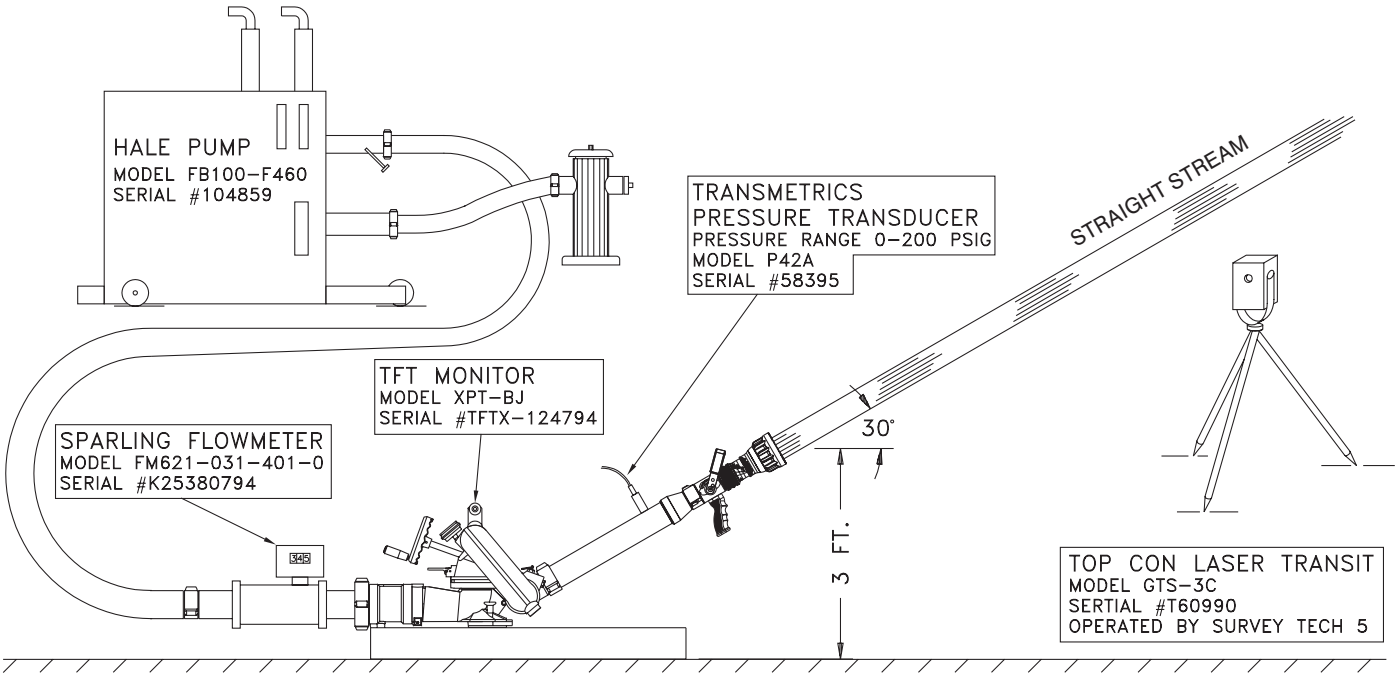
TASK FORCE TIPS

Technical Bulletin
7th Sept. 1994

REACH AND TRAJECTORY DATA OF HAND HELD NOZZLES

Stream reach testing of TFT's hand held nozzles was conducted on August 2, 1994 at LTV Steel Works of East Chicago, Indiana. This document presents the results of that testing. All reach testing was done inside a building to assure that data taken was for still air conditions. Test set-up is shown below.



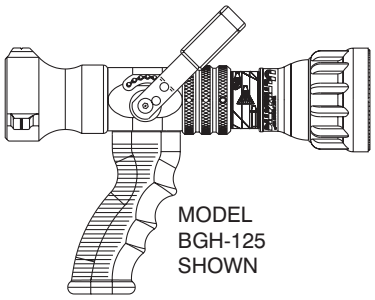
STREAM TRAJECTORY TEST SET-UP

TEST PROCEDURE A fire fighting monitor was fastened to the floor of the building to assure a stable base for the nozzle. Nozzle elevation angle was set with a digital angle gage (Wedge Innovations, Series 200) to 30 degrees. Nozzle flow was monitored using a magnetic flow meter and a digital pitot pressure transducer at the nozzle inlet. Both devices were calibrated previously to within a maximum error of 1% on an instrument traceable to the National Bureau of Standards. The pump was adjusted to obtain the desired flow. A surveyor from PTGR Engineers-Land Surveyors was hired to take horizontail and vertical distance measurements along the stream using a laser operated transit. Several points along each stream trajectory were recorded to an accuracy of within 2 inches. Data was taken for all adjustable gallonage nozzles for all flow settings at pressures of 75, 100 and 125 PSI. Automatic nozzles were tested at several different flows in standard and low pressure mode (if so equipped). Both distance to the farthest reaching drops of water and to the effective fire fighting stream were recorded.

TEST RESULTS Graphs of the results, representing the shape of the stream as it travels through the air in no wind conditions, are presented on the following pages.

TASK FORCE TIPS
www.tft.com
2800 East Evans Avenue, Valparaiso, IN 46383-6940
800-348-2686 · 219-462-6161 · FAX 219-464-7155

ULTIMATIC 125 SERIES STREAM TRAJECTORIES



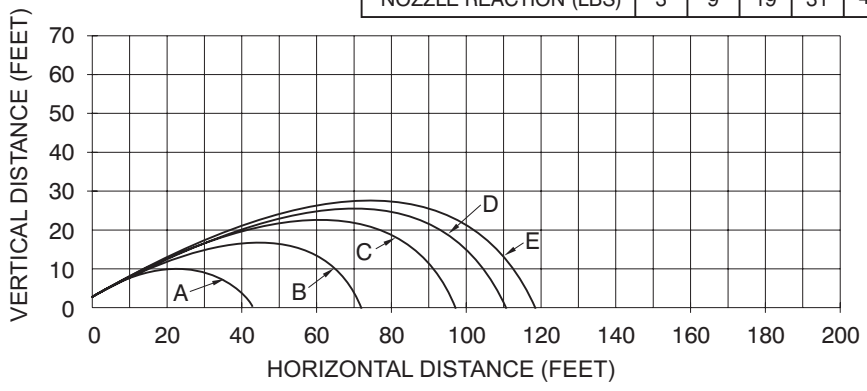
MODEL
BGH-125
SHOWN

ULTIMATIC, FORESTRY VERSION
Flow range 10-100 GPM, automatic pressure control at 75 PSI.

NOZZLE TESTED
ULTIMATIC, FORESTRY
Model: BGH-125F
Serial #: TFTB-106976

ULTIMATIC Forestry Version

CURVE	A	B	C	D	E
FLOW (GPM)	10	25	50	75	100
PRESSURE (PSI)	26	46	59	69	80
NOZZLE REACTION (LBS)	3	9	19	31	45

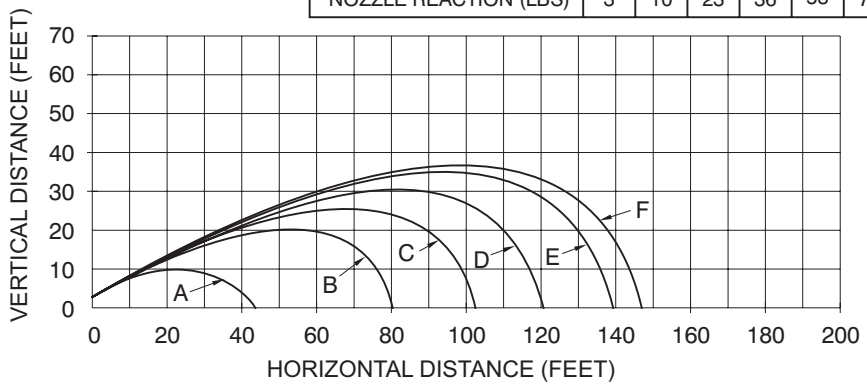


ULTIMATIC
Flow range 10-125 GPM, automatic pressure control at 100 PSI.

NOZZLE TESTED
ULTIMATIC
Model: BGH-125
Serial #: TFTB-015741

100 PSI ULTIMATIC

CURVE	A	B	C	D	E	F
FLOW (GPM)	10	25	50	75	100	125
PRESSURE (PSI)	28	69	84	91	110	122
NOZZLE REACTION (LBS)	3	10	23	36	53	70



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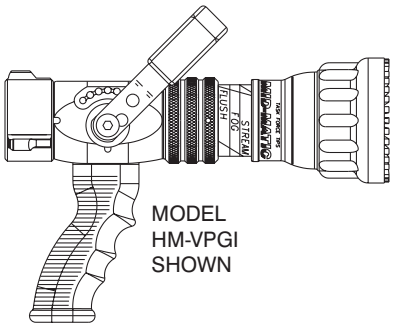
Notes: Stream trajectories shown are for no wind conditions at 30 degree elevation. Wind can substantially alter the shape and reach of the stream of any nozzle. Effective fire fighting range of nozzles is shown. Maximum reach of last water drop is approximately 10% farther.

MID-MATIC and Mid-Force STREAM TRAJECTORIES



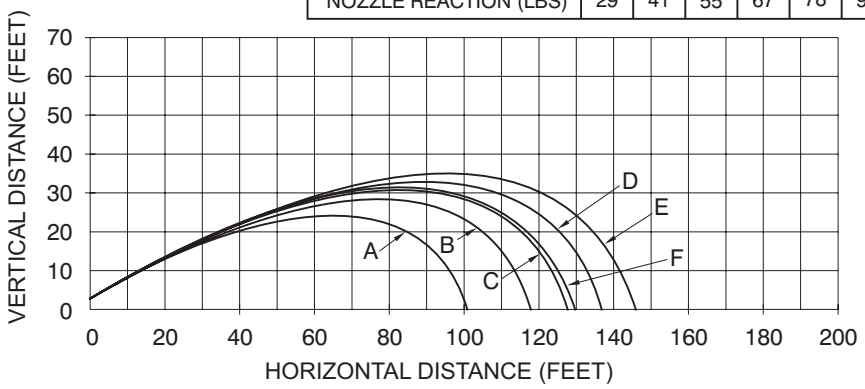
MODEL
HM-VPGI
SHOWN

75 PSI MID-MATIC
Flow range 70-200 GPM, automatic pressure control at 75 PSI.

NOZZLE TESTED
75 PSI Mid-Matic
Model: HM-V
Serial #: TFTH- 148522

75 PSI MID-MATIC

CURVE	A	B	C	D	E	F
FLOW (GPM)	70	95	125	150	175	200
PRESSURE (PSI)	68	74	75	78	77	82
NOZZLE REACTION (LBS)	29	41	55	67	78	91

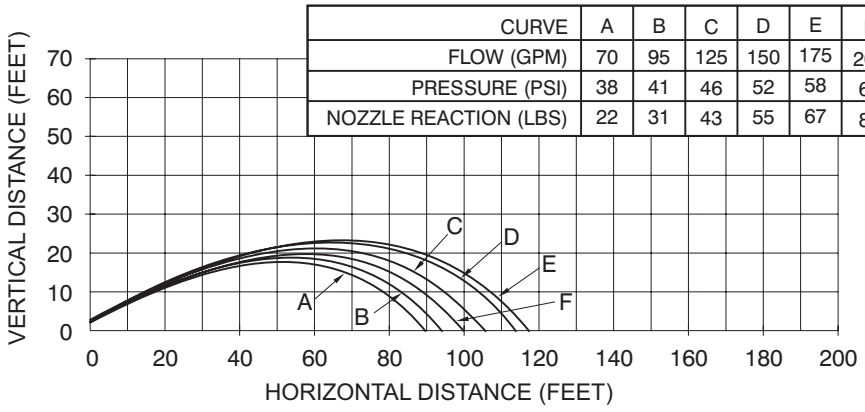


MID-FORCE
Flow range 70-200 GPM, automatic pressure control at emergency low pressure mode.

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

MID-FORCE in Low Pressure Mode

CURVE	A	B	C	D	E	F
FLOW (GPM)	70	95	125	150	175	200
PRESSURE (PSI)	38	41	46	52	58	64
NOZZLE REACTION (LBS)	22	31	43	55	67	81



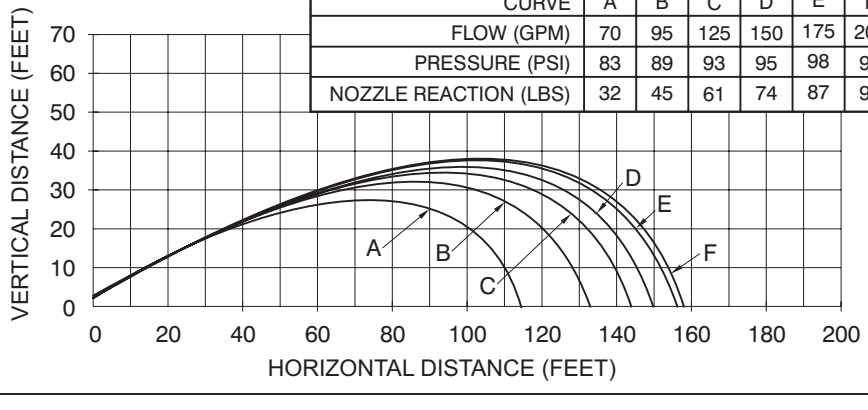
MID-MATIC
Flow range 70-200 GPM, automatic pressure control at 100 PSI.

MID-FORCE
Flow range 70-200 GPM, automatic pressure control at 100 PSI pressure mode.

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

100 PSI MID-MATIC or MID-FORCE in Standard Pressure Mode

CURVE	A	B	C	D	E	F
FLOW (GPM)	70	95	125	150	175	200
PRESSURE (PSI)	83	89	93	95	98	96
NOZZLE REACTION (LBS)	32	45	61	74	87	99



TASK FORCE TIPS

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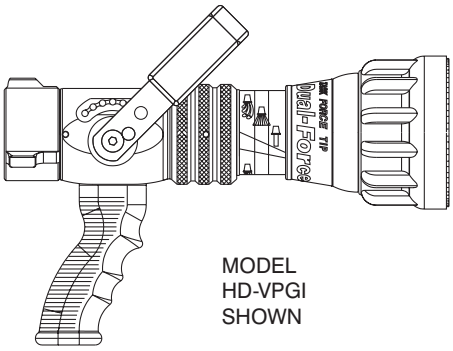
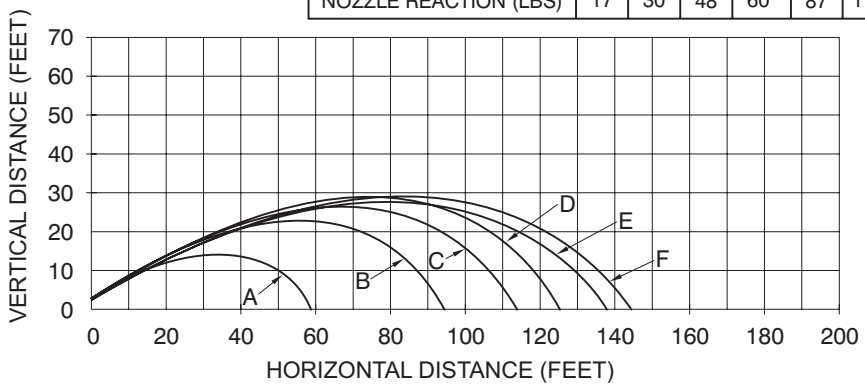
Dual-Force® and HANDLINE STREAM TRAJECTORIES



MODEL
HD-VPGI
SHOWN

DUAL-FORCE
Low Pressure Mode

CURVE	A	B	C	D	E	F
FLOW (GPM)	70	95	125	150	200	250
PRESSURE (PSI)	22	40	58	63	74	87
NOZZLE REACTION (LBS)	17	30	48	60	87	118

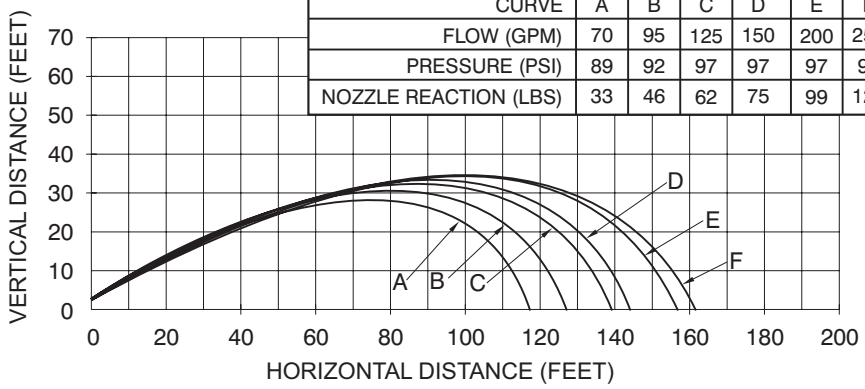


DUAL-FORCE
Flow range 70-250 GPM, automatic pressure control with 100 PSI and emergency low pressure mode.

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

DUAL-FORCE
Standard Pressure Mode

CURVE	A	B	C	D	E	F
FLOW (GPM)	70	95	125	150	200	250
PRESSURE (PSI)	89	92	97	97	97	96
NOZZLE REACTION (LBS)	33	46	62	75	99	124

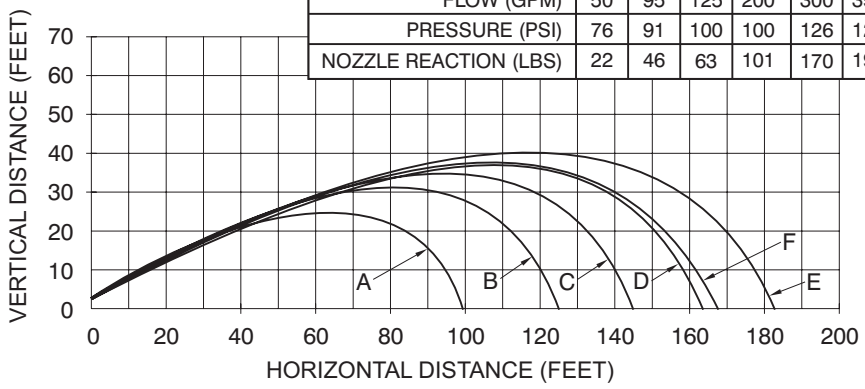


HANDLINE
Flow range 50-350 GPM, automatic pressure control at 100 PSI.

NOZZLE TESTED
HANDLINE
Model: H-VPGI
Serial #: TFTH-039521

HANDLINE (Automatic)

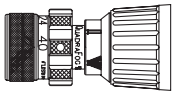
CURVE	A	B	C	D	E	F
FLOW (GPM)	50	95	125	200	300	350
PRESSURE (PSI)	76	91	100	100	126	127
NOZZLE REACTION (LBS)	22	46	63	101	170	199



TASK FORCE TIPS®

Notes: Stream trajectories shown are for no wind conditions at 30 degree elevation. Wind can substantially alter the shape and reach of the stream of any nozzle. Effective fire fighting range of nozzles is shown. Maximum reach of last water drop is approximately 10% farther.

QUADRAFOG DQ40 SERIES STREAM TRAJECTORIES



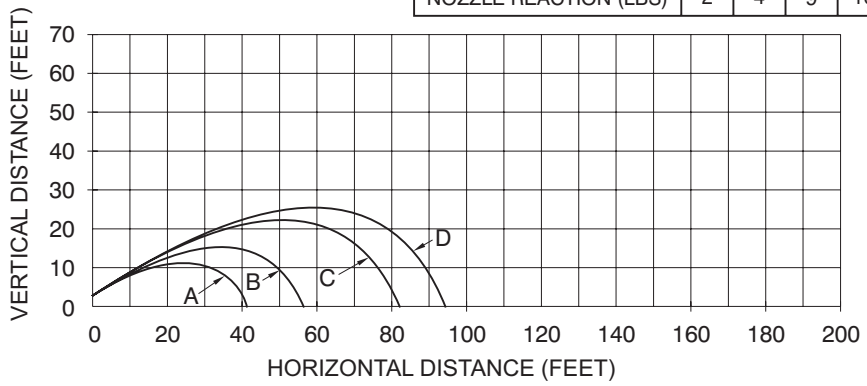
MODEL
DQ40
SHOWN

QUDRAFOG DQ40 SERIES
Selectable gallonage nozzle with 4 flow settings of 5, 10, 24 and 40 GPM at 100 PSI nozzle inlet pressere.

NOZZLE TESTED
Model: DQ40
Serial #: KKF-013868

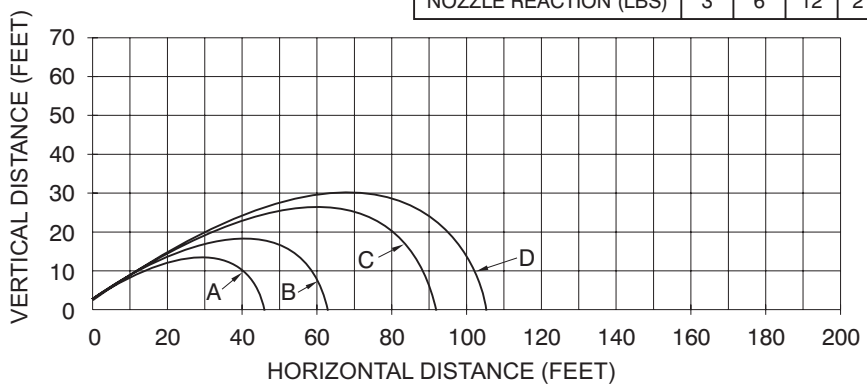
DQ40 at 75 PSI

CURVE	A	B	C	D
SELECTOR RING SETTING	5	10	24	40
ACTUAL FLOW (GPM)	4	10	20	36
NOZZLE REACTION (LBS)	2	4	9	16



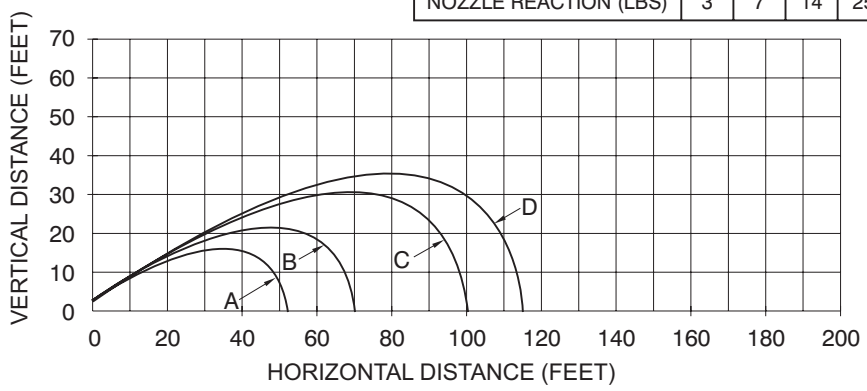
DQ40 at 100 PSI

CURVE	A	B	C	D
SELECTOR RING SETTING	5	10	24	40
ACTUAL FLOW (GPM)	5	11	23	41
NOZZLE REACTION (LBS)	3	6	12	21



DQ40 at 125 PSI

CURVE	A	B	C	D
SELECTOR RING SETTING	5	10	24	40
ACTUAL FLOW (GPM)	6	12	25	45
NOZZLE REACTION (LBS)	3	7	14	25



TASK FORCE TIPS®

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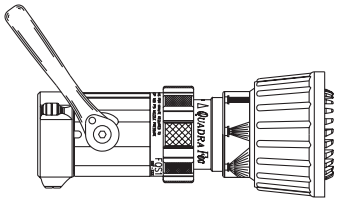
QUADRAFOG FQ125 SERIES STREAM TRAJECTORIES



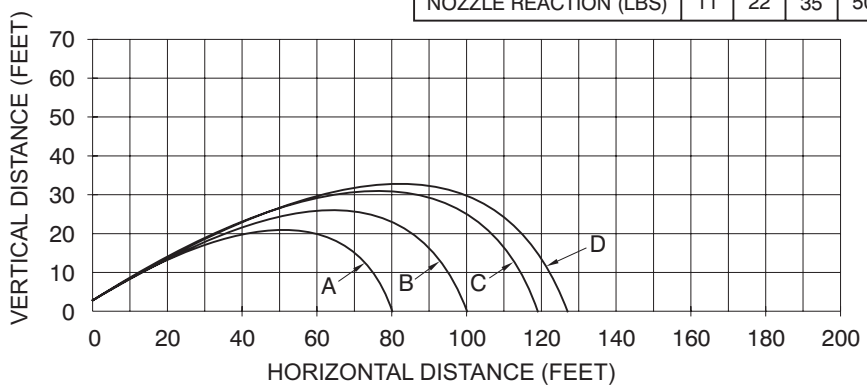
MODEL
FQS-125
SHOWN

QUADRAFOG FQ125 SERIES
Selectable gallonage nozzle with four flow settings of 30, 60, 95 and 125 GPM at 100 PSI nozzle inlet pressure.

NOZZLE TESTED
Model: FQS-125
Serial #: KKF-145128

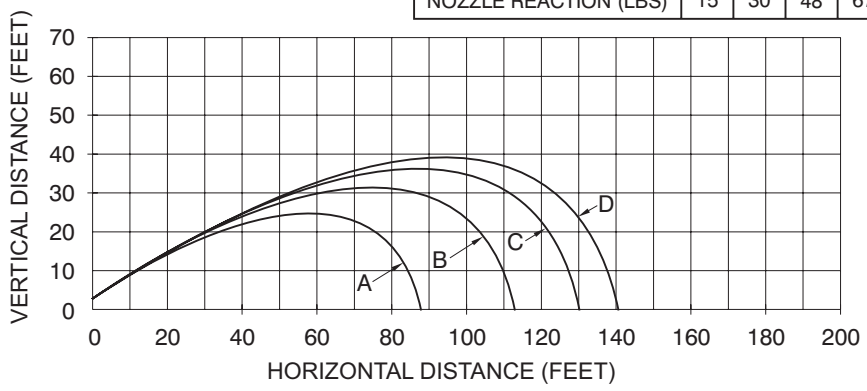
FQ125 at 75 PSI

CURVE	A	B	C	D
SELECTOR RING SETTING	30	60	95	125
ACTUAL FLOW (GPM)	26	51	80	115
NOZZLE REACTION (LBS)	11	22	35	50



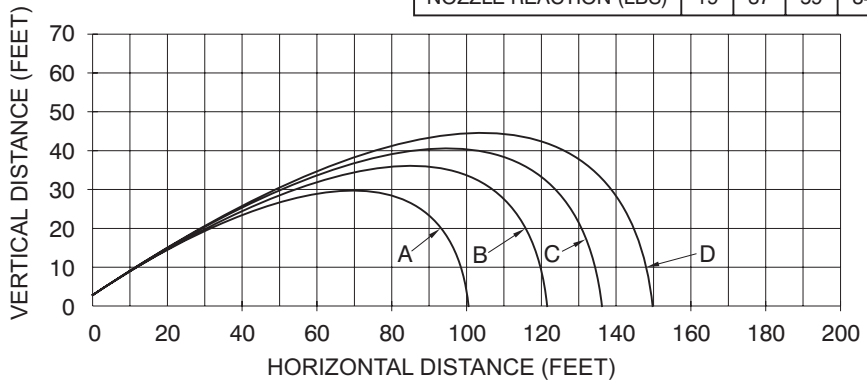
FQ125 at 100 PSI

CURVE	A	B	C	D
SELECTOR RING SETTING	30	60	95	125
ACTUAL FLOW (GPM)	30	60	95	133
NOZZLE REACTION (LBS)	15	30	48	67



FQ125 at 125 PSI

CURVE	A	B	C	D
SELECTOR RING SETTING	30	60	95	125
ACTUAL FLOW (GPM)	34	66	105	148
NOZZLE REACTION (LBS)	19	37	59	84



TASK FORCE TIPS®

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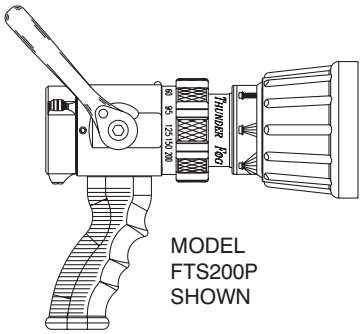
THUNDERFOG FT200 SERIES STREAM TRAJECTORIES



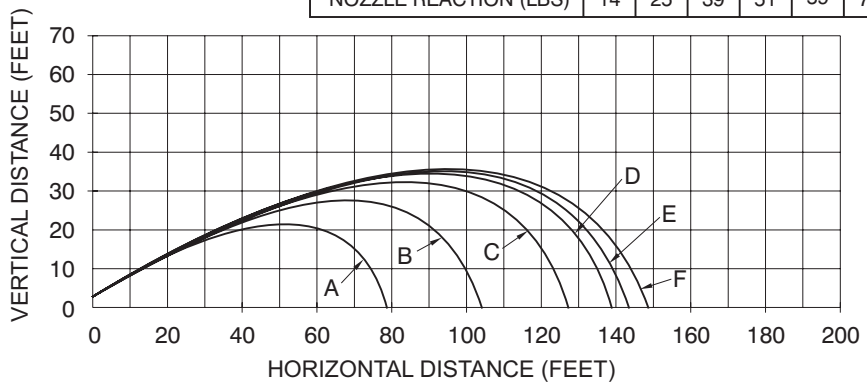
MODEL
FTS200P
SHOWN

THUNDERFOG FT200 SERIES
Selectable gallonage nozzle with 6 flow settings of 30, 60, 95, 125, 150 and 200 GPM at 100 PSI nozzle inlet pressere.

NOZZLE TESTED
Model: FT200
Serial #: KKF-156289

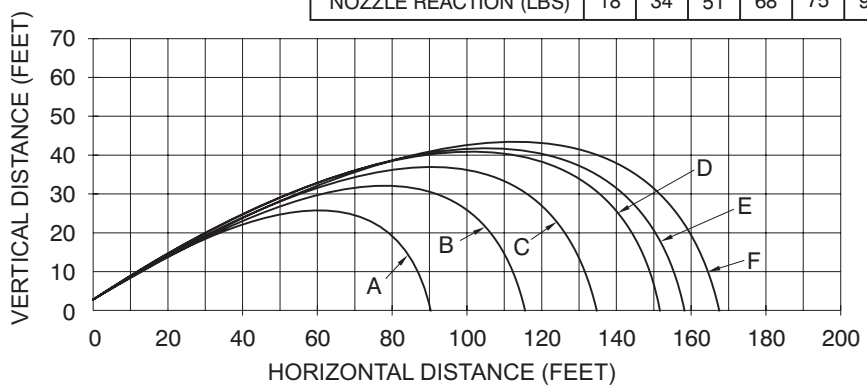
FT200 AT 75 PSI

CURVE	A	B	C	D	E	F
SELECTOR RING SETTING	30	60	95	125	150	200
ACTUAL FLOW (GPM)	31	58	89	117	136	165
NOZZLE REACTION (LBS)	14	25	39	51	59	72



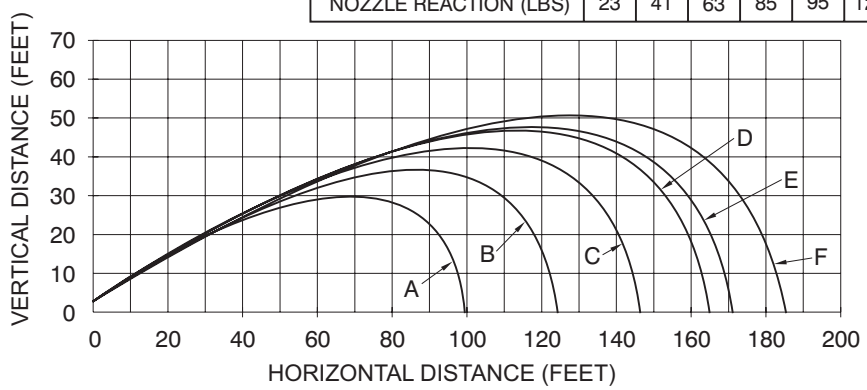
FT200 AT 100 PSI

CURVE	A	B	C	D	E	F
SELECTOR RING SETTING	30	60	95	125	150	200
ACTUAL FLOW (GPM)	36	67	100	135	149	192
NOZZLE REACTION (LBS)	18	34	51	68	75	97



FT200 AT 125 PSI

CURVE	A	B	C	D	E	F
SELECTOR RING SETTING	30	60	95	125	150	200
ACTUAL FLOW (GPM)	41	73	112	151	168	216
NOZZLE REACTION (LBS)	23	41	63	85	95	122



TASK FORCE TIPS®

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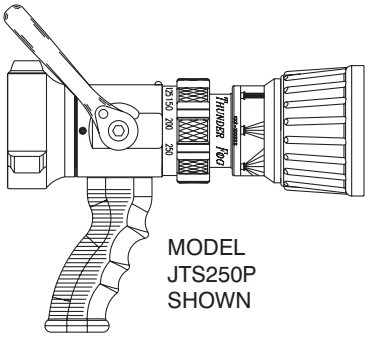
THUNDERFOG JT250 SERIES STREAM TRAJECTORIES



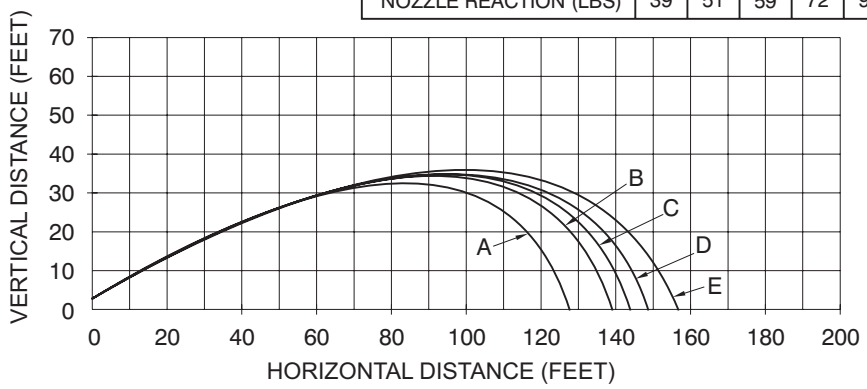
MODEL
JTS250P
SHOWN

THUNDERFOG JT250 SERIES
Selectable gallonage nozzle with 5 flow settings of 95, 125, 150, 200 and 250 GPM at 100 PSI nozzle inlet pressere.

NOZZLE TESTED
Model: JTS250P
Serial #: KKJ-134366

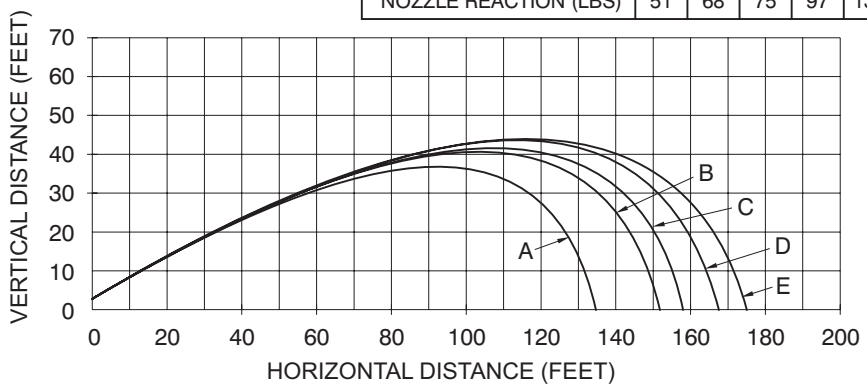
JT250 AT 75 PSI

CURVE	A	B	C	D	E
SELECTOR RING SETTING	95	125	150	200	250
ACTUAL FLOW (GPM)	89	117	136	165	226
NOZZLE REACTION (LBS)	39	51	59	72	99



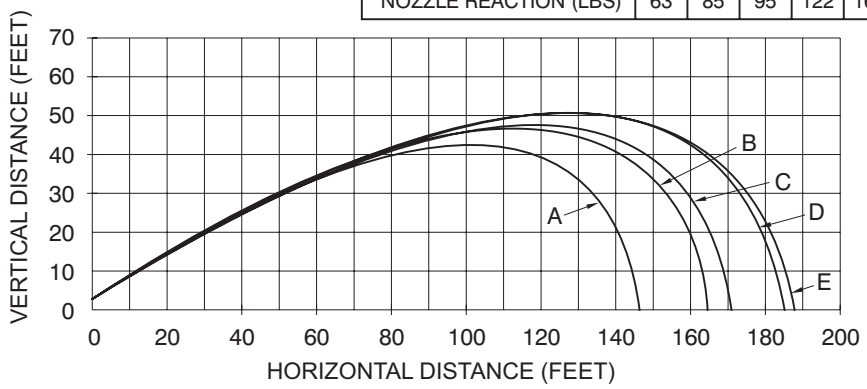
JT250 AT 100 PSI

CURVE	A	B	C	D	E
SELECTOR RING SETTING	95	125	150	200	250
ACTUAL FLOW (GPM)	100	135	149	192	263
NOZZLE REACTION (LBS)	51	68	75	97	133



JT250 AT 125 PSI

CURVE	A	B	C	D	E
SELECTOR RING SETTING	95	125	150	200	250
ACTUAL FLOW (GPM)	112	151	168	216	291
NOZZLE REACTION (LBS)	63	85	95	122	164



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