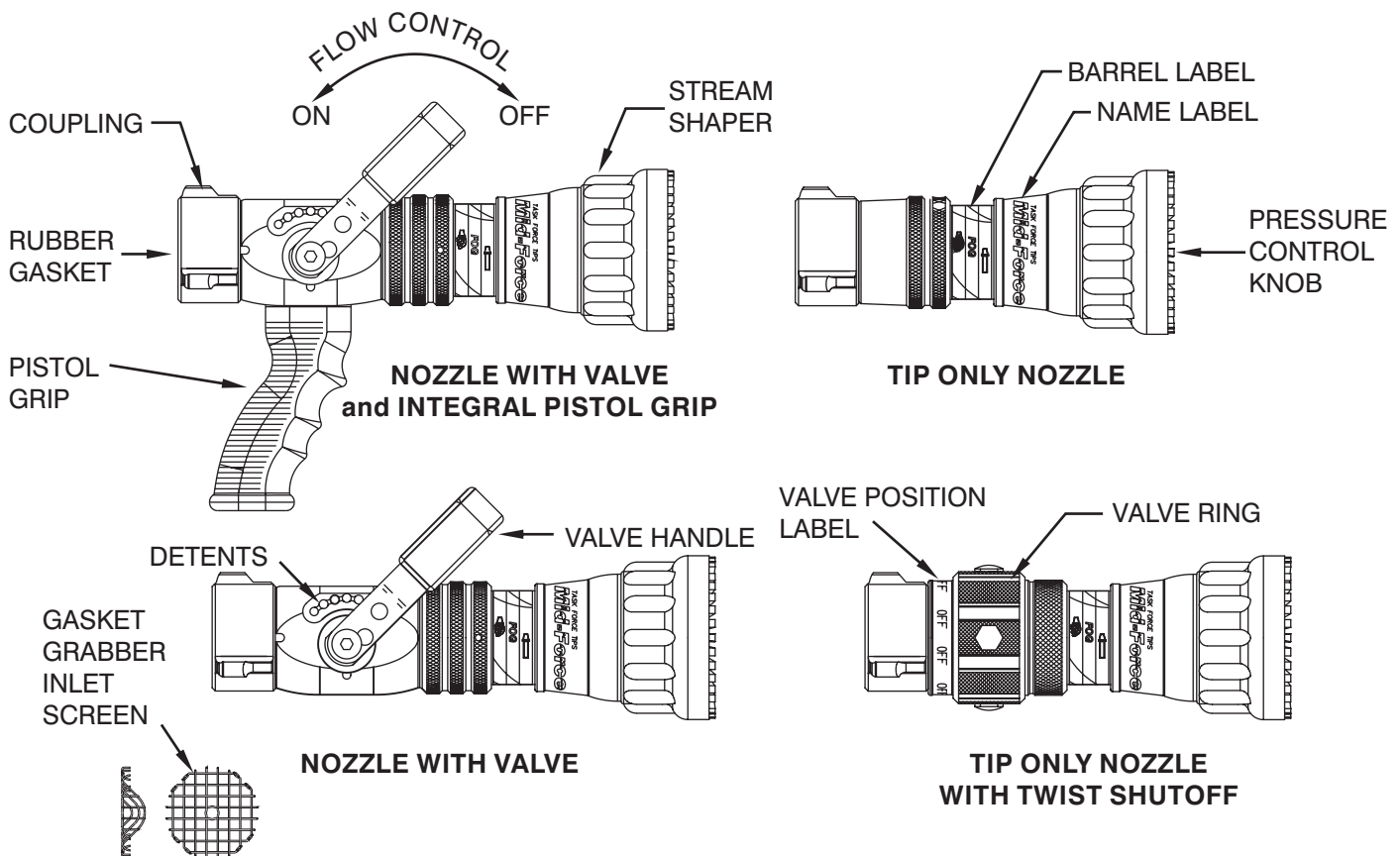


FIGURE 1 - COMMON MODELS AND TERMS

## 1.2 COLOR CODED VALVE HANDLE COVERS

The TFT MID-FORCE and DUAL-FORCE with lever type valve handles are supplied with black valve handle covers. The handle covers 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.

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

Preconnect #1 or Bumper Jump Line	Orange	Preconnect or discharge #5	Blue
Preconnect or discharge #2	Red	Preconnect or discharge #6	Black
Preconnect or discharge #3	Yellow	Preconnect or discharge #7	Green
Preconnect or discharge #4	White	Foam Lines	Red w/ White border (Red/White)

## 1.3 NOZZLE COUPLING

Rocker lug 1-1/2" NH full-time swivel is standard on models with lever type flow control. The coupling is the same on other models except it does not swivel. Other threads such as 1-1/2" NPSH can be specified at time of order.

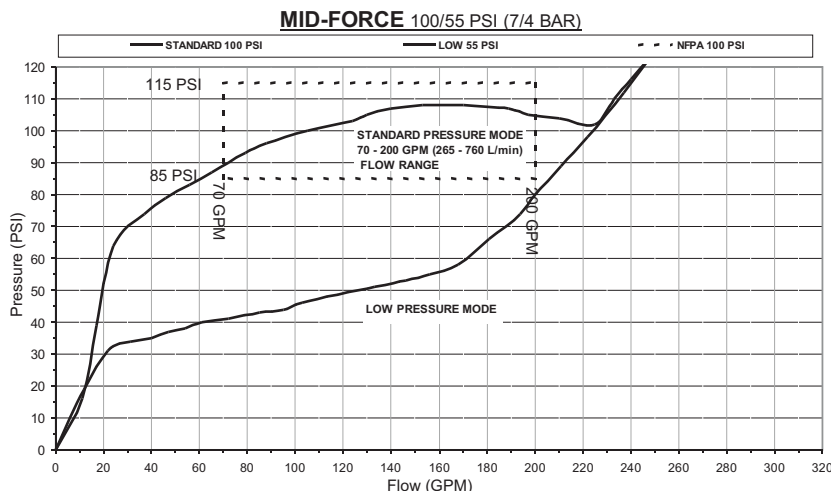


**Nozzle must be mated to a hose line with matched threads. Mismatched or damaged threads may cause nozzle to leak or uncouple from hose under pressure and could cause injury.**

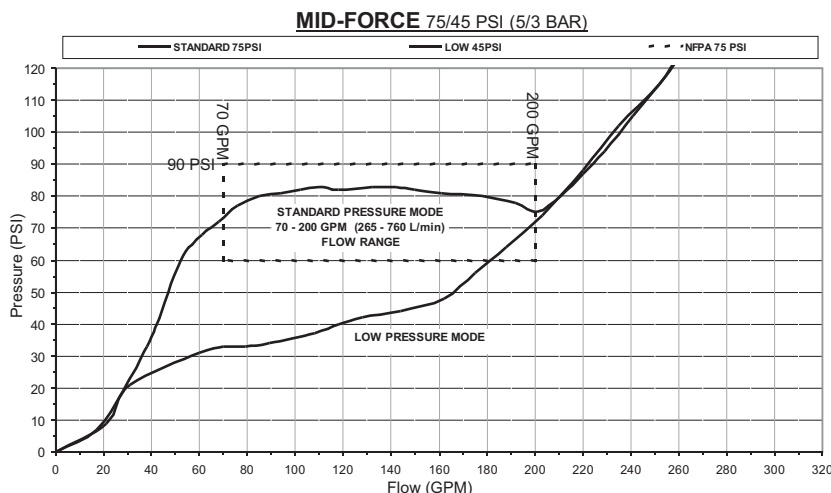
## 2.0 FLOW CHARACTERISTICS

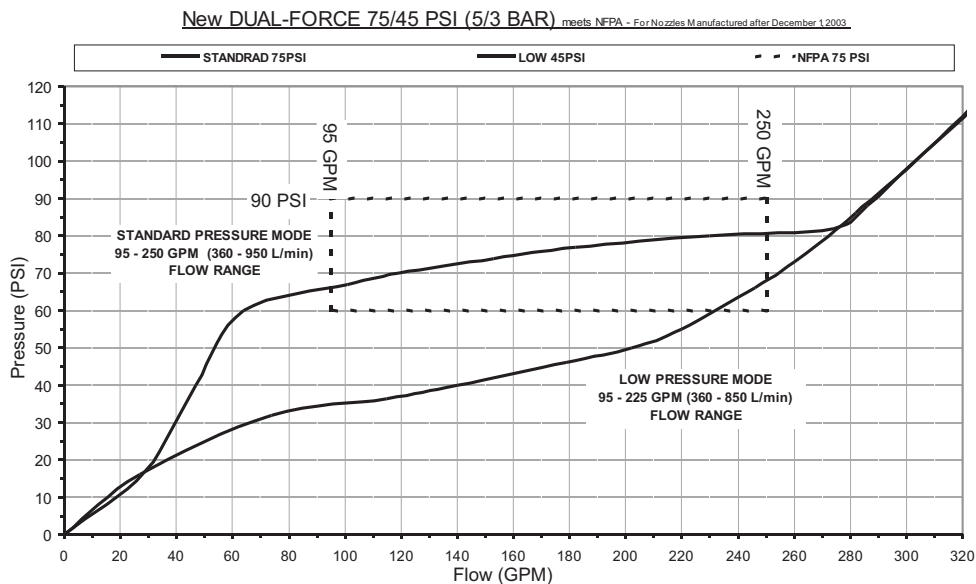
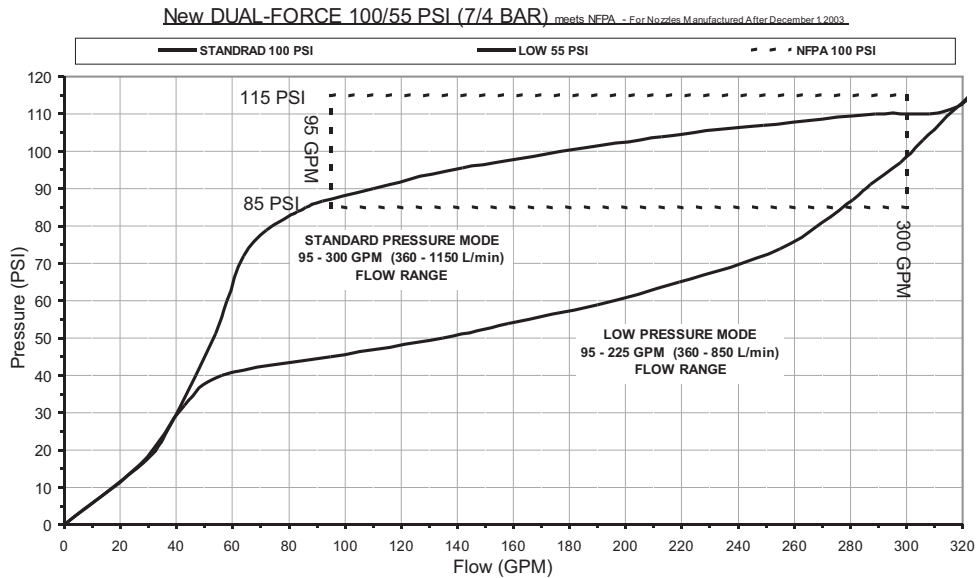
The graphs in figure 2 show the typical performance of MID-FORCE and DUAL-FORCE nozzles.

**Mid-Force** meets NFPA flow requirements.



The charts in section 8.0 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 PSI when used in the standard pressure mode.**





**FIGURE 2 - NOZZLE PERFORMANCE**



*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 chart in section 8.0 or call 800-348-2686 for assistance.*



*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, flushing, or pressure control knob will also affect nozzle reaction. The nozzle operator must always be positioned to restrain the nozzle reaction in the event of those changes.*



*Injury from whipping can occur. 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.*



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

### 3.0 NOZZLE CONTROLS

#### 3.1 FLOW CONTROL

##### 3.1.1 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 six detent 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.

##### 3.1.2 TWIST SHUTTOFF

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.

##### 3.1.3 TIP ONLY NOZZLES

Tip only nozzles have NO shut off valve contained within the nozzle and **MUST** be used with a separate ball valve attached to the nozzle.

#### 3.2 PATTERN AND FLUSH CONTROL

##### 3.2.1 PATTERN CONTROL

The TFT's MID-FORCE and DUAL-FORCE 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 the flow, the stream should be "trimmed" after changing the flow to obtain the straightest and farthest reaching stream. To properly trim a stream, first open the pattern to a 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.**

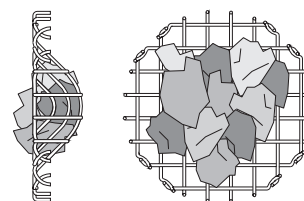
The nozzle reaction is greatest when the shaper is in the straight stream position. The nozzle operator must be prepared for a change in reaction as the pattern is changed.

##### 3.2.2 FLUSH CONTROL

Small debris passes through the gasket grabber and may get caught inside the nozzle. This trapped material will cause poor stream quality, shortened reach and reduced flow. To remove this trapped debris the nozzle can be flushed as follows; while still flowing water, turn the SHAPER counterclockwise past the full fog position (increased resistance will be felt on the SHAPER as the nozzle goes into flush). This will open the nozzle allowing debris to pass through. Rotate the SHAPER clockwise and out of flush to continue normal operation. 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.



**Large amounts of debris 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 nozzle and remove debris.**

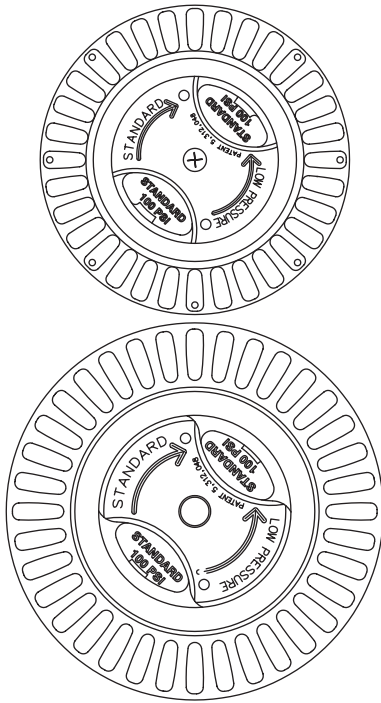


**FIGURE 3 - GASKET GRABBER**

#### 3.3 STANDARD/LOW PRESSURE KNOB

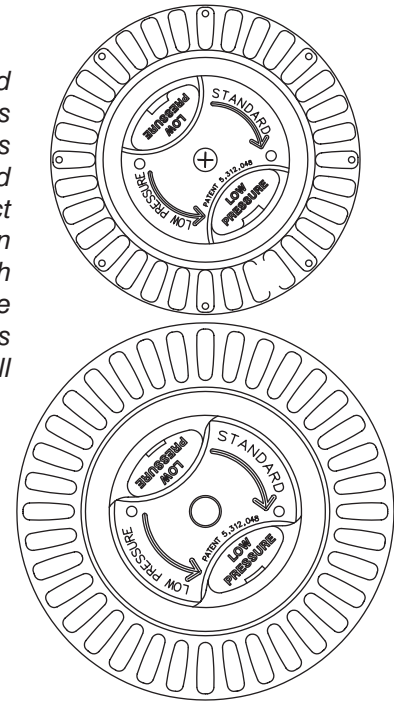
For situations where the standard pressure setting at the nozzle is impractical, the MID-FORCE or DUAL-FORCE may be switched to an low pressure mode. In the low pressure mode the nozzle pressure is reduced by about 50% while maintaining a usable stream and increasing the flow. The nozzle operator must be prepared for a change in reaction when changing modes. See figure 2 or the flow chart in section 8.0 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.



Knob In  
Standard Operating Mode

To obtain dual pressure capability, a knob is added to the front end of the baffle. This knob protrudes past the end of the nozzle when the shaper is rotated back. As a consequence, the knob and baffle may be damaged if subjected to impact such as from a drop. The knob and baffle portion of the nozzle does NOT meet NFPA 1964's rough usage requirement of a six foot drop onto concrete (paragraph 4-7.1). In the event of damage to this section the stream quality may be affected as well as nozzle pressure regulation.



Knob In  
Low Pressure Mode

FIGURE 4

## 4.0 USE OF 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. The pump discharge pressure may be found by use of the chart in section 8.0. It can also be calculated using a hydraulic equation such as:

**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.**

Within its flow range, the nozzle pressure (NP) of the MID-FORCE or DUAL-FORCE nozzle may be approximated as 100 or 75 PSI in the standard mode. For additional information on calculating specific hose layouts, consult an appropriate fire service training manual, *A Guide to Automatic Nozzles*, or call TFT's "Hydraulics Hotline" at 800-348-2686.

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

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

## 5.0 FIELD INSPECTION

TFT's MID-FORCE and DUAL-FORCE are designed and manufactured to be damage resistant and require minimal maintenance. However, as the primary fire fighting tools upon which your life depends, they should be treated accordingly. 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.



**Nozzle must be inspected for proper operation and function according to inspection checklist on the last page before each use. Any nozzle that fails inspection is dangerous to use and must be repaired before using.**

Performance tests shall be conducted on the Mid-Force and Dual-Force 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. Factory service is available with repair time seldom exceeding one day in our facility.

Factory serviced nozzles are repaired by experienced technicians to original specifications, fully tested and promptly returned. Any returns should include a note as to the nature of the problem, who to reach in case of questions and if a repair estimate is required.

Repair parts and service procedures are available for those wishing to perform their own repairs.

TFT Item#	Title
LHM-020	Mid-Matic & Mid-Force Service Procedure
LHD-020	Handline & Dual-Force Service Procedure



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

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 and the problem corrected.

## 6.0 WARRANTY

Task Force Tips, Inc., 2800 East Evans Avenue, Valparaiso, Indiana 46383 ("TFT") warrants to the original purchaser of its Dual-Force and Mid-Force 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 2800 East Evans Avenue, Valparaiso, Indiana 46383, 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.

## 7.0 ANSWERS TO YOUR QUESTIONS

We appreciate the opportunity of serving you and making your job easier. If you have any problems or questions, our toll-free "Hydraulics Hotline", 800-348-2686, is normally available to you 24 hours a day, 7 days a week.

8.0 NOZZLE FLOW CHARTS

# Mid-Force 100/55 PSI

## Flow And Nozzle Reaction Chart

**STD** = STANDARD PRESSURE MODE

**LP** = LOW PRESSURE MODE

FLOW (GPM)  
REACTION  
(LBS)

PUMP DISCHARGE PRESSURE (PSI)	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	67 32	129 45	63 29	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	97 48	152 56	91 44	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	125 63	174 66	114 57	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	151 78	192 76	136 70	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	175 91	207 86	157 81	189 75	---	---	---	---	222 113	---
225	183 94	209 87	158 82	186 72	142 73	168 63	---	---	198 102	221 96	176 91	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)



# MidForce 7/4 BAR

## Flow And Nozzle Reaction Chart

**7 bar** = STANDARD PRESSURE MODE

**LP** = LOW PRESSURE MODE

FLOW (LPM)  
REACTION  
(KG)

PUMP DISCHARGE PRESSURE (BAR)	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	7 bar	LP	7 bar	LP	7 bar	LP	7 bar	LP	7 bar	LP
<b>3.5</b>	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
<b>5.2</b>	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 7	535 23	130 7	485 20	130 7	450 19
<b>7.0</b>	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	285 16	580 25
<b>8.6</b>	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
<b>10.0</b>	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
<b>12.0</b>	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
<b>14.0</b>	615 38	740 35	535 33	655 30	485 30	590 26	770 48	---	660 41	785 39	595 37	715 34	---	---	---	---	840 51	---
<b>15.5</b>	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

## Flow And Nozzle Reaction Chart

**STD** = STANDARD PRESSURE MODE

**LP** = LOW PRESSURE MODE

FLOW (GPM)  
REACTION  
(LBS)

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

**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)

# MidForce 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	5 bar	LP	5 bar	LP	5 bar	LP	5 bar	LP	5 bar	LP	5 bar	LP	5 bar	LP	5 bar	LP
<b>3.5</b>	163 6	261 9	163 6	235 8	159 6	216 7	170 7	318 11	167 10	280 10	163 6	254 9	170 7	318 11	170 7	367 13	170 7	337 12
<b>5.2</b>	208 10	394 15	201 10	348 12	193 9	314 11	223 11	458 18	216 15	416 15	208 10	382 14	242 12	587 24	235 12	530 21	227 11	484 19
<b>7.0</b>	295 16	481 19	273 15	428 16	257 13	390 14	344 19	579 24	310 20	515 20	291 15	466 18	462 25	689 32	397 22	647 29	367 20	613 25
<b>8.6</b>	409 23	564 23	363 20	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
<b>10.0</b>	515 29	628 27	450 24	560 23	401 22	507 20	655 35	723 35	560 30	659 30	500 27	613 26	—	—	795 43	795 43	715 39	753 39
<b>12.0</b>	613 33	681 32	522 29	617 26	469 26	556 23	780 41	780 41	662 35	715 35	587 32	662 30	—	—	—	—	814 45	810 45
<b>14.0</b>	693 37	727 36	594 33	659 29	530 29	606 25	833 47	833 47	761 39	765 39	666 36	712 34	—	—	—	—	—	—
<b>15.5</b>	772 41	772 40	659 36	696 33	587 32	643 28	—	—	810 44	810 44	742 39	753 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

# DualForce 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	
<b>50</b>	48	54	47	50	62	49	56	48	53	51	76	51	70	50	65	53	107	53	102	53	107	53	102	53	97
	16	17	15	15	14	14	15	15	17	18	25	17	23	17	21	19	37	19	35	19	37	19	35	19	33
<b>75</b>	59	91	57	80	72	60	98	59	89	63	141	62	127	61	116	65	206	65	194	65	206	65	194	65	184
	23	31	22	27	21	24	33	23	30	27	51	26	45	25	40	28	82	28	76	28	82	28	76	28	71
<b>100</b>	74	118	69	104	65	94	128	73	116	99	185	91	166	86	452	135	265	128	254	128	265	128	254	122	242
	33	41	30	36	28	32	45	33	40	47	71	43	62	40	56	66	119	62	110	62	119	62	110	59	103
<b>125</b>	100	141	89	124	82	112	152	98	138	152	221	136	199	126	182	245	299	223	288	223	299	223	288	207	279
	47	51	42	44	38	39	56	46	50	76	90	67	78	61	70	128	149	115	139	115	149	115	139	106	130
<b>150</b>	124	160	110	141	100	128	174	122	157	198	252	176	227	160	208	328	326	312	315	312	326	312	315	283	306
	60	60	53	51	47	45	66	59	58	101	108	89	93	80	80	179	179	166	167	166	179	166	167	149	156
<b>175</b>	146	178	128	157	116	142	193	143	175	238	274	210	251	190	230	—	—	—	—	—	—	—	—	—	—
	72	68	63	58	56	51	75	71	66	124	126	108	108	97	95	—	—	—	—	—	—	—	—	—	—
<b>200</b>	165	194	145	171	131	154	210	162	190	273	294	240	270	217	250	—	—	—	—	—	—	—	—	—	—
	83	76	72	64	64	57	84	81	74	144	144	125	123	112	108	—	—	—	—	—	—	—	—	—	—
<b>225</b>	183	209	160	184	144	166	226	179	205	307	311	268	287	242	268	—	—	—	—	—	—	—	—	—	—
	93	84	80	71	71	62	93	91	81	163	163	141	138	126	121	—	—	—	—	—	—	—	—	—	—
<b>250</b>	199	223	174	196	157	177	241	195	218	329	328	293	303	264	283	—	—	—	—	—	—	—	—	—	—
	102	91	88	77	81	67	102	100	89	181	181	155	154	139	134	—	—	—	—	—	—	—	—	—	—

PUMP DISCHARGE PRESSURE (PSI)

**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 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
<b>3.5</b>	182	204	178	189	170	178	189	235	185	212	182	201	193	288	193	265	189	246	201	405	201	386	201	367
	7	8	6	7	6	6	8	9	7	8	7	8	8	11	8	10	8	10	9	17	9	16	9	15
<b>5.2</b>	223	344	212	303	212	273	231	416	227	371	223	337	238	534	235	481	231	439	246	780	246	734	246	696
	10	14	10	12	10	11	11	17	11	15	10	14	12	23	12	20	11	18	13	37	13	34	13	32
<b>7.0</b>	280	447	246	394	246	356	314	545	291	484	276	439	375	700	344	628	326	575	511	1003	484	961	462	916
	15	19	13	16	13	15	17	24	16	20	15	18	21	32	20	28	18	25	30	54	28	50	27	47
<b>8.6</b>	379	534	310	469	310	424	450	651	405	575	371	522	575	836	515	753	477	689	927	1132	844	1090	783	1056
	21	23	17	20	17	18	26	29	23	25	21	23	34	41	30	35	28	32	58	68	52	63	48	59
<b>10.0</b>	469	606	379	534	379	484	572	742	507	659	462	594	749	954	666	859	606	787	1241	1234	1181	1192	1071	1158
	27	27	21	23	21	20	34	35	30	30	27	26	46	49	40	42	36	38	81	81	75	76	68	71
<b>12.0</b>	553	674	439	594	439	537	678	821	598	731	541	662	901	1037	795	950	719	871	1287	1287	1287	1287	1253	1245
	33	31	25	26	25	23	41	40	36	34	32	30	56	57	49	49	44	43	88	88	88	88	83	83
<b>14.0</b>	625	734	496	647	496	583	772	897	678	795	613	719	1033	1113	908	1022	821	946	1287	1287	1287	1287	1253	1245
	38	34	29	29	29	26	48	45	41	38	37	34	65	65	57	56	51	49	88	88	88	88	83	83
<b>15.5</b>	693	791	545	696	545	628	859	965	753	855	678	776	1162	1177	1014	1086	916	1014	1287	1287	1287	1287	1253	1245
	42	38	32	32	32	28	53	50	46	42	41	37	74	74	64	63	57	55	88	88	88	88	83	83
<b>17.0</b>	753	844	594	742	594	670	939	1018	818	912	738	825	1245	1241	1109	1147	999	1071	1287	1287	1287	1287	1253	1245
	46	41	35	35	35	30	59	55	51	46	45	40	82	82	70	70	63	61	88	88	88	88	83	83

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
<b>50</b>	48	71	47	65	45	60	84	49	75	48	70	51	107	51	96	50	88	53	157	53	148	53	140	
	16	20	15	18	14	16	25	16	22	15	20	33	33	17	29	17	26	19	52	19	48	18	45	
<b>75</b>	64	104	60	91	58	82	126	67	112	63	101	88	162	81	145	76	133	123	230	116	221	111	212	
	25	31	23	27	22	24	39	26	34	25	30	36	54	33	47	31	42	52	89	49	83	46	77	
<b>100</b>	96	130	85	114	77	103	157	103	139	93	126	148	203	132	182	121	166	252	269	224	260	206	251	
	39	41	34	35	31	31	48	42	44	38	39	64	72	57	63	51	56	114	120	101	112	92	105	
<b>125</b>	122	151	108	133	98	120	149	131	162	119	147	197	232	173	212	158	194	300	300	290	290	282	281	
	52	49	45	42	40	37	64	56	54	50	48	88	90	76	77	69	68	150	150	140	140	131	131	
<b>150</b>	145	170	124	149	115	135	206	156	182	141	165	239	256	210	234	189	218	343	341	317	335	307	307	
	63	57	54	48	48	43	74	68	63	61	55	108	108	94	92	84	81	185	185	167	173	157	157	
<b>175</b>	165	187	144	164	130	148	225	178	201	160	182	276	276	242	255	217	236	356	355	349	348	343	342	
	72	65	62	55	56	48	86	79	71	70	63	127	127	109	108	98	94	210	209	198	197	186	186	
<b>200</b>	183	202	160	178	144	160	227	198	217	178	197	295	295	270	272	243	254	369	368	362	361	356	354	
	81	72	70	61	62	53	102	88	80	79	70	145	145	123	123	110	107	235	234	222	221	210	209	
<b>225</b>	200	216	174	190	157	172	249	216	231	195	211	312	313	289	288	266	269	---	---	---	373	368	367	
	89	80	77	66	68	58	113	97	90	87	77	163	163	138	138	121	120	---	---	245	245	232	232	
<b>250</b>	216	229	188	202	169	182	269	234	244	210	223	329	336	304	304	284	284	---	---	---	---	380	378	
	97	88	83	72	74	63	123	106	99	94	85	181	180	154	154	133	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

# DualForce 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	5 bar	LP	5 bar	LP	5 bar	LP
<b>3.5</b>	182	269	178	246	170	227	189	318	185	284	182	265	193	405	193	363	189	333	201	594	201	560	201	530
	7	8	7	8	6	7	8	11	7	10	7	9	8	15	8	13	8	12	9	24	9	22	8	20
<b>5.2</b>	242	394	227	344	220	310	276	477	254	424	238	382	333	613	307	549	288	503	466	871	439	836	420	802
	11	14	10	12	10	11	13	18	12	15	11	14	16	24	15	21	14	19	24	40	22	38	21	35
<b>7.0</b>	363	492	322	431	291	390	435	594	390	526	352	477	560	768	500	689	458	628	954	1018	848	984	780	950
	18	19	15	16	14	14	22	24	19	20	17	18	29	33	26	29	23	25	52	54	46	51	42	48
<b>8.6</b>	462	572	409	503	371	454	564	693	496	613	450	556	746	878	655	802	598	734	1136	1136	1098	1067	1067	1064
	24	23	20	19	18	17	29	29	25	24	23	22	40	41	34	35	31	31	68	68	64	64	59	59
<b>10.0</b>	549	643	481	564	435	511	670	780	590	689	534	625	905	969	795	886	715	825	1298	1291	1200	1268	1162	1162
	29	27	24	22	22	20	35	34	31	29	28	25	49	49	43	42	38	37	84	84	76	78	71	71
<b>12.0</b>	625	708	545	621	492	560	768	852	674	761	606	689	1045	1045	916	965	821	893	1347	1344	1321	1317	1298	1294
	33	31	28	25	25	22	41	39	36	32	32	29	58	58	49	49	44	43	95	95	90	89	84	84
<b>14.0</b>	693	765	606	674	545	606	859	912	749	821	674	746	1117	1117	1022	1030	920	961	1397	1393	1370	1366	1347	1340
	37	34	32	28	28	24	46	44	40	36	36	32	66	66	56	56	50	49	107	106	101	100	95	95
<b>15.5</b>	757	818	659	719	594	651	942	973	818	874	738	799	1181	1185	1094	1090	1007	1018	1419	1412	1412	1393	1389	1389
	40	38	35	30	31	26	51	49	44	41	39	35	74	74	63	63	55	54	111	111	111	111	105	105
<b>17.0</b>	818	867	712	765	640	689	1018	1026	886	924	795	844	1245	1272	1151	1151	1075	1075	1438	1431	1431	1431	1431	1431
	44	41	38	33	34	29	56	55	48	45	43	39	82	82	70	70	60	61	---	---	---	---	116	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.

## 9.0 INSPECTION CHECKLIST

Nozzle must be inspected for proper operation and function according to this checklist before each use. Check that:

- 1) There is no obvious damage such as missing, broken or loose parts, damaged labels etc.
- 2) Gasket grabber 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) Standard/low pressure knob turns freely and changes nozzle pressure.



### **WARNING**

*Any Mid-Force or Dual-Force nozzle failing any part of the inspection checklist is unsafe and must have the problem corrected before use. Operating a nozzle that fails any of the above inspections is a misuse of this equipment.*

**TASK FORCE TIPS, Inc.**  
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