



MANUAL: Hand Held Automatic Dual Pressure Nozzles

Mid-Force[®] and Dual-Force[®] INSTRUCTIONS FOR SAFE OPERATION AND MAINTENANCE

⚠ WARNING

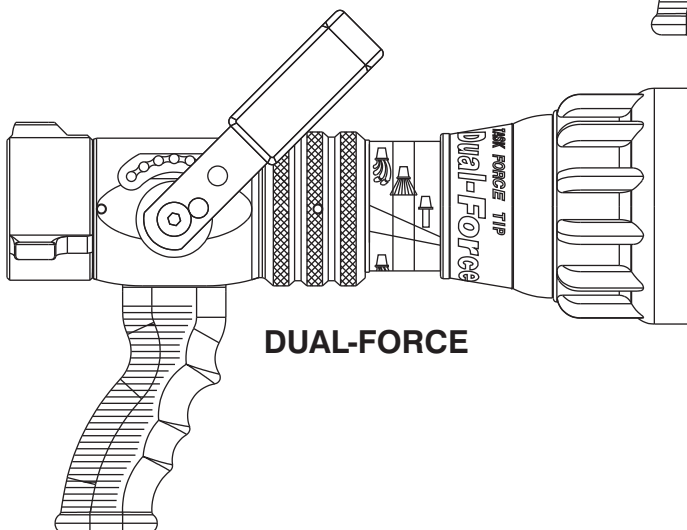
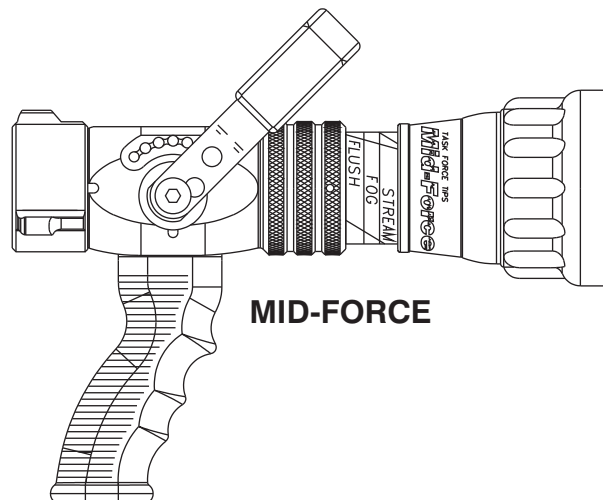
Read instruction manual before use. Operation of this nozzle without understanding the manual and receiving proper training can be dangerous and is a misuse of this equipment. Call 800-348-2686 with any questions.

⚠ 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.



TASK FORCE TIPS
FIRE FIGHTING EQUIPMENT

TASK FORCE TIPS, Inc.
www.tft.com

2800 East Evans Avenue, Valparaiso, IN 46383-6940
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 100 PSI operation to low pressure
- Automatic pressure regulation at 100 PSI (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 (GPM)	NOMINAL PRESSURE (PSI)	STANDARD COUPLING*
MID-FORCE	70-200	100	1-1/2 NH
DUAL-FORCE	70-250	100	1-1/2 NH

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

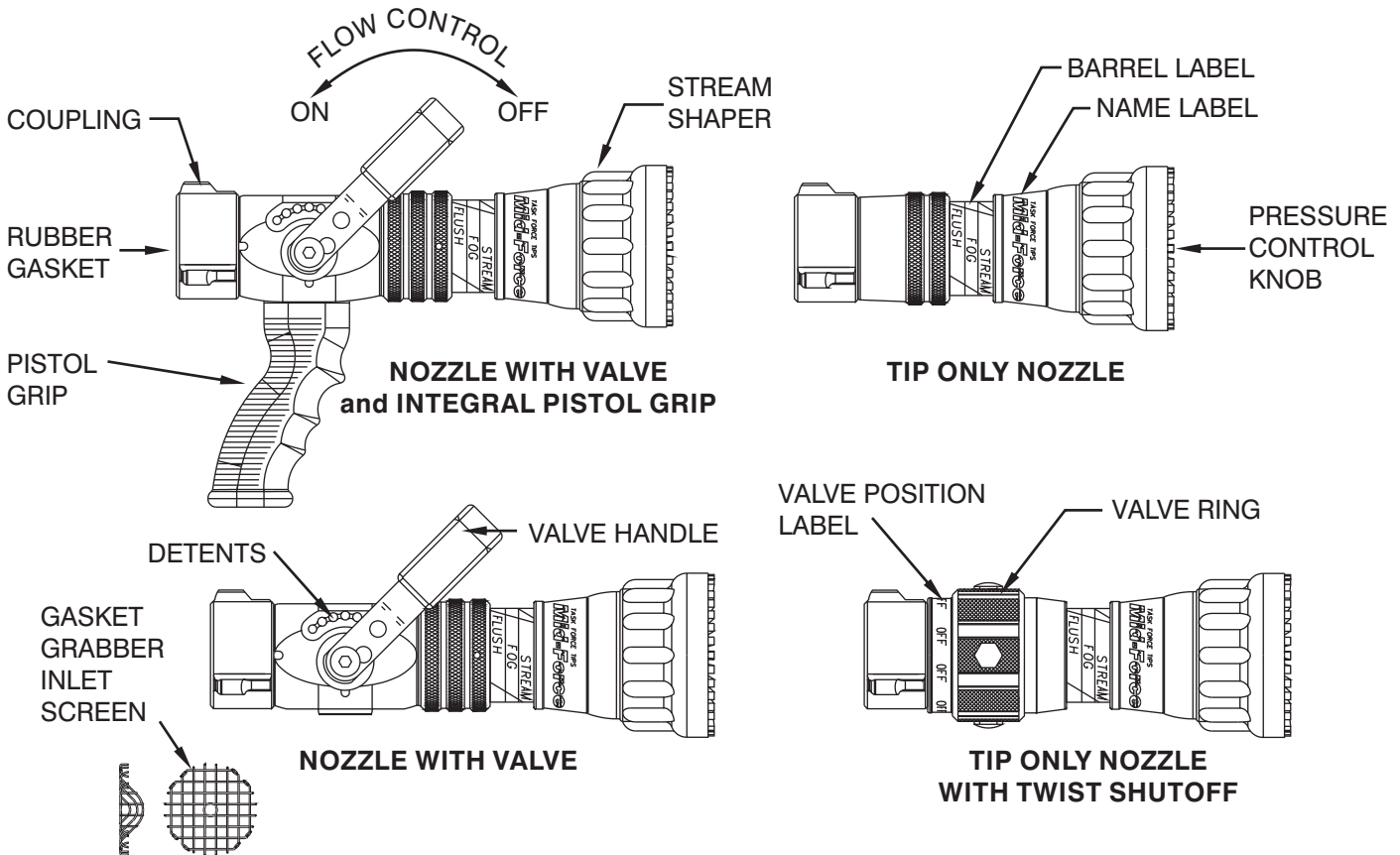


FIGURE 1 - COMMON MODELS AND TERMS

1.2 COLOR CODED VALVE HANDLE COVERS — MID-FORCE ONLY

The TFT MID-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 #242 Loctite® or equivalent 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.

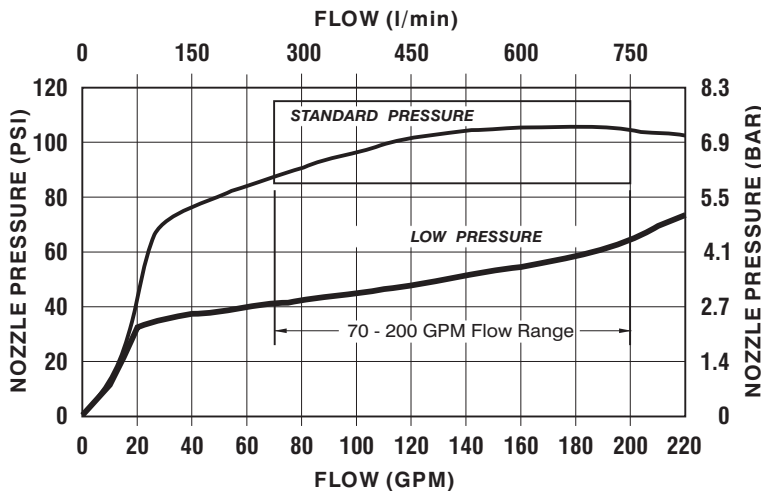


Nozzle must be mated to a hose line with matched threads. Mismatched or damaged threads may cause nozzle to leak or uncouple from hose under pressure and could cause injury.

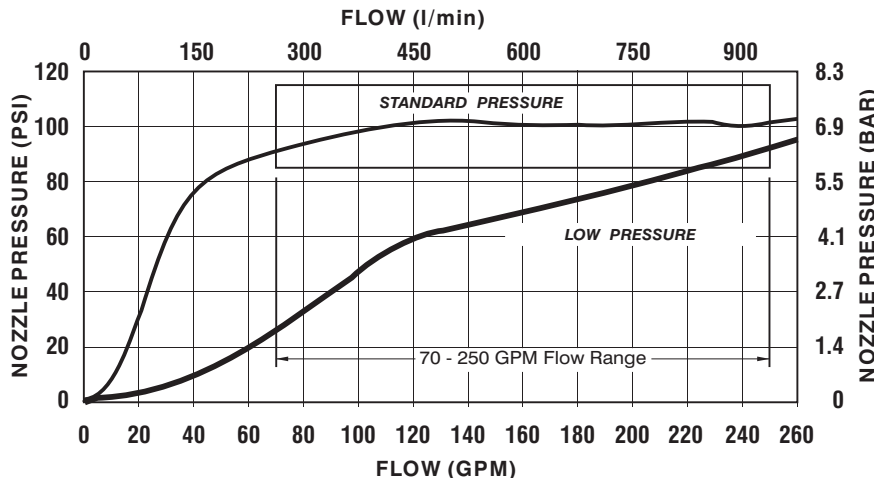
2.0 FLOW CHARACTERISTICS

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

Mid-Force meets NFPA flow requirements.



Dual-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**

⚠ DANGER

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.

⚠ WARNING

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.

⚠ WARNING

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.

⚠ CAUTION

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.

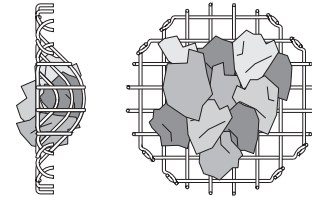


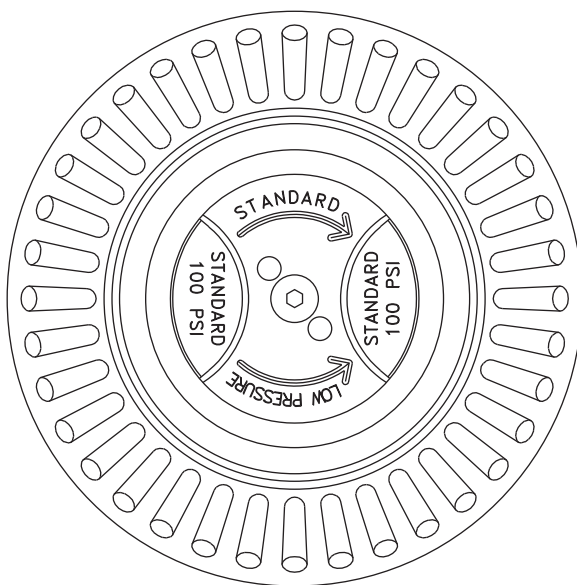
FIGURE 3 - GASKET GRABBER

3.3 STANDARD/LOW PRESSURE KNOB

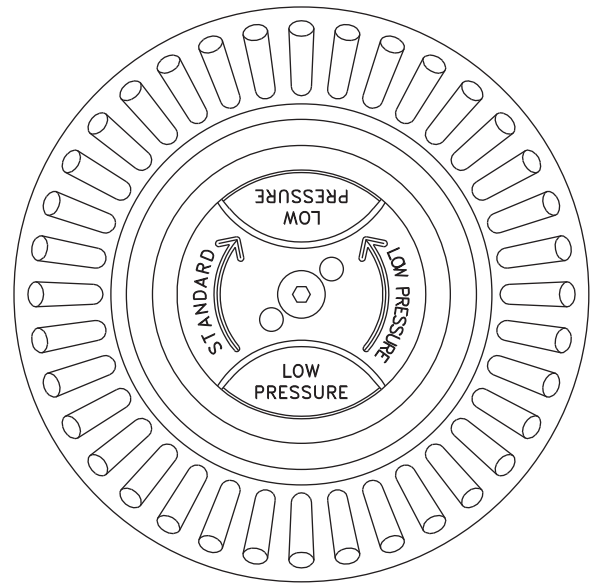
For situations where 100 PSI at the nozzle is impractical, the MID-FORCE or DUAL-FORCE may be switched to an low pressure mode. In the low pressure mode the nozzle pressure is reduced by about 50% while maintaining a usable stream and increasing the flow. The nozzle operator must be prepared for a change 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 100 PSI operation.

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
Standard Operating Mode



Knob In
Low Pressure Mode

FIGURE 4

4.0 USE OF MID-FORCE and DUAL-FORCE NOZZLES

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.

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:

Within its flow range, the nozzle pressure (NP) of the MID-FORCE or DUAL-FORCE nozzle may be approximated as 100 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.

TFT Item#	Title
LHM-020	Mid-Matic & Mid-Force Service Procedure
LID-050	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 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	82 27	75 24
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	35 15	141 51	35 15	128 45	34 15	141 51	128 45
100	65 30	121 42	59 27	107 36	55 25	97 32	67 32	143 52	72 34	129 45	63 29	117 40	79 38	184 72	79 38	167 63	75 36	184 72	167 63
125	93 45	143 52	84 40	126 44	77 37	114 39	97 48	172 65	108 54	152 56	91 44	138 50	122 62	213 90	122 62	198 79	113 57	213 90	198 79
150	117 59	163 61	105 52	143 52	96 47	130 46	125 63	195 77	141 72	174 66	114 57	158 58	168 87	---	168 87	220 95	151 78	---	220 95
175	140 72	180 69	124 63	159 59	112 57	143 52	151 78	213 90	174 90	192 76	136 70	175 66	212 109	---	212 109	---	187 97	---	---
200	162 84	196 78	141 73	173 66	128 65	156 58	175 91	228 102	204 105	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) Flows are approximate and do not reflect losses in preconnect piping.

DualForce 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						
	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	25 9	75 20	25 9	70 18	65 15	85 26	25 9	85 26	25 9	80 23	75 20	25 9	90 29	25 9	90 29	25 9	90 29	25 9	85 26
75	35 15	95 32	35 15	90 29	85 26	105 38	35 15	105 38	35 15	100 35	95 32	35 15	120 47	35 15	110 41	35 15	110 41	35 15	105 38
100	60 28	110 41	55 26	105 38	95 32	130 52	65 31	130 52	60 28	115 44	110 41	60 28	160 67	75 36	145 59	70 34	145 59	70 34	135 54
125	90 45	130 52	80 39	120 47	110 41	155 64	105 53	155 64	95 47	140 57	130 52	85 42	200 90	140 71	180 78	120 61	200 90	120 61	165 70
150	115 58	150 62	105 53	135 54	120 47	180 78	145 74	180 78	125 64	160 67	145 59	115 58	230 108	200 101	210 95	175 89	230 108	175 89	190 84
175	140 71	170 72	125 64	150 62	135 54	205 93	180 91	205 93	155 79	180 78	165 70	135 69	260 128	250 127	235 111	215 109	260 128	215 109	215 98
200	165 84	185 81	145 74	165 70	150 62	220 105	205 104	220 105	180 91	200 90	180 78	160 81	250 127	250 127	255 125	250 127	250 127	255 125	235 111
225	185 94	200 90	160 81	180 78	160 74	240 115	230 117	240 115	200 101	215 98	195 86	180 91	280 127	280 127	280 127	280 127	280 127	280 127	255 125
250	205 104	215 98	175 89	190 84	170 72	260 128	250 127	260 128	220 112	230 108	210 95	195 99	270 139	270 139	270 139	270 139	270 139	270 139	275 139

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.

DualForce 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	7 bar	LP	7 bar	LP	7 bar	LP	7 bar	LP	7 bar	LP	
350	95	285	95	265	95	245	95	320	95	305	95	285	95	340	95	340	95	340	95
520	130	360	130	340	130	320	130	395	130	380	130	360	130	455	130	415	130	415	130
700	225	415	210	395	190	360	245	490	225	435	225	415	285	605	265	550	265	550	265
860	340	490	305	455	285	415	395	585	360	530	320	490	530	755	455	680	415	625	415
1000	435	570	395	510	360	455	550	680	475	605	435	550	755	870	660	795	585	720	585
1200	530	645	475	570	415	510	680	775	585	680	510	625	945	985	815	890	740	815	815
1400	625	700	550	625	490	570	775	835	680	755	605	680	945	945	815	965	835	890	890
1550	700	755	605	680	550	605	870	910	755	815	680	740	945	945	815	965	835	890	890
1700	755	815	660	720	605	645	945	985	835	870	740	795	945	945	815	965	835	890	890

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

(1) Number on top of 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 Flow And Nozzle Reaction Chart

7 bar = STANDARD PRESSURE MODE

LP = LOW PRESSURE MODE

FLOW (LPM)
REACTION
(KG)

PUMP DISCHARGE PRESSURE (KPA)	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
350	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
520	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
700	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
860	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
1000	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
1200	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
1400	615 38	740 35	535 33	655 30	485 30	590 26	770 48	---	660 41	785 39	595 37	715 34	---	---	---	---	840 51	---
1550	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.

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.

***2800 East Evans Avenue • Valparaiso , IN 46383-6940
800-348-2686 • 219-462-6161 • Fax 219-464-0620***