PHASE 2

Monsanto COMPANY — LOCATION WGK

PROCESS ACTUATED * SWITCHES SPECIFICATIONS

DIVISION	PLANT	*SPEC NO.
002	WGK	IS-2417-54
AUTH NO.	DEPT OR AREA	SHEET / REV
2417	246	1 OF 4 / 0

Instrument No.			2417 - FA-349-1								
Service			LOW FLOW ALARM								
Equipment No. or Line No. & Size			1-349-1-A11-1½								
Process Material			INST AIR								
GENERAL	Press. Temp. – Level Flow Switch – Relay		PRESSURE								
	Temperature	Normal / Max.	AMBIENT								
	Pressure	Normal / Max.	9	15							
	Fluid (Level Only)	Upper / Lower									
	Sp. Gr. @ Oper. Temp.	Upper / Lower									
ELEMENT	*Range & Units		1-20 PSIG								
	Pressure: Type Element & Material		DIAPHRAGM								
	Pressure: Conn. Size / Orientation		¼" NPT / BTM								
	Temp.: Fill – Gas, Mercury, etc.										
	Temp.: Capillary – Length / Material										
	Temp.: Armor Material										
	Temp.: Bulb-Diameter / Length										
	Temp.: Bulb Type – Plain, Union										
	Temp.: Bulb Conn. – Size & Rating										
	Temp.: Well Material										
	Temp.: Well Conn. Size & Rating										
	Temp.: Lgth below Thread or Flange "U" (SEE NOTE)										
	Temp.: Lagging Extension "T" (SEE NOTE)										
	Level: Type & Material										
	Level: Connection Size & Rating										
	Level: Connection Arrangement										
	Level: Cooling Fin or Extension										
	Level: Float Material & Size										
	Flow: Connection or Body Size										
	Flow: Type Element & Matl.										
	Flow: Disc or Paddle Size										
SWITCH	Type – Mercury, Micro, etc.		MERCURY								
	Contact Arrangement / Rating – Volts & Amps		SPDT, 4A / 120V								
	Set Point		4 PSIG								
	On Measurement Increase Switch		~~OPENS~~ / CLOSES		OPENS	CLOSES	OPENS	CLOSES	OPENS	CLOSES	
	Electrical Area Classification		G.P., NEMA 1								
	Conduit Conn. Size & Hub or K.O.		½"								
	Differential Range – Fixed, Adjustable		FIXED								
REMARKS	Accessories or Special Features										
	ADJUSTABLE SET POINT		YES								
	SWITCH FIELD WIRED TO OPEN ON ALARM		YES								
PURCH.	Manufacturer		MERCOID								
	*Catalog No.		AP-153-R36								
	P.O. No.		0061								
	Price		#18								

REV.								
0	PREPARED	EHS	1/26/71	4				
1				5				
2				6				
3				7				

ES 113 (10/66)

NOTE: For explanation of dimensions U, T ref. to ISA RP-20.1 Pg. 16.

PCB-ARCH-EXT0374199

Per 7*

Monsanto COMPANY LOCATION WGK

RECEIVER – CONTROLLER SPECIFICATION
~~ELECTRONIC~~ – PNEUMATIC

DIVISION	PLANT	*SPEC NO.	
002	WGK	IS-2417-12	
AUTH NO.	DEPT OR AREA	SHEET	REV
2417	246	1 OF 4	1

1	Instrument No.	2417 –	PIC-301-5	PDI-301-4	FIC-303-1	LI-312-3
	Service					
	Location – Panel or Equipment No.		PANEL	→	→	→
3	RECEIVER: Record Indicate Control		INDICATR, CONTROL	INDICATR	INDIC, CONTROL	INDICATR
6*	RECEIVER: *Number of Points		1	1	1	1
	RECEIVER: Chart	Size & Type				
		Range				
		Drive / Speed				
	RECEIVER: Scale	Size & Type	10"x1¾" TAPE	4"x1¾" FXD	4"x1¾" FXD	4"x1¾" FXD
		Range	0-100 LIN	0-10 LIN	0-10 LIN	0-10 LIN
	RECEIVER: Ratio, Cascade, Computer – Set		MECH SET PT	NONE	CASCADE	NONE
	RECEIVER: Auto – Manual By Pass		YES / ~~NO~~	YES / NO	YES / ~~NO~~	YES / NO
	CONTROLLER: Location		INTEG. / ~~REMOTE~~	INTEG. / REMOTE	INTEG. / ~~REMOTE~~	INTEG. / REMOTE
	CONTROLLER: Proportional Band %		2-500 %	NONE	2-500 %	NONE
	CONTROLLER: Auto-Reset Mode		~~NO~~ / SLOW / ~~FAST~~	NO / SLOW / FAST	~~NO~~ / SLOW / ~~FAST~~	NO / SLOW / FAST
	CONTROLLER: Rate Mode		~~YES~~ / NO	YES / NO	~~YES~~ / NO	YES / NO
	CONTROLLER: On Measurement Increase – Instrument Output		~~INC.~~ / DEC	INC. / DEC	~~INC.~~ / DEC	INC. / DEC
	SIGNALS: Measurement Input – Range & Units		3-15 PSIG	3-15 PSIG	3-15 PSIG	3-15 PSIG
	SIGNALS: Measurement Input – From		PT 301-5	PDT 301-4	FT 303-1	LT 312-3
	SIGNALS: Controller Output – Range & Units		3-15 PSIG	NONE	3-15 PSIG	NONE
	SIGNALS: Controller Output – To		PV 301-5	NONE	ITEM 303	NONE
	SIGNALS: Set Point – Range & Units			NONE	3-15 PSIG	NONE
	SIGNALS: Set Point – From			NONE	FCV –	NONE
	SIGNALS: Power Supply – Electric, Pneumatic		PNEUMATIC	PNEUMATIC	→	PNEUMATIC
	SIGNALS: Electrical Area Classification		GEN. PURPOSE	GEN. PURPOSE	→	→
	REMARKS: Accessories or Special Features					
	REMOTE SET POINT		NO	NO	YES	NO
	COLOR		TAN	TAN	TAN	TAN
	LOCAL SET POINT		YES	NO	NO	NO
	PROCESS VARIABLE INDIC		YES	YES	YES	YES
	SET POINT INDICATION		NO	—	YES	—
2	PURCH.: Manufacturer		FISCHER-PORTER	→	→	→
4*	PURCH.: *Receiver Catalog No.	51-	1351ABFC	1352FPAC	1351AEFC	1352FPAC
5*	PURCH.: *Controller Catalog No.					
	PURCH.: P.O. No.		0012	0012	0012	0012
	PURCH.: Price		#460 EST	#170 EST	#441 EST	#170 EST

(1) ▽

REV.		DATE
0	PREPARED EHS	10/16/72
1	AS NOTED EHS	4/15/71
2		
3		
4		
5		
6		
7		

PCB-ARCH-EXT0374200

Per 7*

Monsanto COMPANY — LOCATION W6K

RECEIVER – CONTROLLER SPECIFICATION
ELECTRONIC – PNEUMATIC

DIVISION	PLANT	*SPEC NO.	REV
002	W6K	IS-2417-12	0
AUTH NO.	DEPT OR AREA	SHEET:	
2417	246	3 OF 4	

1	Instrument No.			2417-	FIC-349-1		LIC-305-3		FIC 541				
	Service				FLOW CONTROL		LEVEL, INDIC CONTROL		FLOW to #2 & #3 Absorbers				
	Location – Panel or Equipment No.				PANEL		PANEL						
3	RECEIVER	Record Indicate Control			INDICATE + CONTROL		INDICATE + CONTROL		Ind. & Control				
6*		*Number of Points			1		1						
		Chart	Size & Type										
			Range										
			Drive	Speed									
		Scale	Size & Type		10"x1¾" TAPE		10"x1¾" TAPE		10"x1¾" TAPE				
			Range		0-10 SQ RT		0-100 LIN		0-100 eq. at.				
		Ratio, Cascade, Computer – Set			MECH SET PT		MECH SET PT		Mech Set Pt				
		Auto – Manual By Pass			(YES) NO		(YES) NO		(YES) NO		YES	NO	
	CONTROLLER	Location			(INTEG.) REMOTE		(INTEG.) REMOTE		(INTEG.) REMOTE		INTEG.	REMOTE	
		Proportional Band %			2-500 %		2-500%						
		Auto-Reset Mode			(NO) SLOW FAST		(NO) SLOW FAST		NO SLOW (FAST)		NO	SLOW	FAST
		Rate Mode			YES (NO)		YES (NO)		YES (NO)		YES	NO	
		On Measurement Increase Instrument Output –			INC. (DEC)		INC. (DEC)		INC. (DEC)		INC.	DEC	
	SIGNALS	Measurement Input	Range & Units		3-15 PSIG SQ RT		3-15 PSIG LIN		3-15 Sq Rt.				
			From		FT-349-1		LIA-305-3		FT 541				
		Controller Output	Range & Units		3-15 PSIG		3-15 PSIG		3-15				
			To		FV-349-1		LV-305-3		FV 541				
		Set Point	Range & Units										
			From										
		Power Supply – Electric, Pneumatic			PNEUMATIC		PNEUMATIC						
		Electrical Area Classification			GEN PURP.		GEN PURP						
	REMARKS	Accessories or Special Features											
					FIELD NOTE:								
					THE CONTROL								
					LER IN THIS								
					UNIT IS TO								
					BE SWAPPED								
					WITH THE				existing				
					CONTROLLER				1900				
					IN				FIC 32 &				
					FIC-303-1				FV 32 IN				
		COLOR			TAN		TAN		PLACE.				
		LOCAL SET POINT			YES		YES						
2	PURCH.	Manufacturer			FISCHER-PORTER		→		F&P				
4*		*Receiver Catalog No.		51-	1351 ARBC		1351 ABBC		15-1351 ABBC				
5*		*Controller Catalog No.											
		P.O. No.			0063		0063		existing				
		Price			$460		$460						

REV. DATE									
	0	PREPARED	EHS	1/20/71	4				
	1				5				
	2				6				
	3				7				

FS 113 (10/66)

PCB-ARCH-EXT0374201

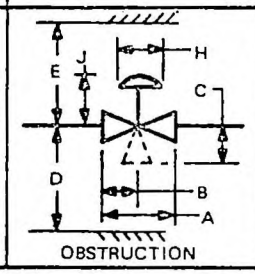
Monsanto

CONTROL VALVE SPECIFICATION

LOCATION	DIVISION	PLANT	SPEC NO.
WGK	002	WGK	IS- 2417 - 30
	AUTH NO. 2417	DEPT OR AREA 246	SHEET 1 OF 1

INSTRUMENT NUMBER	2417 - PV 301-S	→	FV 303-1	→	
SERVICE	PRESSURE	→	PRODUCT FLOW	PRODUCT FLOW	→
LINE NUMBER	CONTROL	→	1-302-4-A1A-21"	→	
PROCESS MATERIAL	AIR	STEAM	MCS 1016	ORTHO-CHLORO	
OPERATING DATA — FLOW TEMPERATURE	60 °F	324 °F	150° F	175° F	
OPERATING DATA — WORKING PRESSURE (PSIG INLET)	15 PSIA	80 PSIG			
OPERATING DATA — VALVE TO CLOSE AGAINST (PSIG)	15 PSIA	80 PSIG			
OPERATING DATA — SP GR AT FLOW TEMPERATURE	1.0 AIR	0.123 #/FT³	1.35	1.0	
OPERATING DATA — VAPOR PRESSURE AT TEMP, MM HG	—	—			
DESIGN COND GAS @ 60 F 14.7 PSIA LIQUID @ FLOW TEMP — FLUID	LIQ / (GAS) / STM	LIQ / GAS / STM	(LIQ) / GAS / STM	(LIQ) / GAS / STM	
DESIGN COND — NORMAL FLOW – UNITS	460 SCFH	275 #/HR	9.5 GPM	15.6 GPM	
DESIGN COND — MAXIMUM FLOW – UNITS (REQUIRED)	500 SCFH	275 #/HR	14.0 GPM	23.0 GPM	
DESIGN COND — △P PSIG	14.7	87	3	3	
DESIGN COND — % TRAVEL & Cv AT ~~DESIGN~~ CONDITIONS	45 / Cv = 31.2	65 / Cs = 2.9	71% / 9	90% / 16	
VALVE SPECIFICATION — VALVE BODY SIZE	1"	→	1½"	→	
VALVE SPECIFICATION — BODY RATING & END CONNECTION	150 # / SCR / (FLG)	/ SCR. / (FLG)	150 # / SCR / (FLG)	150 # / SCR / FLG	
VALVE SPECIFICATION — BODY MATERIAL	CARBON STL	→	316 SS	→	
VALVE SPECIFICATION — TRIM SIZE OR MAXIMUM Cv Cv and Cs	¾" / 209	¾" (5.94 Cv) / 10.5	1¼" / 22.6	→	
VALVE SPECIFICATION — SEATS	(SP) / DP	SP / DP	(SP) / DP	(SP) / DP	
VALVE SPECIFICATION — TRIM MATERIAL	316 SS	→	MICRO FORM	→	
VALVE SPECIFICATION — TYPE INNER VALVE	MICRO-FLUTE	→			
VALVE SPECIFICATION — PACKING	TEFLON V RING	→			
VALVE SPECIFICATION — GUIDING	SKIRT / (TOP) / BTM	SKIRT / TOP / BTM	SKIRT / (TOP) / BTM	SKIRT / (TOP) / BTM	
VALVE SPECIFICATION — VALVE ACTUATOR	(DIAPH) / PISTON	DIAPH / PISTON	DIAPH / PISTON	DIAPH / PISTON	
VALVE SPECIFICATION — SIGNAL FROM INSTRUMENT (PSIG)	3-15 PSIG	→	3-15 PSIG	→	
VALVE SPECIFICATION — AIR PRESSURE TO OPERATOR	3-15 PSIG	→	3-15 PSIG	→	
VALVE POSITIONERS — MODEL NO.	NO				
VALVE POSITIONERS — 3 GAGES / BYPASS	— / —				
I/P TRANSDUCER — MODEL NO.	NO				
I/P TRANSDUCER — SIGNAL	—				
PIPED & MOUNTED AIR SUPPLY REGULATOR	~~YES~~ / (NO)	YES / (NO)	YES / (NO)	YES / (NO)	
ON AIR FAILURE VALVE	CLOSES / OPENS	(CLOSES) / OPENS	(CLOSES) / OPENS	(CLOSES) / OPENS	
FLOW TENDS TO	CLOSE / (OPEN)	CLOSE / OPEN	CLOSE / OPEN	CLOSE / OPEN	
AIR SUPPLY TO VALVE (PSIG)	3-15 PSIG	→			
REMARKS — ACCESSORIES OR SPECIAL FEATURES			THIS		
REMARKS — COMMENTS	VALVE FLUID WILL BE AIR OR STEAM DEPENDING ON THE OPERATING SITUATION		SURPLUS VALVE SER. NO. 46 12220 REPLACES FV 303-1 Purchased on 2417-9-0020 ch. 1		

DIMENSIONS



A. FACE TO FACE	7¼"		8 3/4"
B. FACE TO CENTER	3½"		4 3/8"
C. FACE TO CENTER	3 13/16"		4 3/8"
D. CLEARANCE	24"		24"
E. CLEARANCE	24"		30"
H. ACTUATOR DIAMETER	11 1/8"		13⅛"
J. ACTUATOR HEIGHT	12 13/16"		23 3/4

2 Body

PURCH.			
MANUFACTURER	FISHER		FISHER
CATALOG NUMBER	667-A		667Z
PURCHASE ORDER NUMBER	0020 ch 1		SURPLUS
PRICE			

REV								
	0	PREPARED	EHS	4/27/71	3			
	1	Revised Spare FV303-1	EAH	6/1/71	4			
	2				5			

ES 110 (REV 2/70)

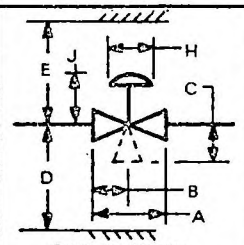
PCB-ARCH-EXT0374202

Monsanto

CONTROL VALVE SPECIFICATION

LOCATION	DIVISION	PLANT	SPEC NO.	REV
WGL	002	WGK	IS-2417-30	
	AUTH NO. 2417	DEPT OR AREA 246	SHEET 2 OF	3

INSTRUMENT NUMBER		2417-	TV 325-3		LV 305-3		→						
SERVICE			TEMP		LEVEL								
LINE NUMBER			CWI-E1D2-2"		1-350-1-F2C2-3"								
PROCESS MATERIAL			WATER		MCS 1016		ORTHO-CHLORO						
OPERATING DATA	FLOW TEMPERATURE		180 °F		320 °F								
	WORKING PRESSURE (PSIG INLET)		15 PSIG		10 PSIG								
	VALVE TO CLOSE AGAINST (PSIG)		65 PSIG		40 PSIG								
	SP GR AT FLOW TEMPERATURE		1.0		1.25								
	VAPOR PRESSURE AT TEMP, MM HG		400		6.5								
DESIGN COND GAS @ 60 F 14.7 PSIA LIQUID @ FLOW TEMP	FLUID		(LIQ) GAS ~~STM~~		(LIQ) ~~GAS~~ ~~STM~~		LIQ GAS STM			LIQ GAS STM			
	NORMAL FLOW – UNITS		200 GPM		10 GPM								
	MAXIMUM FLOW – UNITS (REQUIRED)		200 GPM		15 GPM		286 GPM						
	△ P		15 PSI		20 PSI								
	% TRAVEL & Cv AT DESIGN CONDITIONS		85%	36.4	55%	2.8	70%	4.5					
VALVE SPECIFICATION	VALVE BODY SIZE		1½"		1"								
	BODY RATING & END CONNECTION		125# SCR (FLG)		150# SCR (FLG)			SCR FLG			SCR FLG		
	BODY MATERIAL		CAST IRON		STEEL								
	TRIM SIZE OR MAXIMUM Cv		1⅞"	39.2	¾"	9.86							
	SEATS		(SP) ~~DP~~		(SP) ~~DP~~		SP DP			SP DP			
	TRIM MATERIAL		STAINLESS STL		STAINLESS STL								
	TYPE INNER VALVE		LINEAR CAGE		MICRO FORM VALVE PLUG								
	PACKING		TFE V RING		TFE V RING								
	GUIDING		(SKIRT) ~~TOP~~ ~~BTM~~		(SKIRT) ~~TOP~~ ~~BTM~~		SKIRT TOP BTM			SKIRT TOP BTM			
	VALVE ACTUATOR		(DIAPH) PISTON		DIAPH PISTON		DIAPH PISTON			DIAPH PISTON			
	SIGNAL FROM INSTRUMENT (PSIG)		3-15 PSIG		3-15 PSIG								
	AIR PRESSURE TO OPERATOR		3-15 PSIG		3-15 PSIG								
VALVE POSITIONERS	MODEL NO.		NONE		NONE								
	3 GAGES BYPASS												
I/P TRANSDUCER	MODEL NO.		NONE		NONE								
	SIGNAL												
PIPED & MOUNTED AIR SUPPLY REGULATOR			~~YES~~ (NO)		YES (NO)		YES NO			YES NO			
ON AIR FAILURE VALVE			CLOSES (OPENS)		(CLOSES) OPENS		CLOSES OPENS			CLOSES OPENS			
FLOW TENDS TO			CLOSE (OPEN)		CLOSE (OPEN)		CLOSE OPEN			CLOSE OPEN			
AIR SUPPLY TO VALVE (PSIG)			3-15		3-15								
REMARKS	ACCESSORIES OR SPECIAL FEATURES												
	ACTUATOR NUMBER		34		30								
	DESIGN NOTE		—		DO NOT EXPOSE TO -305-TEMP								
DIMENSIONS	A. FACE TO FACE		8¾"		7¼								
	B. FACE TO CENTER		4⅜"		3⅝								
	C. FACE TO CENTER		2 7/16"		2½								
	D. CLEARANCE		24"		24"								
	E. CLEARANCE		30"		30"								
	H. ACTUATOR DIAMETER		13 1/8		11⅜								
	J. ACTUATOR HEIGHT		19 5/8		18 3/16								



PURCH.			
MANUFACTURER	FISHER	FISHER	
CATALOG NUMBER	657-ED	667-ES	
PURCHASE ORDER NUMBER	0070	0020	
PRICE	# 355	# 330	

REV								
0	PREPARED	EHS	10/20/70	3	REVISED ENTIRE SHEET	EHS	11/27/71
1	CHG SPECS TV-325-2	EHS	4/10/71	4			
2				5			

ES 110 (REV 2/70)

PCB-ARCH-EXT0374203

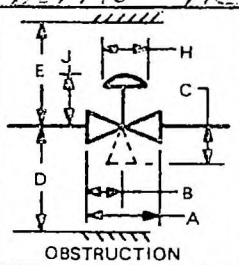
PHASE 2

Monsanto

CONTROL VALVE SPECIFICATION

LOCATION	DIVISION	PLANT	SPEC NO.
WGK	002	WGK	IS-2417-30
	AUTH NO.	DEPT OR AREA	SHEET / REV
	2417	246	4 OF / 0

INSTRUMENT NUMBER		2417-	XCV-331-5			XCV 103-1			XCV 103-2								
SERVICE			ON-OFF			ON-OFF			ON-OFF								
LINE NUMBER			1-331-2-F2C2-1"			1-103-1-F2C2-2"			—								
PROCESS MATERIAL			AROCLOR			BI PHENYL			BI PHENYL								
OPERATING DATA	FLOW TEMPERATURE		150 °F			210 °F			210 °F								
	WORKING PRESSURE (PSIG INLET)		75			~ 2			~ 2								
	VALVE TO CLOSE AGAINST (PSIG)		75			~ 2			~ 2								
	SP GR AT FLOW TEMPERATURE		1.25			1.0			1.0								
	VAPOR PRESSURE AT TEMP, MM HG		~ 1 MM			0.02			0.02								
DESIGN COND GAS @ 60 F 14.7 PSIA LIQUID @ FLOW TEMP	FLUID		(LIQ)	GAS	STM	(LIQ)	GAS	STM	(LIQ)	GAS	STM	LIQ	GAS	STM			
	NORMAL FLOW — UNITS		1.0 GPM			—			—								
	MAXIMUM FLOW — UNITS (REQUIRED)		3.0 GPM			—			—								
	△ P		75 PSI			2			2								
	% TRAVEL & Cv AT DESIGN CONDITIONS		ON	OFF		ON	OFF		ON	OFF							
VALVE SPECIFICATION	VALVE BODY SIZE		1"			2"			2"								
	BODY RATING & END CONNECTION		150#	SCR	(FLG)	150#	SCR	(FLG)	150#	SCR	(FLG)		SCR	FLG			
	BODY MATERIAL		DUCTILE IRON			DUCTILE IRON			DUCTILE IRON								
	TRIM SIZE OR MAXIMUM Cv		—	7.8		—	170		—	170							
	SEATS TEFLON SLEEVE		SP	(DP)		SP	(DP)		SP	(DP)		SP	DP				
	TRIM MATERIAL		DUCTILE IRON			→			→								
	TYPE INNER VALVE		PLUG			→			→								
	PACKING		TEFLON			→			→								
	GUIDING		SKIRT	TOP	BTM	SKIRT	TOP	BTM	SKIRT	TOP	BTM	SKIRT	TOP	BTM			
	VALVE ACTUATOR		DIAPH	(PISTON)		DIAPH	(PISTON)		DIAPH	(PISTON)		DIAPH	PISTON				
	SIGNAL FROM INSTRUMENT (PSIG)		—														
	AIR PRESSURE TO OPERATOR		60 PSIG			→			→								
VALVE POSITIONERS	MODEL NO.																
	3 GAGES	BYPASS															
I/P TRANSDUCER	MODEL NO.																
	SIGNAL																
PIPED & MOUNTED AIR SUPPLY REGULATOR			YES	(NO)		YES	NO		YES	(NO)		YES	NO				
ON AIR FAILURE VALVE			(CLOSES)	OPENS		(CLOSES)	OPENS		(CLOSES)	OPENS		CLOSES	OPENS				
FLOW TENDS TO			CLOSE	OPEN		CLOSE	OPEN		CLOSE	OPEN		CLOSE	OPEN				
AIR SUPPLY TO VALVE (PSIG)																	
REMARKS	ACCESSORIES OR SPECIAL FEATURES					LIMIT SWITCH			→								
	BELLOWS VALVAIR					ON - OPEN			→								
	B9201 LUBRICATOR		YES			YES			→								
	ASCO 8321A SOLENOID		YES			YES			→								
	BETTIS ACTUATOR		CB 415 SR60			CR 420 SR60			→								
DIMENSIONS	A. FACE TO FACE																
	B. FACE TO CENTER																
	C. FACE TO CENTER																
	D. CLEARANCE																
	E. CLEARANCE																
	H. ACTUATOR DIAMETER																
	J. ACTUATOR HEIGHT																



PURCH.	MANUFACTURER		DURCO			DURCO			DURCO								
	CATALOG NUMBER		G11			G11			G11								
	PURCHASE ORDER NUMBER		0064			0064			0064								
	PRICE		# 236			# 325			# 325								

REV																	
	0	PREPARED	EMS	1/29/71		3											
	1					4											
	2					5											

ES 110 (REV 2/70)

PCB-ARCH-EXT0374204

Per 8*
4*
5*

Monsanto COMPANY — LOCATION WGK	*DIFFERENTIAL PRESSURE *INSTRUMENT SPECIFICATIONS	DIVISION 002 / AUTH NO. 2417	PLANT WGK / DEPT OR AREA 246	* SPEC NO. IS-2417-3 / SHEET 4 OF 5

1	Instrument No.			2417 -	LIA-328-1			FT406-1		FT418-1						
	Service				LEVEL			FLOW to #6		N2 to #9 chlor*						
					INDICATION			Chlorinator								
	Equipment No. or Line No. & Size				-328-											
	Process Material				AROCLOR					NITROGEN						
3	CASE	Blind, Indicating, Record, Control, Transmit			INDICATING											
		Mounting: Flush, Surface Yoke			NOZZLE											
		CHART	Size and Type													
			Range													
			Drive	Speed												
		SCALE	Size & Type		3-15 PSIG LOCAL PRESS GAGE											
			Range		0-100 LIN											
	DIFFERENTIAL UNIT	Flow, Level, Pressure			LEVEL			FLOW								
		Bellows, Diaphragm, Other			DIAPHRAGM			DIA.								
7*		*Span & Units			150"			100" W.C.		225" W.C.						
		Range Limits			20 TO 205" WC											
		Body Rating @ 60°F			275 #											
6*		*Body Material			C.S.			C.S								
		Element Material			316 S.S.			316 SS								
		Wetted Parts Material			C.S. + 316 SS			C.S. & 316 SS								
		Extended Diaph. Length			—											
		Fluid Sp. Gr.			1.15					No						
	SIGNALS	PROCESS INPUT	Liquid, Gas, Cond. Vapor		LIQUID					GAS						
			Operating Pressure		ATM					30 PSIG						
		INSTRUM. OUTPUT	Range & Units		3-15 PSIG											
			To		0-100 LIN PRESS GAUGE											
		Power Supply – Electrical, Pneumatic			PNEU											
		Electrical Area Classification			WEATHER TITE											
	CONTROLLER	Proportional Band %														
		Auto-Reset Mode			NO / SLOW / FAST			NO / SLOW / FAST			NO / SLOW / FAST			NO / SLOW / FAS		
		Rate Mode			YES / NO			YES / NO			YES / NO			YES / NO		
		Auto-Manual By Pass			YES / NO			YES / NO			YES / NO			YES / NO		
		On Measurement Increase Instrument Output			INC. / DEC			INC. / DEC			INC. / DEC			INC. / DEC		
		Pipe & Mt'd Air Supply Reg.			(YES) / NO			YES / NO			YES / NO			YES / NO		
		Output Gage, 3½" Size			(YES) / NO			YES / NO			YES / NO			YES / NO		
	REMARKS	Accessories or Special Features									HONEYWELL			0-30 SCFM		
		FLANGE, 3" – 150# R.F.			YES						FE406-1			nitrogen		
		AIR SUPPLY SET, 2" GAGE			R-110-2M P-10?-YN						SEE SPEC			metered air		
		OUTPUT GAGE 0-100 LIN			YES						2417-ES-005			30 PSIG		
														INTEGRAL		
														ORIFICE @ 25"		
														225" WATER		
2	PURCH.	Manufacturer			FOXBORO						FOXBORO			FOXBORO		
		Catalog No.			13FA2-MK-315						13A			13A		
		P.O. No.			0043						SURPLUS			SURPLUS		
		Price			$ 400											

REV. DATE										
	0	PREPARED	EHJ	1/4/71	4					
	1	Added FT406-1			5					
	2				6					
	3				7					

FS 117 (10/66)

PCB-ARCH-EXT0374205

PHASE 2

Per 8*
4*
5*

Monsanto COMPANY	*DIFFERENTIAL PRESSURE *INSTRUMENT SPECIFICATIONS	DIVISION 002	PLANT WGK	* SPEC NO. IS-2417-3E
LOCATION WGK		AUTH NO. 2417	DEPT OR AREA 246	SHEET 5 OF 5

1	Instrument No.	2417-	FT-349-1	FT-541-1		
	Service		FLOW TO -348-	FLOW TO 539, 540		
	Equipment No. or Line No. & Size		1-349-1-A2C12-1½"	1-541-1-A11-1½"		
	Process Material		AROCLOR	AROCLOR		
3	CASE: Blind, Indicating, Record, Control, Transmit		BLIND	INDIC, TRANS		
	CASE: Mounting: Flush, Surface Yoke		YOKE	YOKE		
	CASE: CHART: Size and Type					
	CASE: CHART: Range					
	CASE: CHART: Drive / Speed					
	CASE: SCALE: Size & Type					
	CASE: SCALE: Range					
	DIFFERENTIAL UNIT: Flow, Level, Pressure		FLOW		CONSTRUCTION NOTE:	
	DIFFERENTIAL UNIT: Bellows, Diaphragm, Other		DIAPHRAGM		USE EXISTING	
7*	DIFFERENTIAL UNIT: *Span & Units		0-400" WC	0-100" WC	INTEGRAL ORIFICE	
	DIFFERENTIAL UNIT: Range Limits		0-200 TO 0-850"	0-20 TO 0-205"	FLOW TRANSMITTER	
	DIFFERENTIAL UNIT: Body Rating @ 60°F		1500 PSI		ON FLOW TO 539 &	
6*	DIFFERENTIAL UNIT: *Body Material		316 SS	→	540 FOR FT-349-1	
	DIFFERENTIAL UNIT: Element Material		316 SS	→	(USE EXISTING 1900 FT 32)	
	DIFFERENTIAL UNIT: Wetted Parts Material		316 SS	→		
	DIFFERENTIAL UNIT: ~~Extended Diaph. Length~~ / PROCESS FLOW TEMP		212 °F	175 °F		
	DIFFERENTIAL UNIT: Fluid Sp. Gr. @ FLOW TEMP / @ 60°F		1.45 / 1.55	1.34 / —		
	SIGNALS: PROCESS INPUT: Liquid, Gas, Cond. Vapor		LIQUID	→		
	SIGNALS: PROCESS INPUT: Operating Pressure		90.0 PSIA	65 PSIG		
	SIGNALS: INSTRUM. OUTPUT: Range & Units		3-15 PSIG	→		
	SIGNALS: INSTRUM. OUTPUT: To		FRC 349-1	FRCA-541-1		
	SIGNALS: Power Supply – Electrical, Pneumatic		PNEUMATIC	→		
	SIGNALS: Electrical Area Classification		GEN PURP	→		
	CONTROLLER: Proportional Band %					
	CONTROLLER: Auto-Reset Mode		NO / SLOW / FAST	NO / SLOW / FAST	NO / SLOW / FAST	NO / SLOW / FAST
	CONTROLLER: Rate Mode		YES / NO	YES / NO	YES / NO	YES / NO
	CONTROLLER: Auto-Manual By Pass		YES / NO	YES / NO	YES / NO	YES / NO
	CONTROLLER: On Measurement Increase Instrument Output		INC. / DEC	INC. / DEC	INC. / DEC	INC. / DEC
	Pipe & Mt'd Air Supply Reg. FIXED PRESS		(YES) / NO	(YES) / NO	YES / NO	YES / NO
	Output Gage, 3½" Size		(YES) / NO	(YES) / NO	YES / NO	YES / NO
	REMARKS: Accessories or Special Features VISCOSITY		9.0 CP	CONSTRUCTION		
	REMARKS: PROCESS CONNECTION		½" N.P.T.	NOTE: CONNECT		
	REMARKS: PROCESS FLOW NORMAL / MAX		6 GPM / 10 GPM	WITH 316 SS		
	REMARKS: FURNISH WITH INTEGRAL ORIFICE ATTACH		0.350" BORE	TUBING		
	REMARKS: ORIFICE & MANIFOLD MTL		316 SS			
	REMARKS: CHEMALLOY GASKET FOR HI TEMP		YES			
	REMARKS:		6-10 GPM @ 400" WC			
2	PURCH: Manufacturer		FOXBORO	FOXBORO		
	PURCH: Catalog No.		13HA-HS2	13A-MSC		
	PURCH: P.O. No.		EXISTING	0062		
	PURCH: Price		# 450	# 350		

REV.	DATE						
0		PREPARED	EHS	1/20/71	4		
1		CHG SPAN FT-541-1	EHS	4/27/71	5		
2					6		
3					7		

ES 117 (10/66)

PCB-ARCH-EXT0374206

Por 10*
4*
5*

Monsanto COMPANY — LOCATION WGK	* LEVEL DISPLACER *OR FLOAT SPECIFICATIONS	DIVISION 002 / AUTH NO. 2417	PLANT WGK / DEPT OR AREA 246	* SPEC NO. IS-2417-34 / SHEET 1 OF 3 / REV 3

1

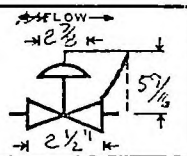
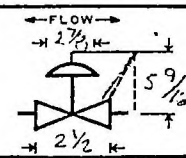
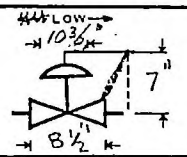
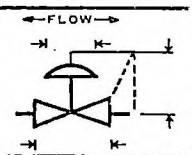
Instrument No.		2417 -	LIA-305-3		2			LIA-312-3								
Service			LEVEL					LEVEL								
Equipment No.			305					312								
BODY	Blind, Controlling, Transmitting		TRANS,					TRANS								
	Type		INTERNAL DIS.					INTERNAL DIS								
	Material		CARBON STL.					CARBON STL								
7*	*Connection Size & Rating		4", 150 # RF					4", 150 # R.F.								
	Connection Arrangement		(TOP)	BTM.	SIDE	TOP	BTM.	SIDE	(TOP)	BTM.	SIDE	TOP	BTM.	SIDE		
	Rotatable Head Required		YES	~~NO~~		YES	NO		YES	~~NO~~		YES	NO			
	Vent or Drain – Size & Rating															
	Cooling Fin or Extension		YES						YES							
	Provide Pilot Not Crossed Out and Orient Connections as Shown		~~LH~~ RH			LH RH			~~LH~~ RH			LH RH				
8*	IN-TERNALS *Sensor Type	*Material	DISPL	304 SS					DISPL	304 SS						
9*	*Sensor Size or Length		146" X 3/4			3			125" X 3/4"			3				
	Torque Tube Material		K MONEL						K MONEL							
	Extension Length		8.5"						8.5"							
SIGNALS	Transmitting Output	Range & Units	3-15 PSIG						3-15 PSIG							
		To	PRESS GAGE						LI-312-3							
	Controller Output	Range & Units	—						—							
		To	—						—							
	Power Supply – Electrical, Pneumatic		PNEU, 80 PSIG						PNEU, 80 PSIG							
	Electrical Area Classification		WEATHER TITE						WEATHER TITE							
CON-TROLLER	Proportional Band %															
	Auto – Reset Mode		NO	SLOW	FAST	NO	SLOW	FAST	NO	SLOW	FAST	NO	SLOW	FAST		
	On Level Increase Instrument Output —		INC	DEC		INC	DEC		INC	DEC		INC	DEC			
OPERATING CONDITIONS	Fluid	Upper / Lower	AROCLOR						AROCLOR							
	Sp. Gr. @ Oper. Temp.	Upper / Lower	1.26	1.32					1.26	1.32						
	Temperature °C	Normal / Max.	300	345					300	345						
	Pressure PSIA	Normal / Max.	2.7	0					15	15						
	Piped & Mt'd Air Supply Reg.		YES	~~NO~~		YES	NO		YES	~~NO~~		YES	NO			
REMARKS	Accessories or Special Features															
	AIR FIN EXTENSION		YES						YES							
	SUPPLY PRESSURE REGULATOR		YES						YES							
	INDICATING GAUGE 3½" DIAM, 0-100 SCALE		YES						YES							
	ON LEVEL INCREASE: TRANSMITTER OUTPUT		INCREASES						INCREASES							
2	PURCH. Manufacturer		FISHER						FISHER							
6*	*Catalog No.		2500T-249BP						2500T-249BP							
	P.O. No.		0020						0020							
	Price		# 650 EST						# 650 EST							

REV. DATE						
0	PREPARED	EHJ	10/26/70	4		
1	CHG EXTENSION LENGTH	EHJ	11/30/70	5		
2	CHG LICA-305-3 TO LIA-305-3	EHJ	12/2/70	6		
3	CHG DISP & EXTN LENGTH + 305/312	EHJ	1/4/71	7		

ES 120 (10/66)

PCB-ARCH-EXT0374207

Monsanto COMPANY — LOCATION WGK	*DIRECT OPERATED *PRESSURE REGULATING *VALVE SPECIFICATIONS	DIVISION 002 / AUTH NO. 2417	PLANT WGK / DEPT OR AREA 246	* SPEC NO. IS-2417-42 / SHEET 5 OF ___ / REV 1

1	Valve No.		2417-	PCV-303-1			PCV-303-2			PCV-308-2							
	Service			TPG-303-1			TPG-303-2			STEAM TO STEAM JET							
	Line Number & Size			FIELD CABINET			→			SM-1-F3817-1½"							
	Process Material			INST AIR			→			STEAM							
	Operating Data	Flow Temperature		AMBIENT			→			390°F							
		Working Pressure (PSIG Inlet)		60			→			200 PSIG							
		Valve to Close Against (PSIG.)		60			→			200 PSIG							
		Sp. Gr. @ Flow Temp.		1.0			→			2.1 FT³/#							
	Design Conditions Gas @ 60°F 14.7 PSIA Liquid @ Flow Temp.	Normal Flow		0			→			500 #/HR							
		Max. Flow		0			→			600 #/HR							
		Units: SCFM, SCFH, GPM or #/Hr.		SCFH			→			#/HR							
		Fluid		LIQ.	(GAS)	STM	LIQ.	(GAS)	STM	LIQ.	GAS	(STM)	LIQ.	GAS	STM		
		Inner Valve Travel, % @ Design Flow		—			—										
		ΔP	C_V (Calc.) @ Design Cond.	55	—		50	—									
		Calculation Sheet No.		—			—										
8*	Valve Specifications	*Valve Body Size		¼" NPT			→			1½"							
		Valve Port Size		—			—			FULL							
		Body Rating & Conn. Size		250PSI	¼" SCRD		→			250#	1½" R.F.						
7		Body Material		ALUMINUM			→			HI TENSILE IRON							
		Trim Material		BRASS			→			STAINLESS STL							
		Type Inner Valve		BUNA N			→			STAINLESS STL							
		Seats (Double or Single)		(SP)	DP		(SP)	DP		(SP)	DP		SP	DP			
		Valve actuator (Diaph or ~~Piston~~)		(DIAPH)	PISTON		(DIAPH)	PISTON		(DIAPH)	PISTON		DIAPH	PISTON			
		Matl of Const (Diaph or ~~Piston~~)		BUNA N			→			STAINLESS STL							
		Lubricator	Isolating Valve	—	—		—	—		—	PILOT						
		Packing		—			—			NONE							
		Guiding		SKIRT	(TOP)	BTM	SKIRT	(TOP)	BTM	SKIRT	TOP	(BTM)	SKIRT	TOP	BTM		
	Spring Setting		PSIG	5			10			150 #							
9*	*Spring Range		PSIG	5-20			5-20			70-150 #							
	On Increased Pressure Valve			OPENS	(CLOSES)		OPENS	(CLOSES)		OPENS	(CLOSES)		OPENS	CLOSES			
	Type of Regulator									PILOT OPER. REDUCING VALVE							
	REMARKS	Accessories or Special Features															
		2" OUTPUT GAUGE		YES			YES										
		PANEL MOUNTING		YES			YES										
	DIMENSIONS																	
2	PURCHASING	Manufacturer		FISHER			→			FISHER							
6*		*Catalog No.		67RPTC			→			92B							
		P.O. No.		0042			0042			0042							
		Price		# 15			# 15			# 183							

REV.	DATE										
0	12/31/70	PREPARED	EHS	12/31/70	4						
1	12/31/70	ADDED PCV-308-2	EHS	12/31/70	5						
2					6						
3					7						

ES 1'09 (10/66)

PCB-ARCH-EXT0374208

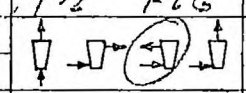
PHASE 2

Per 7*
4*

Monsanto COMPANY — LOCATION WGK

*ROTAMETER SPECIFICATIONS

DIVISION	PLANT	*SPEC NO.	
002	WGK	IS-2417-44	
AUTH NO.	DEPT OR NO.	SHEET	REV
2417	246	6 OF 6	1

Instrument No.				2417 -	FI 539-1		FI 540-1		FI 331-1			
Service					FLOW	→	→	→	→	→		
					INDICATION	→	→	→	→	→		
Process Material					AROCLOR	→	→	→	→	→		
Line No.					1-541-1-A11-1½"	→	→	→	1-331-2-F2816-1"	→		
Line Size, Schedule					1½", 40	→	→	→	1", 40	→		
SERVICE	Operating Conditions	Pressure	Temp.		20 PSIG	150°F	→	→	10 PSIG	150°F		
		S.P. Gr.	Visc. C.P.		1.34	7.0	→	→	1.25	7		
	Base Conditions	Pressure	Temp.		—	—	—	—	—	—		
		Sp. Gr.	Visc.		—	—	—	—	—	—		
	Inlet Pressure – Max.				90 PSIG	→	→	→	75 PSIG	→		
	Flow @ Base Conditions	Liquid			5.0 GPM	→	→	→	1.0 GPM	→		
		Gas			—	→	—	→	—	→		
		Steam			—	→	—	→	—	→		
	Fluid Character	Clean	Trans.	Steady	CLEAN, TRANS	→	→	→	TRANS	→		
		Slurry	Opaque	Pulse	STEADY	→	→	→	→	→		
3 CASE	Indicating, Recording, Transmitting											
	Chart Or Scale	Size & Type										
		Range										
		Drive & Speed										
SIGNAL	Instrument Output	Range & Units										
		To										
	Power Supply: Electrical, Pneumatic											
	Electrical Area Classification											
6* BODY	*Connection – Size & Rating				1½" FLG	→	→	→	1" FLG	→		
	Arrangement of Connections	Inlet										
		Outlet										
	Metering Tube Size (by Vendor)				8	→	→	→	6	→		
	Meter △P Normal (by Vendor)				11" WC, AT 7.6 GPM	→	→	→	9.7" WC, AT 4.9 GPM	→		
	Materials Of Construction	Body Fittings			316 SS	→	→	→	→	→		
		Metering & Ext. Tube			GLASS	→	→	→	→	→		
		Float			316 SS, BSVT-84	→	→	→	316 SS, BSVT-64	→		
		Packing or Gaskets			TEFLON	→	→	→	→	→		
REMARKS	Accessories or Special Features											
	LAMINATED SAFETY GLASS WINDOW				YES	→	→	→	→	→		
	GLASS TUBE ROTAMETER				YES	→	→	→	→	→		
	SAFE WORKING PRESSURE				130 PSIG	→	→	→	175 PSIG	→		
	SCALE LENGTH				10"	→	→	→	→	→		
	SCALE READING				PERCENTAGE	→	→	→	→	→		
	MAX FLOW (AROCLOR) GPM				13	→	→	→	4.1	→		
2 5* PURCH.	Manufacturer				FISCHER & PORTER	→	→	→	→	→		
	*Catalog Number				10A1736A	→	→	→	→	→		
	Purchase Order Number				0063	→	0063	→	0063	→		
	Price				# 270	→	# 270	→	# 204	→		

REV.										
	0	PREPARED	EHS	1/27/71	4					
	1	CHG FLOAT SPECS	EHS	3/1/71	5					
	2	CHG CATALOG NO	EHS	4/5/71	6					
	3				7					

ES 102 (10/66)

PCB-ARCH-EXT0374209

VARIANCE # 1

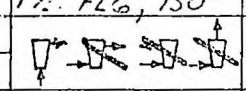
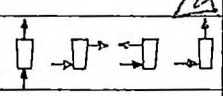
Per 7*

4*

Monsanto COMPANY — LOCATION WGK

*ROTAMETER SPECIFICATIONS

DIVISION	PLANT	*SPEC NO.
002	WGK	IS-2417-H
AUTH NO.	DEPT OR NO.	SHEET / REV
2417	246	7 OF 7 / 1

Instrument No.				2417 -	FT-303-1	→	→	FT-303-3	→	→	
Service											
Process Material					MCS-1016	ORTHO-CHLORO		MCJ-1016		ORTHO-CHLORO	
Line No.					1-302-4-A11-2"			1-302-1-A11-4"			
Line Size, Schedule					2", 40			4", 40			
SERVICE	Operating Conditions	Pressure PSIA	Temp. °C		14.7 / 65	14.7 / 80		1.0 / 65		7.0 / 80	
		S.P. Gr.	Visc. C.P.		1.35 / 7.0	1.00 / 1.5		1.35 / 7.0		1.00 / 1.5	
	Base Conditions	Pressure	Temp.		— / —	— / —		— / —		— / —	
		Sp. Gr.	Visc.		— / —	— / —		— / —		— / —	
	Inlet Pressure – Max. PSIA				14.7	14.7		1.0		7.0	
	Flow @ ~~Base~~ OPERATING C Conditions	Liquid	MIN / MAX GPM		9.5 / 14	15.6 / 28		25 / 27		62.2 / 69.1	
		Gas			—	—		—		—	
		Steam			—	—		—		—	
	Fluid Character	Clean	Trans.	Steady	LIQUID-STEADY	→		→		→	
		Slurry	Opaque	Pulse	CLEAN	→		→		→	
3 CASE	Indicating, Recording, Transmitting				INDICATE +			INDICATE +			
	Chart Or Scale	Size & Type			TRANSMIT			TRANSMIT			
		Range			5" SCALE			5" SCALE			
		Drive & Speed			8-100 %			8-100 %			
SIGNAL	Instrument Output	Range & Units			3-15 PSIG			3-15 PSIG			
		To			FIC-303-1			FI-303-3			
	Power Supply: ~~Electrical~~, Pneumatic				20 PSIG			20 PSIG			
	Electrical Area Classification				—			←			
6* BODY	*Connection – Size & Rating				1½" FLG, 150#		(2)	2" FLG, 150#			
	Arrangement of Connections	Inlet									
		Outlet									
	Metering Tube Size (by Vendor)				MB-35-5-SV			M11-24-5-SV			
	Meter △P Normal (by Vendor) AT ANY FLOW				36" WC	38" WC		35.6" WC		37.5" WC	
	Materials Of Construction	Body Fittings			316 SS			CARBON STL			
		Metering & Ext. Tube			316 SS			CARBON STL			
		Float			316 SS			316 SS			
		Packing or Gaskets			TEFLON			TEFLON			
REMARKS	Accessories or Special Features				NEW TUBE & FLOAT TO BE INSTALLED IN EXISTING (4)						
	ROTAMETER MAX CAPACITY @ OPERATING CONDITIONS				METERS by FIELD 29.3 GPM	35.0 GPM		83.3 GPM		99.2 GPM	
	H2O EQUIV				35.0 GPM	35.0 GPM		99.2 GPM		99.2 GPM	
	ACCURACY				± 2% F.S.			± 2% FS			
	AIR FILTER REG W/GAGE				YES			YES			
	NOTE 1. BOTH FLOWMETERS ARE TO BE SUITABLE FOR BOTH MCS-1016 & ORTHO-CHLORO SERVICE										
	NOTE 2. FIELD TO STEAM TRACE METERS & EXTENSION LINE (4)										
2 5* PURCH.	Manufacturer				FISCHER & PORTER			FISCHER & PORTER			
	*Catalog Number				10A 1152A-OK-1401KA-41			-1401KA41			
	Purchase Order Number				0012 ch.2			0012 ch2			
	Price				$600 EST			$509			

REV.									
	(0)	PREPARED	EHS	4/2/71	(4)				
	(1)	Added notes	EAH	6/3/71	(5)				
	(2)	REV on Instr	CJH	7/30/71	(6)				
	(3)				(7)				

FS 102 (10/66)

PCB-ARCH-EXT0374210

Per 10* 3* 4*

Monsanto COMPANY — LOCATION W6K	*FLOW MEASURING *ELEMENT SPECIFICATIONS	DIVISION 002	PLANT W6K	*SPEC NO. IS-2417-45-
		AUTH NO. 2417	DEPT OR AREA 246	SHEET 2 OF 4 — REV 2

1	Instrument No.		2417 -	FE-307-2	FE-307-5	FO 305-4
	Service				AROCLOR FLOW FROM FURNACE	RESTRICTING ORIFICE (1)
	Process Material			FUEL GAS	AROCLOR	AROCLOR
	Line No.			F27-2"	1-307-1-F2B16-8"	1-307-1-F2B16-8"
	Line Size, Schedule			2", 40	8", 40	8", 40
SERVICE	Upstream Operating Conditions	Flowing Press. P_f		28 PSIG	15 PSIG	15 PSIG
		Flowing Temp T_f		60°F	300°C	300°C
		Sp. Gr. @ T_f		.133 #/FT³	1.35	1.35
		Viscosity CP @ T_f		0.01	1.6	1.6
		Sp. Gr. @ 60°F		.133 #/FT³	———	———
		Supercompr. Factor @ T_f				
		Steam Quality, %				
		Steam Superheat, F				
	Flow at Base Conditions 60F & 14.73 PSIA Barometric Pressure at Location ____ In. Hg.	Liquid, Gas or Steam		GAS	LIQUID	LIQUID
		Minimum Flow		0	0	0
		Normal Flow		8960	600	600
		Maximum Flow		13500 (2)	600	600
		Units of Flow		SCFH	GPM	GPM
		Meter Range		0-44.61" WC.	0-50" W.C.	NONE
8*	FLANGES *Size & Type – W.N., S.O., Scrd., Van Stone(1)			2" W.N.	8" S.O.	8" W.N.
9*	*Rating & Facing			300# RF	300# RF	150# ASA
7→	Material – Flange & R.T.J. Ring or Gasket(1)			CARBON STEEL	CARBON STEEL	CARBON STL
	Taps – Type, Size & Orientation (R2.3 Std)			FLG ½" NPT SIDE	FLG ½" NPT SIDE	NONE
	ORIFICE PLATE Type of Plate (R2.3 Std)			PADDLE TYPE	PADDLE TYPE	PADDLE TYPE
	Plate Material & Thickness			304 SS, ⅛"	304 SS, ⅜"	304 SS, ⅜"
	Pipe ID (D), In.			2.067"	7.981"	7.981"
	Orifice ID (d), In.			1.06381"	5.04671	4.50027
	d/D Ratio (β)			0.51466	0.63254	.56387
6→	Meter Range – Inches Water Dry			40"	50"	ΔP = 2.0 PSI
	Type of Meter			FOX D/P	BARTON BELLOW	NONE
	Drain or Vent Hole			NONE	NONE	NONE
	Chart or Scale Range			0-10 SQ RT	0-10 SQ RT	NONE
	Chart Factor (2)			X 1350	X 60	NONE
	Calculation Sheet No.					
	REMARKS CAT NO. METER RUN OR ORIFICE FLANGE			M-30RWJ	30RS	
	CAT NO. ORIFICE PLATE			520	520	520
	ACCESSORIES			MFG. STD	MFG STD	
	GASKETS			ASBESTOS	ASBESTOS	ASBESTOS
	All orifice handles to be stamped on upstream					(ORIFICE
	side with "Inlet", bore dia, nom pipe ID, flange					PLATE ONLY)
	rating, instrument number and plate material					
2	PURCH. Manufacturer			DANIEL IND	→	→
5*	*Catalog Number			AS ABOVE	→	→
	Purchase Order Number			0041	0041	DELETE
	Price			#125		

REV								
	(0)	PREPARED	EHS	10/19/70	(4)			
	(1)	ADD FO 305-4	EHS	11/17/70	(5)			
	(2)	CHG METER RANGE	EHS	2/9/71	(6)			
	(3)				(7)			

PCB-ARCH-EXT0374211

Per 6*

3*

Monsanto COMPANY LOCATION WGK	PROCESS ACTUATED * SWITCHES SPECIFICATIONS	DIVISION 002	PLANT WGK	*SPEC NO. IS-2417-54
		AUTH NO. 2417	DEPT OR AREA 246	SHEET 1 OF 4 RE 1

1

Instrument No.	2417 —	LA-305-3.1	LA-305-3.2	LA-316-1.1	LA-316-1.2
Service		HIGH LEVEL ALARM	LOW LEVEL ALARM	HIGH LEVEL ALARM	LOW LEVEL ALARM
Equipment No. or Line No. & Size					
Process Material		INST AIR	INST AIR		
GENERAL: Press. Temp. – Level Flow Switch – Relay		PRESSURE	→		
GENERAL: Temperature	Normal / Max.	AMBIENT	AMBIENT		
GENERAL: Pressure PSIG	Normal / Max.	9 / 15	9 / 15		
GENERAL: Fluid (Level Only)	Upper / Lower				
GENERAL: Sp. Gr. @ Oper. Temp.	Upper / Lower				
5* ELEMENT: *Range & Units	PSIG	1 – 20	1 – 20		
ELEMENT: Pressure	Type Element & Material	DIAPHRAGM	DIAPHRAGM		
ELEMENT: Pressure	Conn. Size / Orientation	¼" NPT / BTM	¼" NPT / BTM		
ELEMENT: Temp.	Fill – Gas, Mercury, etc.				
ELEMENT: Temp.	Capillary – Length / Material				
ELEMENT: Temp.	Armor Material				
ELEMENT: Temp.	Bulb-Diameter / Length				
ELEMENT: Temp.	Bulb Type – Plain, Union				
ELEMENT: Temp.	Bulb Conn. – Size & Rating				
ELEMENT: Temp.	Well Material				
ELEMENT: Temp.	Well Conn. Size & Rating				
ELEMENT: Temp.	Lgth below Thread or Flange "U" (SEE NOTE)				
ELEMENT: Temp.	Lagging Extension "T" (SEE NOTE)				
ELEMENT: Level	Type & Material				
ELEMENT: Level	Connection Size & Rating				
ELEMENT: Level	Connection Arrangement				
ELEMENT: Level	Cooling Fin or Extension				
ELEMENT: Level	Float Material & Size				
ELEMENT: Flow	Connection or Body Size				
ELEMENT: Flow	Type Element & Matl.				
ELEMENT: Flow	Disc or Paddle Size				
SWITCH: Type – Mercury, Micro, etc.		MERCURY	MERCURY		
SWITCH: Contact Arrangement / Rating – Volts & Amps		SPDT, 4A/120V	SPDT, 4A/120V		
SWITCH: Set Point		14 PSIG	4 PSIG.		
SWITCH: On Measurement Increase Switch		~~OPENS~~ / ~~CLOSES~~	~~OPENS~~ / ~~CLOSES~~	~~OPENS~~ / ~~CLOSES~~	~~OPENS~~ / ~~CLOSES~~
SWITCH: Electrical Area Classification		G.P. NEMA 1	G.P. NEMA 1		
SWITCH: Conduit Conn. Size & Hub or K.O.		½"	½"		
SWITCH: Differential Range – Fixed, Adjustable		FIXED	FIXED		
REMARKS: Accessories or Special Features					
ADJUSTABLE SET POINT		YES	YES		
SWITCH FIELD-WIRED					
TO OPEN ON ALARM		YES	YES		
2 4* PURCH.: Manufacturer		MERCOID	→		
*Catalog No.		AP-153-R36	→		
P.O. No.		# 0015	# 0015	0015	0015
Price		18	18		

REV.						
0	PREPARED	EHS	10/26/70	4		
1	CHG. INST NO.	EHS	11/17/70	5		
2				6		
3				7		

113 (10/66)

NOTE: For explanation of dimensions U, T ref. to ISA RP-20.1 Pg. 16.

PCB-ARCH-EXT0374212

Per 6*

3*

1

5*

2

4*

Monsanto COMPANY — PROCESS ACTUATED * SWITCHES SPECIFICATIONS

LOCATION W6K

DIVISION	PLANT	*SPEC NO.	
002	W6K	IS-2417-54	
AUTH NO.	DEPT OR AREA	SHEET	RE
2417	246	2 OF 4	1

Instrument No. 2417 -		LA-312-3.1	LA-312-3.2	PA-312-6	PA-301-5
Service		HIGH LEVEL ALARM	LOW LEVEL ALARM	H PRESSURE ALARM	HI-PRESSURE ALARM
Equipment No. or Line No. & Size				312	
Process Material		INST AIR	→	NITROGEN	INST AIR
GENERAL	Press. Temp. – Level Flow Switch – Relay	PRESSURE	→	→	PRESSURE
	Temperature Normal Max.	AMBIENT	→	→	AMBIENT
	Pressure PSIG Normal Max.	9 PSIG 15 PSIG	→	0" WC 5" WC	3 PSIG 15 PSIG
	Fluid (Level Only) Upper Lower				
	Sp. Gr. @ Oper. Temp. Upper Lower				
ELEMENT	*Range & Units	1-20 PSIG	→	1-30" W.C.	1-20 PSIG
	Pressure: Type Element & Material	DIAPHRAGM	→	DIAPHRAGM	DIAPHRAGM
	Pressure: Conn. Size Orientation	¼" NPT BTM	→	½" NPT BTM	¼" NPT BTM
	Temp.: Fill – Gas, Mercury, etc.				
	Temp.: Capillary – Length Material				
	Temp.: Armor Material				
	Temp.: Bulb-Diameter Length				
	Temp.: Bulb Type – Plain, Union				
	Temp.: Bulb Conn. – Size & Rating				
	Temp.: Well Material				
	Temp.: Well Conn. Size & Rating				
	Temp.: Lgth below Thread or Flange "U" (SEE NOTE)				
	Temp.: Lagging Extension "T" (SEE NOTE)				
	Level: Type & Material				
	Level: Connection Size & Rating				
	Level: Connection Arrangement				
	Level: Cooling Fin or Extension				
	Level: Float Material & Size				
	Flow: Connection or Body Size				
	Flow: Type Element & Matl.				
	Flow: Disc or Paddle Size				
SWITCH	Type – Mercury, Micro, etc.	MERCURY	→	→	MERCURY
	Contact Arrangement Rating – Volts & Amps	SPDT, 4A/120V	→	→	SPDT, 4A/120V
	Set Point	14 PSIG	4 PSIG	5" W.C.	14 PSIG
	On Measurement Increase Switch	~~OPENS~~ ~~CLOSES~~	~~OPENS~~ ~~CLOSES~~	OPENS ~~CLOSES~~	OPENS ~~CLOSES~~
	Electrical Area Classification	G.P. NEMA 1	→	WEATHER RESISTANT	G.P. NEMA 1
	Conduit Conn. Size & Hub or K.O.	½"	→	→	½"
	Differential Range – Fixed, Adjustable	FIXED	→	→	FIXED
REMARKS	Accessories or Special Features			RANGE P1	
	ADJUSTABLE SET POINT	YES	→	YES	YES
	SWITCH FIELD-WIRED TO OPEN ON ALARM	YES	→	YES	YES
PURCH.	Manufacturer	MERCOID	→	→	MERCOID
	*Catalog No.	AP-153-R36	→	PGW-153	AP-153-R36
	P.O. No.	0015	0015	SPARE	0061
	Price	$18	→	$60	$13

REV.							
0	PREPARED	EHS	10/26/70	4			
1	ADDED PA-312-6	EHS	11/25/70	5			
2	ADDED PA-301-5	EHS	2/25/71	6			
3				7			

ES 113 (10/66)

PCB-ARCH-EXT0374213

ORDER LA-328-1.2

Per 6*

Monsanto COMPANY — LOCATION WG1K

PROCESS ACTUATED * SWITCHES SPECIFICATIONS

DIVISION	PLANT	*SPEC NO.
002	WGK	IS-2417-5
AUTH NO.	DEPT OR AREA	SHEET / RF
2417 (1)	246	3 OF 4 / C

1	Instrument No.	2417-	LA-329-1	LA-328-1.1	LA-328-1.2
	Service		HI LEVEL ALARM	HI LEVEL ALARM	LO LEVEL ALARM (1)
	Equipment No. or Line No. & Size		329	328	328
	Process Material		INST AIR	INST AIR	INST AIR
GENERAL	Press. Temp. – Level Flow Switch – Relay		PRESS	PRESS	PRESS
	Temperature — Normal / Max.		AMBIENT	AMBIENT	AMBIENT
	Pressure PSIG — Normal / Max.		3 / 15	3 / 15	3 / 15
	Fluid (Level Only) — Upper / Lower				
	Sp. Gr. @ Oper. Temp. — Upper / Lower				
5*	*Range & Units	PSIG	1-20	1-20	1-20
ELEMENT	Pressure — Type Element & Material		DIAPHRAGM	DIAPHRAGM	DIAPHRAGM
	Pressure — Conn. Size / Orientation		¼" NPT / BTM	¼" NPT / BTM	¼" NPT / BTM
	Temp. — Fill – Gas, Mercury, etc.				
	Temp. — Capillary – Length / Material				
	Temp. — Armor Material				
	Temp. — Bulb-Diameter / Length				
	Temp. — Bulb Type – Plain, Union				
	Temp. — Bulb Conn. – Size & Rating				
	Temp. — Well Material				
	Temp. — Well Conn. Size & Rating				
	Temp. — Lgth below Thread or Flange "U" (SEE NOTE)				
	Temp. — Lagging Extension "T" (SEE NOTE)				
	Level — Type & Material				
	Level — Connection Size & Rating				
	Level — Connection Arrangement				
	Level — Cooling Fin or Extension				
	Level — Float Material & Size				
	Flow — Connection or Body Size				
	Flow — Type Element & Matl.				
	Flow — Disc or Paddle Size				
SWITCH	Type – Mercury, Micro, etc.		MERCURY	MERCURY	→
	Contact Arrangement / Rating – Volts & Amps		SPDT, 4A/120V	→	→
	Set Point		14.5 PSIG	14.5 PSIG	4 PSIG
	On Measurement Increase Switch		(OPENS) / CLOSES	(OPENS) / CLOSES	OPENS / (CLOSES)
	Electrical Area Classification		G.P. NEMA 1	G.P. NEMA 1	→
	Conduit Conn. Size & Hub or K.O.		½"	½"	→
	Differential Range – Fixed, Adjustable		FIXED	FIXED	→
REMARKS	Accessories or Special Features				
	ADJUSTABLE SET POINT		YES	YES	→
	OPEN ON ALARM		YES	YES	→
	MOUNT IN FIELD CABINET		YES	YES	→
2	Manufacturer		MERCOID	MERCOID	→
4* PURCH.	*Catalog No.		AP-153-R36	AP-153-R36	→
	P.O. No.		0036	0036	0061
	Price		$13	$13	$18

REV.							
0	PREPARED		EHS	12/23/70	4		
1	ADD LA-329-1.2 CHG LA-328-1 TO LA-328-1.1		EHS	1/26/71	5		
2					6		
3					7		

ES 113 (10/66)

NOTE: For explanation of dimensions U, T ref. to ISA RP-20.1 Pg. 16

PCB-ARCH-EXT0374214

PHASE 2

Monsanto COMPANY — LOCATION WGK

PROCESS ACTUATED * SWITCHES SPECIFICATIONS

DIVISION	PLANT	*SPEC NO.
002	WGK	IS-2417-54
AUTH NO.	DEPT OR AREA	SHEET / REV
2417	246	4 OF 4 / 0

Instrument No.			2417 - FA-349-1									
Service			LOW FLOW ALARM									
Equipment No. or Line No. & Size			1"-349-1-A11-1½									
Process Material			INST AIR									
GENERAL: Press. Temp. – Level Flow Switch – Relay			PRESSURE									
GENERAL: Temperature	Normal	Max.	AMBIENT									
GENERAL: Pressure	Normal	Max.	9	15								
GENERAL: Fluid (Level Only)	Upper	Lower	X	X								
GENERAL: Sp. Gr. @ Oper. Temp.	Upper	Lower	X	X								
ELEMENT: *Range & Units			1-20 PSIG									
ELEMENT: Pressure — Type Element & Material			DIAPHRAGM									
ELEMENT: Pressure — Conn. Size	Orientation		¼" NPT	BTM								
ELEMENT: Temp. — Fill – Gas, Mercury, etc.												
ELEMENT: Temp. — Capillary – Length	Material											
ELEMENT: Temp. — Armor Material												
ELEMENT: Temp. — Bulb-Diameter	Length											
ELEMENT: Temp. — Bulb Type – Plain, Union												
ELEMENT: Temp. — Bulb Conn. – Size & Rating												
ELEMENT: Temp. — Well Material												
ELEMENT: Temp. — Well Conn. Size & Rating												
ELEMENT: Temp. — Lgth below Thread or Flange "U" (SEE NOTE)												
ELEMENT: Temp. — Lagging Extension "T" (SEE NOTE)												
ELEMENT: Level — Type & Material												
ELEMENT: Level — Connection Size & Rating												
ELEMENT: Level — Connection Arrangement												
ELEMENT: Level — Cooling Fin or Extension												
ELEMENT: Level — Float Material & Size												
ELEMENT: Flow — Connection or Body Size												
ELEMENT: Flow — Type Element & Matl.												
ELEMENT: Flow — Disc or Paddle Size												
SWITCH: Type – Mercury, Micro, etc.			MERCURY									
SWITCH: Contact Arrangement	Rating – Volts & Amps		SPDT, 4A/120V									
SWITCH: Set Point			4 PSIG									
SWITCH: On Measurement Increase Switch			~~OPENS~~ CLOSES		OPENS	CLOSES	OPENS	CLOSES	OPENS	CLOSES		
SWITCH: Electrical Area Classification			G.P., NEMA 1									
SWITCH: Conduit Conn. Size & Hub or K.O.			½"									
SWITCH: Differential Range – Fixed, Adjustable			FIXED									
REMARKS: Accessories or Special Features												
REMARKS: ADJUSTABLE SET POINT			YES									
REMARKS: SWITCH FIELD WIRED TO OPEN ON ALARM			YES									
PURCH. Manufacturer			MERCOID									
PURCH. *Catalog No.			AP-153-R36									
PURCH. P.O. No.			0061									
PURCH. Price			$18									

REV.							
0	PREPARED	EHS	1/26/71	4			
1				5			
2				6			
3				7			

ES 113 (10/66)

NOTE: For explanation of dimensions U, T ref. to ISA RP-20.1 Pg. 16.

PCB-ARCH-EXT0374215

Per 7*

Monsanto COMPANY — LOCATION W&K

RECEIVER – CONTROLLER SPECIFICATION
~~ELECTRONIC~~ – PNEUMATIC

DIVISION	PLANT	*SPEC NO.	
002	W&K	IS-2417-12	
AUTH NO.	DEPT OR AREA	SHEET	REV
2417	246	1 OF 4	1

1	Instrument No. 2417 –		PIC-301-5	PDI-301-4	FIC-303-1	LI-312-3
	Service					
	Location – Panel or Equipment No.		PANEL	→	→	→
3	RECEIVER	Record Indicate Control	INDICATR, CONTROL	INDICATE	INDIC, CONTROL	INDICATE
6*		*Number of Points	1	1	1	1
		Chart – Size & Type				
		Chart – Range				
		Chart – Drive / Speed				
		Scale – Size & Type	10" x 1 3/4" TAPE	4" x 1 3/4" FXD	4" x 1 3/4" FXD	4" x 1 3/4" FXD
		Scale – Range	0-100 LIN	0-10 LIN	0-10 LIN	0-10 LIN
		Ratio, Cascade, Computer – Set	MECH SET PT	NONE	CASCADE	NONE
		Auto – Manual By Pass	YES / ~~NO~~	YES / NO	YES / ~~NO~~	YES / NO
	CONTROLLER	Location	INTEG. / ~~REMOTE~~	INTEG. / REMOTE	INTEG. / ~~REMOTE~~	INTEG. / REMOTE
		Proportional Band %	2-500 %	NONE	2-500 %	NONE
		Auto-Reset Mode	~~NO~~ / SLOW / ~~FAST~~	NO / SLOW / FAST	~~NO~~ / SLOW / ~~FAST~~	NO / SLOW / FAST
		Rate Mode	~~YES~~ / NO	YES / NO	~~YES~~ / NO	YES / NO
		On Measurement Increase – Instrument Output	~~INC.~~ / DEC	INC. / DEC	~~INC.~~ / DEC	INC. / DEC
	SIGNALS	Measurement Input – Range & Units	3-15 PSIG	3-15 PSIG	3-15 PSIG	3-15 PSIG
		Measurement Input – From	PT 301-5	PDT 301-4	FT 303-1	LT 312-3
		Controller Output – Range & Units	3-15 PSIG	NONE	3-15 PSIG	NONE
		Controller Output – To	PV 301-5	NONE	ITEM 303	NONE
		Set Point – Range & Units		NONE	3-15 PSIG	NONE
		Set Point – From		NONE	FCV –	NONE
		Power Supply – Electric, Pneumatic	PNEUMATIC	PNEUMATIC	→	PNEUMATIC
		Electrical Area Classification	GEN. PURPOSE	GEN. PURPOSE	→	→
	REMARKS	Accessories or Special Features				
		REMOTE SET POINT	NO	NO	YES	NO
		COLOR	TAN	TAN	TAN	TAN
		LOCAL SET POINT	YES	NO	NO	NO
		PROCESS VARIABLE INDIC	YES	YES	YES	YES
		SET POINT INDICATION	NO	–	YES (1)	–
2	PURCH.	Manufacturer	FISCHER & PORTER	→	→	
4*		*Receiver Catalog No. 51-	1351ABFC	1352FPAC	1351AEFC	1352FPAC
5*		*Controller Catalog No.				
		P.O. No.	0012	0012	0012	0012
		Price	$460 EST	$170 EST	$441 EST	$170 EST

REV.	DATE							
0		PREPARED	EHS	10/15/70	4			
1		AS NOTED	EHS	4/13/71	5			
2					6			
3					7			

PCB-ARCH-EXT0374216

Per 7*

Monsanto COMPANY — LOCATION WGK

RECEIVER – CONTROLLER SPECIFICATION
ELECTRONIC – PNEUMATIC

DIVISION	PLANT	*SPEC NO.	REV
002	WGK	IS-2417-12	0
AUTH NO.	DEPT OR AREA	SHEET	
2417	246	3 OF 4	

1	Instrument No.		2417-	FIC-349-1		LIC-305-3		FIC 541			
	Service			FLOW CONTROL		LEVEL, INDIC CONTROL		FLOW to #2 & #3 Absorbers			
	Location – Panel or Equipment No.			PANEL		PANEL					
3	RECEIVER	Record Indicate Control		INDICATE & CONTROL		INDICATE & CONTROL		Ind. & Control			
6*		*Number of Points		1		1					
		Chart	Size & Type								
			Range								
			Drive / Speed								
		Scale	Size & Type	10" x 1 3/4" TAPE		10" x 1 3/4" TAPE		10" x 1 3/4" TAPE			
			Range	0-10 SQ RT		0-100 LIN		0-100 Eq. Pt.			
		Ratio, Cascade, Computer – Set		MECH SET PT		MECH SET PT		Mech Set Pt			
		Auto – Manual By Pass		(YES) NO		(YES) NO		(YES) NO		YES	NO
	CONTROLLER	Location		(INTEG.) REMOTE		(INTEG.) REMOTE		(INTEG.) REMOTE		INTEG.	REMOTE
		Proportional Band %		2-500 %		2-500%					
		Auto-Reset Mode		(NO) SLOW FAST		(NO) SLOW FAST		NO SLOW (FAST)		NO SLOW	FAST
		Rate Mode		YES (NO)		YES (NO)		YES (NO)		YES	NO
		On Measurement Increase – Instrument Output		INC. (DEC)		INC. (DEC)		INC. (DEC)		INC.	DEC
	SIGNALS	Measurement Input	Range & Units	3-15 PSIG SQ RT		3-15 PSIG LIN		3-15 Sq Rt.			
			From	FT-349-1		LIA-305-3		FT 541			
		Controller Output	Range & Units	3-15 PSIG		3-15 PSIG		3-15			
			To	FV-349-1		LV-305-3		FV 541			
		Set Point	Range & Units								
			From								
		Power Supply – Electric, Pneumatic		PNEUMATIC		PNEUMATIC					
		Electrical Area Classification		GEN PURP		GEN PURP					
	REMARKS	Accessories or Special Features									
				FIELD NOTE: THE CONTROLLER IN THIS UNIT IS TO BE SWAPPED WITH THE CONTROLLER IN FIC-305-1				existing 1900 FIC 325 FV 32 IN PLACE.			
		COLOR		TAN		TAN					
		LOCAL SET POINT		YES		YES					
2	PURCH.	Manufacturer		FISCHER-PORTER		→		F&P			
4*		*Receiver Catalog No.	51-	1351 ABBC		1351 ABBC		15-1351 ABBC			
5*		*Controller Catalog No.									
		P.O. No.		0063		0063		existing			
		Price		$460		$460					

REV.	DATE								
0		PREPARED	EHJ	1/20/71	4				
1					5				
2					6				
3					7				

FS 112 (10/66)

PCB-ARCH-EXT0374217

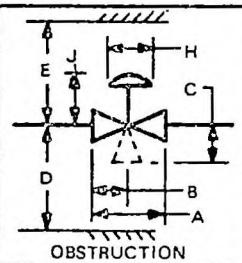
Monsanto

CONTROL VALVE SPECIFICATION

LOCATION	DIVISION	PLANT	SPEC NO.
WGK	002	WGK	IS- 2417 - S
	AUTH NO. 2417	DEPT OR AREA 246	SHEET 1 OF 1 — REV

INSTRUMENT NUMBER	2417 -	PV 301-S	→	FV 303-1	→
SERVICE		PRESSURE	→	PRODUCT FLOW	PRODUCT FLOW
LINE NUMBER		CONTROL	→	1-302-4-A1A-21"	→
PROCESS MATERIAL		AIR	STEAM	MCS 1016	PRTNO-CHLORO
OPERATING DATA — FLOW TEMPERATURE		60 °F	324 °F	150° F	175° F
OPERATING DATA — WORKING PRESSURE (PSIG INLET)		15 PSIA	80 PSIG		
OPERATING DATA — VALVE TO CLOSE AGAINST (PSIG)		15 PSIA	80 PSIG		
OPERATING DATA — SP GR AT FLOW TEMPERATURE		1.0 AIR	0.123 #/FT³	1.35	1.0
OPERATING DATA — VAPOR PRESSURE AT TEMP, MM HG		—	—		
DESIGN COND GAS @ 60 F 14.7 PSIA LIQUID @ FLOW TEMP — FLUID		LIQ (GAS) STM	LIQ GAS STM	(LIQ) GAS STM	(LIQ) GAS STM
DESIGN COND — NORMAL FLOW — UNITS		460 SCFH	275 #/HR	9.5 GPM	15.6 GPM
DESIGN COND — MAXIMUM FLOW — UNITS (REQUIRED)		500 SCFH	275 #/HR	14.0 GPM	23.0 GPM
DESIGN COND — △P PSIG		14.7	37	3	3
DESIGN COND — % TRAVEL & Cv AT ~~DESIGN~~ MAX CONDITIONS		45 Cs=31.2	65 Cs=2.9	71% 9	90% 16
VALVE SPECIFICATION — VALVE BODY SIZE		1"	→	1½"	→
VALVE SPECIFICATION — BODY RATING & END CONNECTION		150 # SCR (FLG)	SCR (FLG)	150 # SCR (FLG)	150 # SCR (FLG)
VALVE SPECIFICATION — BODY MATERIAL		CARBON STL	→	316 SS	→
VALVE SPECIFICATION — TRIM SIZE OR MAXIMUM Cv Cs or Cs		¾" 209	¾"(5.94cv) 10.5	1¼" 22.6	→
VALVE SPECIFICATION — SEATS		(SP) DP	SP DP	(SP) DP	(SP) DP
VALVE SPECIFICATION — TRIM MATERIAL		316 SS	→	MICRO FORM	→
VALVE SPECIFICATION — TYPE INNER VALVE		MICRO-FLUTE	→		
VALVE SPECIFICATION — PACKING		TEFLON V RING	→		
VALVE SPECIFICATION — GUIDING		SKIRT (TOP) BTM	SKIRT TOP BTM	SKIRT (TOP) BTM	SKIRT (TOP) BTM
VALVE SPECIFICATION — VALVE ACTUATOR		(DIAPH) PISTON	DIAPH PISTON	DIAPH PISTON	DIAPH PISTON
VALVE SPECIFICATION — SIGNAL FROM INSTRUMENT (PSIG)		3-15 PSIG	→	3-15 PSIG	→
VALVE SPECIFICATION — AIR PRESSURE TO OPERATOR		3-15 PSIG	→	3-15 PSIG	→
VALVE POSITIONERS — MODEL NO.		N/A			
VALVE POSITIONERS — 3 GAGES BYPASS		— —			
I/P TRANSDUCER — MODEL NO.		N/A			
I/P TRANSDUCER — SIGNAL		—			
PIPED & MOUNTED AIR SUPPLY REGULATOR		~~YES~~ (NO)	YES (NO)	YES (NO)	YES (NO)
ON AIR FAILURE VALVE		(CLOSES) OPENS	(CLOSES) OPENS	(CLOSES) OPENS	(CLOSES) OPENS
FLOW TENDS TO		CLOSE (OPEN)	CLOSE OPEN	CLOSE OPEN	CLOSE OPEN
AIR SUPPLY TO VALVE (PSIG)		3-15 PSIG	→		
REMARKS — ACCESSORIES OR SPECIAL FEATURES				THIS	
REMARKS — COMMENTS		VALVE FLUID WILL BE AIR OR STEAM DEPENDING ON THE OPERATING SITUATION		SURPLUS SER. NO. 44 REPLACES Purchased 2417-9-00	VALVE 12220 FV 303-1 ea P.O. ch.1

DIMENSIONS



A. FACE TO FACE	7¼"		8 3/4"
B. FACE TO CENTER	3¼"		4 3/8"
C. FACE TO CENTER	3 13/16"		4 3/8"
D. CLEARANCE	24"		24"
E. CLEARANCE	24"		30"
H. ACTUATOR DIAMETER	11 1/8"		13 5/8"
J. ACTUATOR HEIGHT	19 13/16"		23 3/8

2 Req'd

PURCH.			
MANUFACTURER	FISHER		FISHER
CATALOG NUMBER	627-A		6672
PURCHASE ORDER NUMBER	0020 ch 1		SURPLUS
PRICE			

REV							
0	PREPARED	EHS	6/17/71	3			
1	Revised Specs. FV303-1	EHS	6/7/71	4			
2				5			

ES 110 (REV 2/70)

PCB-ARCH-EXT0374218

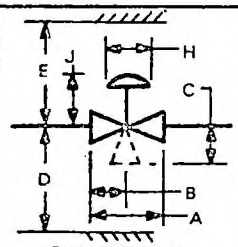
Monsanto

CONTROL VALVE SPECIFICATION

LOCATION	DIVISION	PLANT	SPEC NO.	
W6K	002	W6K	IS-2417-PO	
	AUTH NO.	DEPT OR AREA	SHEET	REV
	2417	246	2 OF	3

INSTRUMENT NUMBER		2417-	TV 325-3			LV 305-3				→				
SERVICE			TEMP			LEVEL								
LINE NUMBER			CWI-E1D2-2"			1-ECD-1-F2C2-3"								
PROCESS MATERIAL			WATER			MCS 1016				ORTHO-CHLORO				
OPERATING DATA	FLOW TEMPERATURE		180 °F			320 °F								
	WORKING PRESSURE (PSIG INLET)		15 PSIG			10 PSIG								
	VALVE TO CLOSE AGAINST (PSIG)		65 PSIG			40 PSIG								
	SP GR AT FLOW TEMPERATURE		1.0			1.25								
	VAPOR PRESSURE AT TEMP, MM HG		400			6.5								
DESIGN COND GAS @ 60 F 14.7 PSIA LIQUID @ FLOW TEMP	FLUID		(LIQ)	~~GAS~~	~~STM~~	(LIQ)	~~GAS~~	~~STM~~		LIQ	GAS	STM	LIQ	GAS	STM
	NORMAL FLOW — UNITS		200 GPM			10 GPM								
	MAXIMUM FLOW — UNITS (REQUIRED)		200 GPM			15 GPM				286 #/H				
	△ P		15 PSI			20 PSI								
	% TRAVEL & Cv AT DESIGN CONDITIONS		85%	36.4		55%	2.8			70%	4.5			
VALVE SPECIFICATION	VALVE BODY SIZE		1½"			1"								
	BODY RATING & END CONNECTION		125#	SCR	FLG	150#	SCR	FLG			SCR	FLG		SCR	FLG
	BODY MATERIAL		CAST IRON			STEEL								
	TRIM SIZE OR MAXIMUM Cv		1⅞"	39.2		¾"	9.8%							
	SEATS		(SP)	~~DP~~		(SP)	~~DP~~			SP	DP		SP	DP
	TRIM MATERIAL		STAINLESS STL			STAINLESS STL								
	TYPE INNER VALVE		LINEAR CAGE			MICRO FORM VALVE PLUG								
	PACKING		TFE V RING			TFE V RING								
	GUIDING		(SKIRT)	~~TOP~~	~~BTM~~	(SKIRT)	~~TOP~~	~~BTM~~		SKIRT	TOP	BTM	SKIRT	TOP	BTM
	VALVE ACTUATOR		(DIAPH)	PISTON		DIAPH	PISTON			DIAPH	PISTON		DIAPH	PISTON	
	SIGNAL FROM INSTRUMENT (PSIG)		3-15 PSIG			3-15 PSIG								
	AIR PRESSURE TO OPERATOR		3-15 PSIG			3-15 PSIG								
VALVE POSITIONERS	MODEL NO.		NONE			NONE								
	3 GAGES	BYPASS												
I/P TRANSDUCER	MODEL NO.		NONE			NONE								
	SIGNAL													
PIPED & MOUNTED AIR SUPPLY REGULATOR			~~YES~~	(NO)		YES	(NO)			YES	NO		YES	NO	
ON AIR FAILURE VALVE			CLOSES	(OPENS)		(CLOSES)	OPENS			CLOSES	OPENS		CLOSES	OPENS	
FLOW TENDS TO			CLOSE	(OPEN)		CLOSE	(OPEN)			CLOSE	OPEN		CLOSE	OPEN	
AIR SUPPLY TO VALVE (PSIG)			3-15			3-15								
REMARKS	ACCESSORIES OR SPECIAL FEATURES													
	ACTUATOR NUMBER		34			30								
	DESIGN NOTE		—			DO NOT EXCEED TM-305-TEMP								

DIMENSIONS



A. FACE TO FACE	8¾"	7¼	
B. FACE TO CENTER	4⅜"	3⅝	
C. FACE TO CENTER	2 7/16"	2½	
D. CLEARANCE	24"	24"	
E. CLEARANCE	30"	30"	
H. ACTUATOR DIAMETER	13⅛	11⅜	
J. ACTUATOR HEIGHT	19⅝	18 1/16	

PURCH.			
MANUFACTURER	FISHER	FISHER	
CATALOG NUMBER	657-ED	667-ES	
PURCHASE ORDER NUMBER	0020	0020	
PRICE	# 355	# 330	

REV								
0	ORIGINATED	EHS	10/20/70	3	REVISED ENTIRE SHEET	EHS	1/27/71
1	CHG SPECS TV-325-3	EHS	4/14/71	4			
2				5			

ES 110 (REV 2/70)

PCB-ARCH-EXT0374219

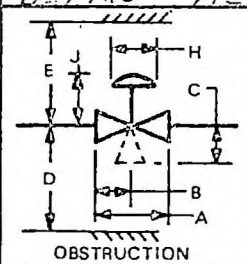
PHASE 2

Monsanto

CONTROL VALVE SPECIFICATION

LOCATION	DIVISION	PLANT	SPEC NO.	REV
WGK	002	WGK	IS-2417-30	0
	AUTH NO. 2417	DEPT OR AREA 246	SHEET 4 OF	

INSTRUMENT NUMBER		2417-	XCV-331-5			XCV 103-1				XCV 103-2										
SERVICE			ON-OFF			ON-OFF				ON-OFF										
LINE NUMBER			1-331-2-F2C2-1"			1-103-1-F2C2-2"				—										
PROCESS MATERIAL			AROCLOR			PI PHENYL				PI PHENYL										
OPERATING DATA	FLOW TEMPERATURE		150 °F			210 °F				210 °F										
	WORKING PRESSURE (PSIG INLET)		75			~ 2				~ 2										
	VALVE TO CLOSE AGAINST (PSIG)		75			~ 2				~ 2										
	SP GR AT FLOW TEMPERATURE		1.25			1.0				1.0										
	VAPOR PRESSURE AT TEMP. MM HG		~ 1 MM			0.02				0.02										
DESIGN COND GAS @ 60 F 14.7 PSIA LIQUID @ FLOW TEMP	FLUID		(LIQ)	GAS	STM	(LIQ)	GAS	STM		(LIQ)	GAS	STM		LIQ	GAS	STM				
	NORMAL FLOW — UNITS		1.0 GPM			—				—										
	MAXIMUM FLOW — UNITS (REQUIRED)		3.0 GPM			—				—										
	△ P		75 PSI			2				2										
	% TRAVEL & Cv AT DESIGN CONDITIONS		ON	OFF		ON	OFF			ON	OFF									
VALVE SPECIFICATION	VALVE BODY SIZE		1"			2"				2"										
	BODY RATING & END CONNECTION		150 #	SCR	FLG	150 #	SCR	FLG		150 #	SCR	FLG			SCR	FLG				
	BODY MATERIAL		DUCTILE IRON			DUCTILE IRON				DUCTILE IRON										
	TRIM SIZE OR MAXIMUM Cv		—	76.8		—	170			—	170									
	SEATS TEFLON SLEEVE		SP	DP		SP	DP			SP	DP			SP		DP				
	TRIM MATERIAL		DUCTILE IRON			→				→										
	TYPE INNER VALVE		PLUG			→				→										
	PACKING		TEFLON			→				→										
	GUIDING		SKIRT	TOP	BTM	SKIRT	TOP	BTM		SKIRT	TOP	BTM		SKIRT	TOP	BTM				
	VALVE ACTUATOR		DIAPH	PISTON		DIAPH	PISTON			DIAPH	PISTON			DIAPH		PISTON				
	SIGNAL FROM INSTRUMENT (PSIG)		—																	
	AIR PRESSURE TO OPERATOR		60 PSIG			→				→										
VALVE POSITIONERS	MODEL NO.																			
	3 GAGES BYPASS																			
I/P TRANSDUCER	MODEL NO.																			
	SIGNAL																			
PIPED & MOUNTED AIR SUPPLY REGULATOR			YES	NO		YES	NO			YES	NO			YES		NO				
ON AIR FAILURE VALVE			CLOSES	OPENS		CLOSES	OPENS			CLOSES	OPENS			CLOSES		OPENS				
FLOW TENDS TO			~~CLOSE~~	~~OPEN~~		~~CLOSE~~	~~OPEN~~			~~CLOSE~~	~~OPEN~~			CLOSE		OPEN				
AIR SUPPLY TO VALVE (PSIG)																				
REMARKS	ACCESSORIES OR SPECIAL FEATURES					LIMIT SWITCH				→										
	BELLOWS VALVAIR					ON OPEN				→										
	89201 LUBRICATOR		YES			YES				→										
	ASCO 83216 SOLENOID		YES			YES				→										
	BETTIS ACTUATOR		CB 415 SR60			CR 420 SR60				→										
DIMENSIONS	A. FACE TO FACE																			
	B. FACE TO CENTER																			
	C. FACE TO CENTER																			
	D. CLEARANCE																			
	E. CLEARANCE																			
	H. ACTUATOR DIAMETER																			
	J. ACTUATOR HEIGHT																			
PURCH.	MANUFACTURER		DURCO			DURCO				DURCO										
	CATALOG NUMBER		G11			G11				G11										
	PURCHASE ORDER NUMBER		0064			0064				0064										
	PRICE		# 236			# 325				# 325										



REV									
0	PREPARED	EHS	1/24/71	3					
1				4					
2				5					

ES 110 (REV 2/70)

PCB-ARCH-EXT0374220

Per 8*
4*
5*

Monsanto COMPANY — LOCATION WGK	*DIFFERENTIAL PRESSURE *INSTRUMENT SPECIFICATIONS	DIVISION 022	PLANT WGK	*SPEC NO. IS-2417-S
		AUTH NO. 2417	DEPT OR AREA 246	SHEET 4 OF 5

| | | |

Per 8*
4*
5*

PHASE 2

Monsanto COMPANY — LOCATION WGK	*DIFFERENTIAL PRESSURE *INSTRUMENT SPECIFICATIONS	DIVISION 002	PLANT WGK	* SPEC NO. IS-2417-3
		AUTH NO. 2417	DEPT OR AREA 246	SHEET 5 OF 5

| | | |

Per 10*
4*
5*

Monsanto COMPANY — LOCATION WGK

***LEVEL DISPLACER *OR FLOAT SPECIFICATIONS**

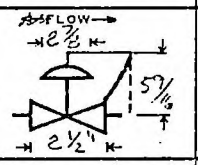
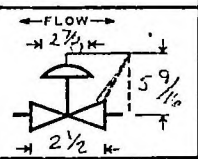
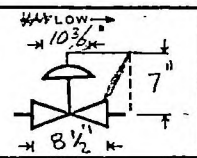
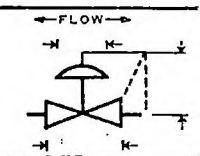
DIVISION	PLANT	* SPEC NO.
002	WGK	IS-2417-34
AUTH NO.	DEPT OR AREA	SHEET / REV
2417	246	1 OF 3 / 3

1	Instrument No.			2417 -		LIA-305-3			2			LIA-312-3					
	Service					LEVEL						LEVEL					
	Equipment No.					305						312					
3*	BODY	Blind, Controlling, Transmitting				TRANS,						TRANS					
		Type				INTERNAL DIS.						INTERNAL DIS					
		Material				CARBON STL.						CARBON STL					
7*		*Connection Size & Rating				4", 150 # RF						4", 150 # R.F.					
		Connection Arrangement				(TOP)	BTM.	SIDE	TOP	BTM.	SIDE	(TOP)	BTM.	SIDE	TOP	BTM.	SIDE
		Rotatable Head Required				YES	~~NO~~		YES	NO		YES	~~NO~~		YES	NO	
		Vent or Drain – Size & Rating															
		Cooling Fin or Extension				YES						YES					
		Provide Pilot Not Crossed Out and Orient Connections as Shown				~~LH~~ RH			LH RH			~~LH~~ RH			LH RH		
8*	INTERNALS	*Sensor Type	*Material			DISPL	304 SS					DISPL	304 SS				
9*		*Sensor Size or Length				146" x 3/4			3			125" x 3/4"			3		
		Torque Tube Material				K MONEL						K MONEL					
		Extension Length				8.5"						8.5"					
	SIGNALS	Transmitting Output	Range & Units			3-15 PSIG						3-15 PSIG					
			To			PRESS GAGE						LI-312-3					
		Controller Output	Range & Units			—						—					
			To			—						—					
		Power Supply – Electrical, Pneumatic				PNEU, 80 PSIG						PNEU, 80 PSIG					
		Electrical Area Classification				WEATHER TITE						WEATHER TITE					
	CONTROLLER	Proportional Band %															
		Auto – Reset Mode				NO	~~SLOW~~	FAST	NO	SLOW	FAST	NO	~~SLOW~~	FAST	NO	SLOW	FAST
		On Level Increase Instrument Output				~~INC~~	DEC		INC	DEC		~~INC~~	DEC		INC	DEC	
	OPERATING CONDITIONS	Fluid	Upper	Lower		AROCLOR						AROCLOR					
		Sp. Gr. @ Oper. Temp.	Upper	Lower		1.26	1.32					1.26	1.32				
		Temperature °C	Normal	Max.		300	345					300	345				
		Pressure PSIA	Normal	Max.		2.7	0					15	15				
		Piped & Mt'd Air Supply Reg.				YES	~~NO~~		YES	NO		YES	~~NO~~		YES	NO	
	REMARKS	Accessories or Special Features															
		AIR FIN EXTENSION				YES						YES					
		SUPPLY PRESSURE REGULATOR				YES						YES					
		INDICATING GAUGE															
		3½" DIAM, 0-100 SCALE				YES						YES					
		ON LEVEL INCREASE:															
		TRANSMITTER OUTPUT				INCREASES						INCREASES					
2	PURCH.	Manufacturer				FISHER						FISHER					
6*		*Catalog No.				2500T-249BP						2500T-249BP					
		P.O. No.				0020						0020					
		Price				# 650 EST						# 650 EST					

REV.	DATE			
0		PREPARED	EHJ	10/26/70
1		CHG EXTENSION LENGTH	EHJ	11/30/70
2		CHG LICA-305-3 TO LIA-305-3	EHJ	12/2/70
3		CHG DISP & EXTEN LENGTH + 305 312	EHJ	1/4/71
4				
5				
6				
7				

PCB-ARCH-EXT0374223

Monsanto COMPANY — LOCATION WGK	*DIRECT OPERATED *PRESSURE REGULATING *VALVE SPECIFICATIONS	DIVISION 002	PLANT WGK	* SPEC NO. IS-2417-42
		AUTH NO. 2417	DEPT OR AREA 246	SHEET 5 OF ___ RE 1

1	Valve No.		2417-	PCV-303-1			PCV-303-2			PCV-308-2									
	Service			I-PG-303-1			I-PG-303-2			STEAM TO STEAM JET									
	Line Number & Size			FIELD CABINET			→			SM-1-F3817-1½"									
	Process Material			INST AIR			→			STEAM									
	Operating Data	Flow Temperature		AMBIENT			→			390°F									
		Working Pressure (PSIG Inlet)		60			→			200 PSIG									
		Valve to Close Against (PSIG.)		(60)			→			200 PSIG									
		Sp. Gr. @ Flow Temp.		1.0			→			2.1 FT³/#									
	Design Conditions Gas @ 60°F 14.7 PSIA Liquid @ Flow Temp.	Normal Flow		0			→			500 #/HR									
		Max. Flow		0			→			600 #/HR									
		Units: SCFM, SCFH, GPM or #/Hr.		SCFH			→			#/HR									
		Fluid		LIQ.	(GAS)	STM	LIQ.	(GAS)	STM	LIQ.	GAS	(STM)	LIQ.	GAS	STM				
		Inner Valve Travel, % @ Design Flow		—			—												
		ΔP	C_V (Calc.) @ Design Cond.	55	—		50	—											
		Calculation Sheet No.		—			—												
8*	Valve Specifications	*Valve Body Size		¼" NPT			→			1½"									
		Valve Port Size		—			—			FULL									
		Body Rating & Conn. Size		250PSI	¼" SCRD		→			250#	1½" R.F.								
7		Body Material		ALUMINUM			→			HI TENSILE IRON									
		Trim Material		BRASS			→			STAINLESS STL									
		Type Inner Valve		BUNA N			→			STAINLESS STL									
		Seats (Double or Single)		(SP)	DP		(SP)	DP		(SP)	DP		SP	DP					
		Valve actuator (Diaph or ~~Piston~~)		(DIAPH)	PISTON		(DIAPH)	PISTON		(DIAPH)	~~PISTON~~		DIAPH	PISTON					
		Matl of Const (Diaph or ~~Piston~~)		BUNA N			→			STAINLESS STL									
		Lubricator	Isolating Valve	—	—		—	—		—	PILOT								
		Packing		—			—			NONE									
		Guiding		SKIRT	(TOP)	BTM	SKIRT	(TOP)	BTM	SKIRT	~~TOP~~	(BTM)	SKIRT	TOP	BTM				
	Spring Setting		PSIG	5			10			150 #									
9*	*Spring Range		PSIG	5-20			5-20			70-150 #									
	On Increased Pressure Valve			OPENS	(CLOSES)		OPENS	CLOSES		OPENS	(CLOSES)		OPENS	CLOSES					
	Type of Regulator									PILOT OPER. REDUCING VALVE									
	REMARKS	Accessories or Special Features																	
		2" OUTPUT GAUGE		YES			YES												
		PANEL MOUNTING		YES			YES												
	DIMENSIONS																			
2	PURCHASING	Manufacturer		FISHER			→			FISHER									
6*		*Catalog No.		67RPTC			→			92B									
		P.O. No.		0042			0042			0042									
		Price		# 15			# 15			# 183									

REV.	DATE																		
0		PREPARED		EHS	12/31/70		4												
1		ADDED PCV-308-2		EHS	12/31/70		5												
2							6												
3							7												

ES 109 (10/66)

PCB-ARCH-EXT0374224

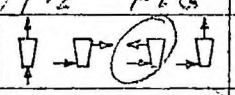
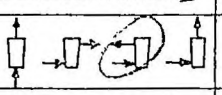
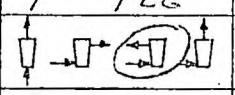
PHASE 2

Per 7*
4*

Monsanto COMPANY — LOCATION WGK

*ROTAMETER SPECIFICATIONS

DIVISION	PLANT	*SPEC NO.	
002	WGK	IS-2417-44	
AUTH NO.	DEPT OR NO.	SHEET	REV
2417	246	6 OF 6	1

					FI 539-1	FI 540-1	FI 331-1
Instrument No.					2417 -		
Service					Flow	→	→
					INDICATION	→	→
Process Material					AROCLOR	→	→
Line No.					1-541-1-A11-1½"	→	1-331-2-F2816-1"
Line Size, Schedule					1½", 40	→	1", 40
SERVICE	Operating Conditions	Pressure	Temp.		20 PSIG / 150°F	→	10 PSIG / 150°F
		S.P. Gr.	Visc. C.P.		1.34 / 7.0	→	1.25 / 7
	Base Conditions	Pressure	Temp.		— / —	— / —	— / —
		Sp. Gr.	Visc.		— / —	— / —	— / —
	Inlet Pressure – Max.				90 PSIG	→	75 PSIG
	Flow @ Base Conditions	Liquid			520 GPM	→	1.0 GPM
		Gas			—	—	—
		Steam			—	—	—
	Fluid Character	Clean	Trans.	Steady	CLEAN, TRANS	→	TRANS
		Slurry	Opaque	Pulse	STEADY	→	→
3 CASE	Indicating, Recording, Transmitting						
	Chart Or Scale	Size & Type					
		Range					
		Drive & Speed					
SIGNAL	Instrument Output	Range & Units					
		To					
	Power Supply: Electrical, Pneumatic						
	Electrical Area Classification						
6* BODY	*Connection – Size & Rating				1½" FLG	→	1" FLG
	Arrangement of Connections	Inlet					
		Outlet					
	Metering Tube Size (by Vendor)				8	→	6
	Meter △P Normal (by Vendor)				11" WC, AT 7.6 GPM	→	9.7" WC, AT 4.9 GPM
	Materials Of Construction	Body Fittings			316 SS	→	→
		Metering & Ext. Tube			GLASS	→	→
		Float			316 SS, BSVT-84	→	316 SS, BSVT-64
		Packing or Gaskets			TEFLON	→	→
REMARKS	Accessories or Special Features						
	LAMINATED SAFETY GLASS WINDOW				YES	→	→
	GLASS TUBE ROTAMETER				YES	→	→
	SAFE WORKING PRESSURE				130 PSIG	→	175 PSIG
	SCALE LENGTH				10"	→	→
	SCALE READING				PERCENTAGE	→	→
	MAX FLOW (AROCLOR) GPM				13	→	4.1
2 5* PURCH.	Manufacturer				FISCHER & PORTER	→	→
	*Catalog Number				10A1736A	→	→
	Purchase Order Number				0063	0063	0063
	Price				$ 270	$ 270	$ 204

REV.								
	0	PREPARED	EHS	1/27/71	4			
	1	CHG FLOAT SPEC	EHS	3/1/71	5			
	2	CHG CATALOG NO	EHS	4/5/71	6			
	3				7			

ES 102 (10/66)

PCB-ARCH-EXT0374225

VARIANCE #1

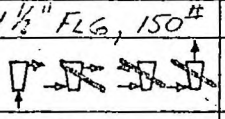
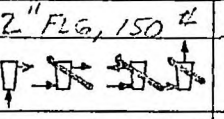
Per 7*

4*

Monsanto COMPANY — LOCATION WGK

*ROTAMETER SPECIFICATIONS

DIVISION	PLANT	*SPEC NO.
002	WGK	IS-2417-44
AUTH NO.	DEPT OR NO.	SHEET / REV
2417	246	7 OF 7 / 1

Instrument No.				2417 -	FT-303-1	→		FT-303-3	→			
Service												
Process Material					MCS-1016		ORTHO-CHLORO	MCJ-1016		ORTHO-CHLORO		
Line No.					1-302-4-A11-2"			1-302-1-A11-4"				
Line Size, Schedule					2" / 40			4" / 40				
SERVICE	Operating Conditions	Pressure PSIA	Temp. °C		14.7	65	14.7	80	1.0	65	7.0	80
		S.P. Gr.	Visc. C.P.		1.35	7.0	1.00	1.5	1.35	7.0	1.00	1.5
	Base Conditions	Pressure	Temp.		—	—	—	—	—	—	—	—
		Sp. Gr.	Visc.		—	—	—	—	—	—	—	—
	Inlet Pressure – Max. PSIA				14.7		14.7		1.0		7.0	
	Flow @ OPERATING ~~Base~~ Conditions	Liquid: MIN / MAX GPM			9.5	14	15.6	28	25	27	62.2	69.1
		Gas			—		—		—		—	
		Steam			—		—		—		—	
	Fluid Character	Clean	Trans.	Steady	LIQUID-STEADY	→		→		→		
		Slurry	Opaque	Pulse	CLEAN	→		→		→		
3 CASE	Indicating, Recording, Transmitting				INDICATE ↓			INDICATE ↓				
	Chart Or Scale	Size & Type			TRANSMIT			TRANSMIT				
		Range			5" SCALE			5" SCALE				
		Drive & Speed			8-100 %			8-100 %				
SIGNAL	Instrument Output	Range & Units			3-15 PSIG			3-15 PSIG				
		To			FIC-303-1			FI-303-3				
	Power Supply: ~~Electrical~~, Pneumatic				20 PSIG			20 PSIG				
	Electrical Area Classification				—			—				
6* BODY	*Connection – Size & Rating				1½" FLG, 150#		△2		2" FLG, 150#			
	Arrangement of Connections	Inlet										
		Outlet										
	Metering Tube Size (by Vendor)				MB-35-5-SV				MII-24-5-SV			
	Meter △P Normal (by Vendor) AT ANY FLOW				36-" WC		38 " WC		35.6" WC		37.5" WC	
	Materials Of Construction	Body Fittings			316 SS				CARBON STL			
		Metering & Ext. Tube			316 SS				CARBON STL			
		Float			316 SS				316 SS			
		Packing or Gaskets			TEFLON				TEFLON			
REMARKS	Accessories or Special Features				NEW TUBE & FLOAT TO BE INSTALLED IN EXISTING △							
	ROTAMETER MAX CAPACITY @ OPERATING CONDITIONS				METERS by FIELD 29.3 GPM		35.0 GPM		83.3 GPM		99.2 GPM	
	H2O EQUIV				35.0 GPM		35.0 GPM		99.2 GPM		99.2 GPM	
	ACCURACY				± 2% FS				± 2% FS			
	AIR FILTER REG W/GAGE				YES				YES			
	NOTE 1. BOTH FLOWMETERS ARE TO BE SUITABLE FOR BOTH MCS-1016 & ORTHO-CHLORO SERVICE											
	NOTE 2. FIELD TO STEAM TRACE METERS & EXTENSION LINE △											
2 5* PURCH.	Manufacturer				FISCHER & PORTER				FISCHER & PORTER			
	*Catalog Number				10A 1152A-OK-1401KA41				-1401KA41			
	Purchase Order Number				0012 ch.2				0012 ch 2			
	Price				$600 EST				$509			

REV.												
	△0	PREPARED	EHS	4/2/71	△4							
	△1	Added notes	EAH	6/3/71	△5							
	△2	REV as built	CJH	7/30/71	△6							
	△3				△7							

PCB-ARCH-EXT0374226

Per 10*
3*
4*

Monsanto COMPANY — LOCATION W6K

***FLOW MEASURING *ELEMENT SPECIFICATIONS**

DIVISION	PLANT	*SPEC NO.
002	W6K	IS-2417-45-
AUTH NO.	DEPT OR AREA	SHEET / REV
2417	246	2 OF 4 / 2

1	Instrument No.		2417 - FE-307-2	FE-307-5	FO 305-4
	Service			AROCLOR FLOW FROM FURNACE	RESTRICTING ORIFICE (1)
	Process Material		FUEL GAS	AROCLOR	AROCLOR
	Line No.		F27-2"	1-307-1-F2316-8"	1-307-1-F2B16-8"
	Line Size, Schedule		2", 40	8", 40	8", 40
SERVICE	Upstream Operating Conditions	Flowing Press. P_f	28 PSIG	15 PSIG	15 PSIG
		Flowing Temp T_f	60°F	300°C	300°C
		Sp. Gr. @ T_f	.133 #/FT³	1.35	1.35
		Viscosity CP @ T_f	0.01	1.6	1.6
		Sp. Gr. @ 60°F	.133 #/FT³	———	———
		Supercompr. Factor @ T_f			
		Steam Quality, %			
		Steam Superheat, F			
	Flow at Base Conditions 60F & 14.73 PSIA Barometric Pressure at Location ____ In. Hg.	Liquid, Gas or Steam	GAS	LIQUID	LIQUID
		Minimum Flow	0	0	0
		Normal Flow	8960	600	600
		Maximum Flow	13500 (2)	600	600
		Units of Flow	SCFH	GPM	GPM
		Meter Range	0-44.61" WC.	0-50" W.C.	NONE
8* FLANGES	*Size & Type – W.N., S.O., Scrd., Van Stone[1]		2" W.N.	3" S.O.	8" W.N.
9*	*Rating & Facing		300# RF	300# RF	150# ASA
7→	Material – Flange & R.T.J. Ring or Gasket[1]		CARBON STEEL	CARBON STEEL	CARBON STL
	Taps – Type, Size & Orientation (R2.3 Std)		FLG ½" NPT SIDE	FLG ½" NPT SIDE	NONE
ORIFICE PLATE	Type of Plate (R2.3 Std)		PADDLE TYPE	PADDLE TYPE	PADDLE TYPE
	Plate Material & Thickness		304 SS, ⅛"	304 SS, ⅛"	304 SS, ⅛"
	Pipe ID (D), In.		2.067"	7.981"	7.981"
	Orifice ID (d), In.		1.06381"	5.04671	4.50027
	d/D Ratio (β)		0.51466	0.63234	.56387
6→	Meter Range – Inches Water Dry		40"	50"	ΔP = 2.0 PSI
	Type of Meter		FOX D/P	BARTON BELLOWS	NONE
	Drain or Vent Hole		NONE	NONE	NONE
	Chart or Scale Range		0-10 SQ RT	0-10 SQ RT	NONE
	Chart Factor (2)		X 1350	X 60	NONE
	Calculation Sheet No.				
REMARKS	CAT No. METER RUN OR ORIFICE FLANGE		M-30RW	30RS	
	CAT No. ORIFICE PLATE		520	520	520
	ACCESSORIES		MFG. STD	MFG STD	
	GASKETS		ASBESTOS	ASBESTOS	ASBESTOS
	All orifice handles to be stamped on upstream side with "Inlet", bore dia, nom pipe ID, flange rating, instrument number and plate material				(ORIFICE PLATE ONLY)
2 PURCH.	Manufacturer		DANIEL IND	→	→
5*	*Catalog Number		AS ABOVE	→	→
	Purchase Order Number		0041	0041	DELETE
	Price		#125		

REV							
	0	PREPARED	EHS	12/19/70	4		
	1	ADD FO 305-4	EHS	11/17/70	5		
	2	CHG METER RANGE	EHS	2/3/71	6		
	3				7		

PCB-ARCH-EXT0374227

Per 6*

3*

Monsanto COMPANY – LOCATION WGK	PROCESS ACTUATED * SWITCHES SPECIFICATIONS	DIVISION 002 / AUTH NO. 2417	PLANT WGK / DEPT OR AREA 246	*SPEC NO. IS-2417-54 / SHEET 1 OF 4	REV 1

1

Instrument No.			2417 –	LA-305-3.1	LA-305-3.2	LA-316-1.1	LA-316-1.2
Service				HIGH LEVEL ALARM	LOW LEVEL ALARM	HIGH LEVEL ALARM	LOW LEVEL ALARM
Equipment No. or Line No. & Size							
Process Material				INST AIR	INST AIR	→	→
GENERAL	Press. Temp. – Level Flow Switch – Relay			PRESSURE	→	→	→
	Temperature	Normal	Max.	AMBIENT	AMBIENT	→	→
	Pressure PSIG	Normal	Max.	9 / 15	9 / 15	→	→
	Fluid (Level Only)	Upper	Lower				
	Sp. Gr. @ Oper. Temp.	Upper	Lower				
5* ELEMENT	*Range & Units		PSIG	1 – 20	1 – 20	→	→
	Pressure: Type Element & Material			DIAPRAGM	DIAPRAGM	→	→
	Pressure: Conn. Size	Orientation		¼" NPT / BTM	¼" NPT / BTM	→	→
	Temp.: Fill – Gas, Mercury, etc.						
	Temp.: Capillary – Length	Material					
	Temp.: Armor Material						
	Temp.: Bulb-Diameter	Length					
	Temp.: Bulb Type – Plain, Union						
	Temp.: Bulb Conn. – Size & Rating						
	Temp.: Well Material						
	Temp.: Well Conn. Size & Rating						
	Temp.: Lgth below Thread or Flange "U" (SEE NOTE)						
	Temp.: Lagging Extension "T" (SEE NOTE)						
	Level: Type & Material						
	Level: Connection Size & Rating						
	Level: Connection Arrangement						
	Level: Cooling Fin or Extension						
	Level: Float Material & Size						
	Flow: Connection or Body Size						
	Flow: Type Element & Matl.						
	Flow: Disc or Paddle Size						
SWITCH	Type – Mercury, Micro, etc.			MERCURY	MERCURY	→	→
	Contact Arrangement	Rating – Volts & Amps		SPDT, 4A/120V	SPDT, 4A/120V	→	→
	Set Point			14 PSIG	4 PSIG.	→	→
	On Measurement Increase Switch			~~OPENS~~ / ~~CLOSES~~	~~OPENS~~ / ~~CLOSES~~	~~OPENS~~ / ~~CLOSES~~	~~OPENS~~ / ~~CLOSES~~
	Electrical Area Classification			G.P. NEMA 1	G.P. NEMA 1	→	→
	Conduit Conn. Size & Hub or K.O.			½"	½"	→	→
	Differential Range – Fixed, Adjustable			FIXED	FIXED	→	→
REMARKS	Accessories or Special Features						
	ADJUSTABLE SET POINT			YES	YES	→	→
	SWITCH FIELD-WIRED						
	TO OPEN ON ALARM			YES	YES	→	→
2 4* PURCH.	Manufacturer			MERCOID	→	→	→
	*Catalog No.			AP-153-R36	→	→	→
	P.O. No.			# 0015	# 0015	0015	0015
	Price			19	18	→	→

REV.								
	0	PREPARED	EHS	10/26/70	4			
	1	CHG. INST NO.	EHS	11/17/70	5			
	2				6			
	3				7			

FORM 113 (10/56)

NOTE: For explanation of dimensions U, T ref. to ISA RP-20 1 Pg. 16.

PCB-ARCH-EXT0374228

Pat 6* 3*

Monsanto COMPANY — LOCATION W6K

PROCESS ACTUATED * SWITCHES SPECIFICATIONS

DIVISION	PLANT	*SPEC NO.
002	W6K	IS-2417-5A
AUTH NO.	DEPT OR AREA	SHEET / RE
2417	246	2 OF 4 / 1

Instrument No.		2417 -	LA-312-3.1	LA-312-3.2	PA-312-6	PA-301-5
Service			HIGH LEVEL ALARM	LOW LEVEL ALARM	HI PRESSURE ALARM	HI-PRESSURE ALARM
Equipment No. or Line No. & Size					312	
Process Material			INST AIR	→	NITROGEN	INST AIR
GENERAL	Press. Temp. – Level Flow Switch – Relay		PRESSURE	→	→	PRESSURE
	Temperature	Normal / Max.	AMBIENT	→	→	AMBIENT
	Pressure PSIG	Normal / Max.	9 PSIG / 15 PSIG	→	0" WC / 5" WC	3 PSIG / 15 PSIG
	Fluid (Level Only)	Upper / Lower				
	Sp. Gr. @ Oper. Temp.	Upper / Lower				
ELEMENT	*Range & Units		1-20 PSIG	→	1-30" W.C.	1-20 PSIG
	Pressure – Type Element & Material		DIAPHRAGM	→	DIAPHRAGM	DIAPHRAGM
	Pressure – Conn. Size / Orientation		¼" NPT / BTM	→	½" NPT / BTM	¼" NPT / BTM
	Temp. – Fill – Gas, Mercury, etc.					
	Temp. – Capillary – Length / Material					
	Temp. – Armor Material					
	Temp. – Bulb-Diameter / Length					
	Temp. – Bulb Type – Plain, Union					
	Temp. – Bulb Conn. – Size & Rating					
	Temp. – Well Material					
	Temp. – Well Conn. Size & Rating					
	Temp. – Lgth below Thread or Flange "U" (SEE NOTE)					
	Temp. – Lagging Extension "T" (SEE NOTE)					
	Level – Type & Material					
	Level – Connection Size & Rating					
	Level – Connection Arrangement					
	Level – Cooling Fin or Extension					
	Level – Float Material & Size					
	Flow – Connection or Body Size					
	Flow – Type Element & Matl.					
	Flow – Disc or Paddle Size					
SWITCH	Type – Mercury, Micro, etc.		MERCURY	→	→	MERCURY
	Contact Arrangement / Rating – Volts & Amps		SPDT, 4A/120V	→	→	SPDT, 4A/120V
	Set Point		14 PSIG	4 PSIG	5" W.C.	14 PSIG
	On Measurement Increase Switch		~~OPENS~~ / ~~CLOSES~~	~~OPENS~~ / ~~CLOSES~~	OPENS / ~~CLOSES~~	OPENS / ~~CLOSES~~
	Electrical Area Classification		G.P. NEMA 1	→	WEATHER RESISTANT	G.P. NEMA 1
	Conduit Conn. Size & Hub or K.O.		½"	→	→	½"
	Differential Range – Fixed, Adjustable		FIXED	→	→	FIXED
REMARKS	Accessories or Special Features				RANGE P1	
	ADJUSTABLE SET POINT		YES	→	YES	YES
	SWITCH FIELD-WIRED TO OPEN ON ALARM		YES	→	YES	YES
PURCH.	Manufacturer		MERCOID	→	→	MERCOID
	*Catalog No.		AP-153-R36	→	PGW-153	AP-153-R36
	P.O. No.		#0015	0015	SPARE	0061
	Price		#18	→	$60	$18

REV.							
0	PREPARED	EHS	10/23/70	4			
1	ADDED PA-312-6	EHS	11/25/70	5			
2	ADDED PA-301-5	EHS	2/25/71	6			
3				7			

ES 113 (10/66) NOTE: [illegible]

PCB-ARCH-EXT0374229

ORDER 1A-328-1.2

Per 6*

Monsanto COMPANY — LOCATION WGK	PROCESS ACTUATED * SWITCHES SPECIFICATIONS	DIVISION 002	PLANT WGK	*SPEC NO. IS-2417-5
		AUTH NO. 2417 (1)	DEPT OR AREA 246	SHEET 3 OF 4

1	Instrument No.			2417-	LA-329-1		LA-328-1.1		LA-328-1.2	
	Service				HI LEVEL ALARM		HI LEVEL ALARM		LO LEVEL ALARM (1)	
	Equipment No. or Line No. & Size				329		328		328	
	Process Material				INST AIR		INST AIR		INST AIR	
GENERAL	Press. Temp. – Level Flow Switch – Relay				PRESS		PRESS		PRESS	
	Temperature	Normal	Max.		AMBIENT		AMBIENT		AMBIENT	
	Pressure PSIG	Normal	Max.		3	15	3	15	3	15
	Fluid (Level Only)	Upper	Lower							
	Sp. Gr. @ Oper. Temp.	Upper	Lower							
5*	*Range & Units	PSIG			1-20		1-20		1-20	
ELEMENT	Pressure	Type Element & Material			DIAPHRAGM		DIAPHRAGM		DIAPHRAGM	
		Conn. Size	Orientation		¼" NPT	BTM	¼" NPT	BTM	¼" NPT	BTM
	Temp.	Fill – Gas, Mercury, etc.								
		Capillary – Length	Material							
		Armor Material								
		Bulb-Diameter	Length							
		Bulb Type – Plain, Union								
		Bulb Conn. – Size & Rating								
		Well Material								
		Well Conn. Size & Rating								
		Lgth below Thread or Flange "U" (SEE NOTE)								
		Lagging Extension "T" (SEE NOTE)								
	Level	Type & Material								
		Connection Size & Rating								
		Connection Arrangement								
		Cooling Fin or Extension								
		Float Material & Size								
	Flow	Connection or Body Size								
		Type Element & Matl.								
		Disc or Paddle Size								
SWITCH	Type – Mercury, Micro, etc.				MERCURY		MERCURY		→	
	Contact Arrangement	Rating – Volts & Amps			SPDT, 4A/120V		→		→	
	Set Point				14.5 PSIG		14.5 PSIG		4 PSIG	
	On Measurement Increase Switch				(OPENS) CLOSES		(OPENS) CLOSES		OPENS (CLOSES)	OPENS CLOSES
	Electrical Area Classification				G.P. NEMA 1		G.P. NEMA 1		→	
	Conduit Conn. Size & Hub or K.O.				½"		½"		→	
	Differential Range – Fixed, Adjustable				FIXED		FIXED		→	
REMARKS	Accessories or Special Features									
	ADJUSTABLE SET POINT				YES		YES		→	
	OPEN ON ALARM				YES		YES		→	
	MOUNT IN FIELD CABINET				YES		YES		→	
2	PURCH. Manufacturer				MERCOID		MERCOID		→	
4*	*Catalog No.				AP-153-R36		AP-153-R36		→	
	P.O. No.				0036		0036		0061	
	Price				$18		$18		$18	

REV.						
0	PREPARED	EHS	12/23/70	4		
1	ADD LA-328-1.2 CHG LA-328-1 TO LA-328-1.1	EHS	1/26/71	5		
2				6		
3				7		

ES 113 (10/66)

NOTE: For explanation of dimensions U, T ref. to ISA RP-20.1 Pg. 16.

PCB-ARCH-EXT0374230

PHASE 2

Monsanto COMPANY LOCATION WGK	PROCESS ACTUATED * SWITCHES SPECIFICATIONS	DIVISION 002	PLANT WGK	*SPEC NO. IS-2417-54
		AUTH NO. 2417	DEPT OR AREA 246	SHEET 1 OF 1 / REV 0

Instrument No.			2417 - FA-349-1								
Service			LOW FLOW ALARM								
Equipment No. or Line No. & Size			1-349-1-A11-1½								
Process Material			INST AIR								
GENERAL	Press. Temp. – Level Flow Switch – Relay		PRESSURE								
	Temperature	Normal / Max.	AMBIENT								
	Pressure	Normal / Max.	9	15							
	Fluid (Level Only)	Upper / Lower									
	Sp. Gr. @ Oper. Temp.	Upper / Lower									
ELEMENT	*Range & Units		1-20 PSIG								
	*Pressure – Type Element & Material		DIAPHRAGM								
	*Pressure – Conn. Size / Orientation		¼" NPT / BTM								
	Temp. – Fill – Gas, Mercury, etc.										
	Temp. – Capillary – Length / Material										
	Temp. – Armor Material										
	Temp. – Bulb-Diameter / Length										
	Temp. – Bulb Type – Plain, Union										
	Temp. – Bulb Conn. – Size & Rating										
	Temp. – Well Material										
	Temp. – Well Conn. Size & Rating										
	Temp. – Lgth below Thread or Flange "U" (SEE NOTE)										
	Temp. – Lagging Extension "T" (SEE NOTE)										
	Level – Type & Material										
	Level – Connection Size & Rating										
	Level – Connection Arrangement										
	Level – Cooling Fin or Extension										
	Level – Float Material & Size										
	Flow – Connection or Body Size										
	Flow – Type Element & Matl.										
	Flow – Disc or Paddle Size										
SWITCH	Type – Mercury, Micro, etc.		MERCURY								
	Contact Arrangement / Rating – Volts & Amps		SPDT, 4A / 120V								
	Set Point		4 PSIG								
	On Measurement Increase Switch		~~OPENS~~ (CLOSES)		OPENS	CLOSES	OPENS	CLOSES	OPENS	CLOSES	
	Electrical Area Classification		G.P. NEMA 1								
	Conduit Conn. Size & Hub or K.O.		½"								
	Differential Range – Fixed, Adjustable		FIXED								
REMARKS	Accessories or Special Features										
	ADJUSTABLE SET POINT		YES								
	SWITCH FIELD WIRED TO OPEN ON ALARM		YES								
PURCH.	Manufacturer		MERCOID								
	*Catalog No.		AP-153-R36								
	P.O. No.		0061								
	Price		$13								

REV.								
0	PREPARED	EHS	1/26/71	4				
1				5				
2				6				
3				7				

ES 113 (10/66)

NOTE: For explanation of dimensions U, T ref. to ISA RP-20.1 Pg. 16.

PCB-ARCH-EXT0374231

Per 7*

Monsanto COMPANY — LOCATION WGK

RECEIVER – CONTROLLER SPECIFICATION
~~ELECTRONIC~~ – PNEUMATIC

DIVISION	PLANT	*SPEC NO.	
C02	WGK	IS-2417-12	
AUTH NO.	DEPT OR AREA	SHEET	REV
2417	246	1 OF 4	1

1	Instrument No.		2417 –	PIC-301-5		PDI-301-4		FIC-303-1		LI-312-3		
	Service											
	Location – Panel or Equipment No.			PANEL	→	→	→	→	→	→	→	→
3	RECEIVER	Record Indicate Control		INDICATE, CONTROL		INDICATE		INDIC, CONTROL		INDICATE		
6*		*Number of Points		1		1		1		1		
		Chart	Size & Type									
			Range									
			Drive / Speed									
		Scale	Size & Type	10"x1¾" TAPE		4"x1¾" FXD		4"x1¾" FXD		4"x1¾" FXD		
			Range	0-100 LIN		0-10 LIN	→	0-10 LIN	→	0-10 LIN	→	
		Ratio, Cascade, Computer – Set		MECH SET PT		NONE	→	CASCADE		NONE		
		Auto – Manual By Pass		YES	~~NO~~	YES	NO	YES	~~NO~~	YES	NO	
	CONTROLLER	Location		INTEG.	~~REMOTE~~	INTEG.	REMOTE	INTEG.	~~REMOTE~~	INTEG.	REMOTE	
		Proportional Band %		2-500 %		NONE		2-500 %		NONE		
		Auto-Reset Mode		~~NO~~	SLOW / ~~FAST~~	NO	SLOW / FAST	~~NO~~	SLOW / ~~FAST~~	NO	SLOW / FAST	
		Rate Mode		~~YES~~	NO	YES	NO	~~YES~~	NO	YES	NO	
		On Measurement Increase Instrument Output	–	~~INC.~~	DEC	INC.	DEC	~~INC.~~	DEC	INC.	DEC	
	SIGNALS	Measurement Input	Range & Units	3-15 PSIG		3-15 PSIG		3-15 PSIG		3-15 PSIG		
			From	PT 301-5		PDT 301-4		FT 303-1		LT 312-3		
		Controller Output	Range & Units	3-15 PSIG		NONE		3-15 PSIG		NONE		
			To	PV 301-5		NONE		ITEM 303		NONE		
		Set Point	Range & Units			NONE		3-15 PSIG		NONE		
			From			NONE		FCV –		NONE		
		Power Supply – Electric, Pneumatic		PNEUMATIC		PNEUMATIC	→	→		PNEUMATIC		
		Electrical Area Classification		GEN. PURPOSE		GEN. PURPOSE	→	→		→		
	REMARKS	Accessories or Special Features										
		REMOTE SET POINT		NO		NO		YES		NO		
		COLOR		TAN		TAN		TAN		TAN		
		LOCAL SET POINT		YES		NO		NO		NO		
		PROCESS VARIABLE INDIC		YES		YES		YES		YES		
		SET POINT INDICATION		NO		—		YES		—		
								1				
2	PURCH.	Manufacturer		FISCHER-PORTER		→		→		→		
4*		*Receiver Catalog No.	51–	1351ABFC		1352FPAC		1351AEFC		1352FPAC		
5*		*Controller Catalog No.										
		P.O. No.		0012		0012		0012		0012		
		Price		$460 EST		$170 EST		$441 EST		$170 EST		

REV.	DATE						
0		PREPARED	EHS	10/16/72	4		
1		As NOTED	EHS	4/13/11	5		
2					6		
3					7		

PCB-ARCH-EXT0374232

Per 7*

Monsanto COMPANY — LOCATION: W&K

RECEIVER – CONTROLLER SPECIFICATION
ELECTRONIC – PNEUMATIC

DIVISION	PLANT	*SPEC NO.	REV
002	W&K	IS-2417-12	0
AUTH NO.	DEPT OR AREA	SHEET	
2417	246	3 OF 4	

1	Instrument No.		2417-	FIC-349-1		LIC-305-3		FIC 541		
	Service			FLOW CONTROL		LEVEL, INDIC CONTROL		FLOW to #2 & #3 Absorbers		
	Location – Panel or Equipment No.			PANEL		PANEL				
3	RECEIVER: Record Indicate Control			INDICATE + CONTROL		INDICATE + CONTROL		Ind. & Control		
6*	RECEIVER: *Number of Points			1		1				
	RECEIVER: Chart	Size & Type								
		Range								
		Drive	Speed							
	RECEIVER: Scale	Size & Type		10"x1 3/4" TAPE		10"x1 3/4" TAPE		10"x1 3/4" TAPE		
		Range		0-10 SQRT		0-100 LIN		0-100 eq. Mt.		
	RECEIVER: Ratio, Cascade, Computer – Set			MECH SET PT		MECH SET PT		Mech Set Pt		
	RECEIVER: Auto – Manual By Pass			(YES) NO		(YES) NO		(YES) NO	YES	NO
	CONTROLLER: Location			(INTEG.) REMOTE		(INTEG.) REMOTE		(INTEG.) REMOTE	INTEG.	REMOTE
	CONTROLLER: Proportional Band %			2-500 %		2-500%				
	CONTROLLER: Auto-Reset Mode			(NO) SLOW FAST		(NO) SLOW FAST		NO SLOW (FAST)	NO	SLOW FAST
	CONTROLLER: Rate Mode			YES (NO)		YES (NO)		YES (NO)	YES	NO
	CONTROLLER: On Measurement Increase – Instrument Output			INC. (DEC)		INC. (DEC)		INC. (DEC)	INC.	DEC
	SIGNALS: Measurement Input	Range & Units		3-15 PSIG SQ RT		3-15 PSIG LIN		3-15 Sq Rt.		
		From		FT-349-1		LIA-305-3		FT 541		
	SIGNALS: Controller Output	Range & Units		3-15 PSIG		3-15 PSIG		3-15		
		To		FV-349-1		LV-305-3		FV 541		
	SIGNALS: Set Point	Range & Units								
		From								
	SIGNALS: Power Supply – Electric, Pneumatic			PNEUMATIC		PNEUMATIC				
	SIGNALS: Electrical Area Classification			GEN PURP.		GEN PURP				
	REMARKS: Accessories or Special Features									
				FIELD NOTE:						
				THE CONTROL						
				LER IN THIS						
				UNIT IS TO						
				BE SWAPPED						
				WITH THE				existing		
				CONTROLLER				1900		
				IN				FIC 32A		
				FIC-303-1				FV 32 IN		
	COLOR			TAN		TAN		PLACE.		
	LOCAL SET POINT			YES		YES				
2	PURCH.: Manufacturer			FISCHER-PORTER		→		F&P		
4*	PURCH.: *Receiver Catalog No.		51-	1351 ABBC		1351 ABBC		15-1351 ABBC		
5*	PURCH.: *Controller Catalog No.									
	PURCH.: P.O. No.			0063		0063		existing		
	PURCH.: Price			$460		$460				

REV.	DATE								
0	PREPARED	EHJ	1/20/71	4					
1				5					
2				6					
3				7					

ES 112 (10/66)

PCB-ARCH-EXT0374233

Monsanto

CONTROL VALVE SPECIFICATION

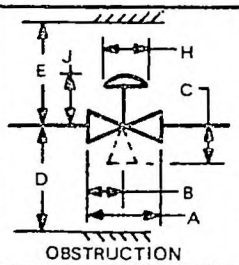
LOCATION	DIVISION	PLANT	SPEC NO.
WGK	002	WGK	IS- 2417 - 30
	AUTH NO. 2417	DEPT OR AREA 246	SHEET 1 OF 1 REV

INSTRUMENT NUMBER	2417 -	PV 301-5	→	FV 303-1	→
SERVICE		PRESSURE	→	PRODUCT FLOW	PRODUCT FLOW
LINE NUMBER		CONTROL	→	1-302-4-A11-21"	→
PROCESS MATERIAL		AIR	STEAM	MCS 10/6	ORTHO-CHLORO
OPERATING DATA — FLOW TEMPERATURE		60 °F	324 °F	150° F	175° F
OPERATING DATA — WORKING PRESSURE (PSIG INLET)		15 PSIA	80 PSIG		
OPERATING DATA — VALVE TO CLOSE AGAINST (PSIG)		15 PSIA	80 PSIG		
OPERATING DATA — SP GR AT FLOW TEMPERATURE		1.0 AIR	0.123 #/FT³	1.35	1.0
OPERATING DATA — VAPOR PRESSURE AT TEMP, MM HG		—	—		
DESIGN COND GAS @ 60 F 14.7 PSIA LIQUID @ FLOW TEMP — FLUID		LIQ (GAS) STM	LIQ GAS (STM)	(LIQ) GAS STM	(LIQ) GAS STM
DESIGN COND — NORMAL FLOW — UNITS		460 SCFH	275 #/HR	9.5 GPM	15.6 GPM
DESIGN COND — MAXIMUM FLOW — UNITS (REQUIRED)		500 SCFH	275 #/HR	14.0 GPM	23.0 GPM
DESIGN COND — △P PSIG		14.7	87	3	3
DESIGN COND — % TRAVEL & Cv AT ~~DESIGN~~ CONDITIONS		45 Cg = 31.2	65 Cs = 2.9	71% 9	90% 16
VALVE SPECIFICATION — VALVE BODY SIZE		1"	→	1½"	→
VALVE SPECIFICATION — BODY RATING & END CONNECTION		150 # SCR (FLG)	SCR (FLG)	150 # SCR (FLG)	150 # SCR (FLG)
VALVE SPECIFICATION — BODY MATERIAL		CARBON STL	→	316 SS	→
VALVE SPECIFICATION — TRIM SIZE OR MAXIMUM Cv Cg or Cs		¾" 209	¾" (5.94 Cv) 10.5	1¼" 22.6	→
VALVE SPECIFICATION — SEATS		(SP) DP	SP DP	(SP) DP	(SP) DP
VALVE SPECIFICATION — TRIM MATERIAL		316 SS	→	MICRO FORM	→
VALVE SPECIFICATION — TYPE INNER VALVE		MICRO-FLUTE	→		
VALVE SPECIFICATION — PACKING		TEFLON V RING	→		
VALVE SPECIFICATION — GUIDING		SKIRT (TOP) BTM	SKIRT TOP BTM	SKIRT (TOP) BTM	SKIRT (TOP) BTM
VALVE SPECIFICATION — VALVE ACTUATOR		(DIAPH) PISTON	DIAPH PISTON	DIAPH PISTON	DIAPH PISTON
VALVE SPECIFICATION — SIGNAL FROM INSTRUMENT (PSIG)		3-15 PSIG	→	3-15 PSIG	→
VALVE SPECIFICATION — AIR PRESSURE TO OPERATOR		3-15 PSIG	→	3-15 PSIG	→
VALVE POSITIONERS — MODEL NO.		NO			
VALVE POSITIONERS — 3 GAGES BYPASS		— —			
I/P TRANSDUCER — MODEL NO.		NO			
I/P TRANSDUCER — SIGNAL		—			
PIPED & MOUNTED AIR SUPPLY REGULATOR		YES (NO)	YES (NO)	YES (NO)	YES (NO)
ON AIR FAILURE VALVE		CLOSES OPENS	(CLOSES) OPENS	(CLOSES) OPENS	(CLOSES) OPENS
FLOW TENDS TO		CLOSE (OPEN)	CLOSE OPEN	CLOSE OPEN	CLOSE OPEN
AIR SUPPLY TO VALVE (PSIG)		3-15 PSIG	→		

REMARKS

ACCESSORIES OR SPECIAL FEATURES		THIS	
COMMENTS	VALVE FLUID WILL BE	SURPLUS	VALVE
	AIR OR STEAM DEPEND-	SER. NO. 44	12230
	ING ON THE OPERATIN	Replaces	FV 303-1
	SITUATION	Purchased	on
		2417-4-0020, ch. 1	

DIMENSIONS



A. FACE TO FACE	7¼"		8 3/4"
B. FACE TO CENTER	3¼"		4 3/8"
C. FACE TO CENTER	3 13/16"		4 3/8"
D. CLEARANCE	24"		24"
E. CLEARANCE	24"		30"
H. ACTUATOR DIAMETER	11 1/8"		13 1/8"
J. ACTUATOR HEIGHT	19 13/16"		23 3/4

2 Body

PURCH.

MANUFACTURER	FISHER		FISHER
CATALOG NUMBER	667-A		667Z
PURCHASE ORDER NUMBER	0020 ch 1		SURPLUS
PRICE			

REV

0	PREPARED	EHS	5/27/71	3			
1	Revised Specs FV303-1	EHS	6/1/71	4			
2				5			

ES 110 (REV 2/70)

PCB-ARCH-EXT0374234

Monsanto

CONTROL VALVE SPECIFICATION

LOCATION	DIVISION	PLANT	SPEC NO.	
WGK	002	WGK	IS-2417-30	
	AUTH NO.	DEPT OR AREA	SHEET	REV
	2417	246	2 OF	3

INSTRUMENT NUMBER		2417-	TV 325-3			LV 305-3			→								
SERVICE			TEMP			LEVEL											
LINE NUMBER			CWI-E1D2-2"			1-EDD-1-F2C2-3"											
PROCESS MATERIAL			WATER			MCS 1016			ORTHO-CHLORO								
OPERATING DATA	FLOW TEMPERATURE		180°F			320°F											
	WORKING PRESSURE (PSIG INLET)		15 PSIG			10 PSIG											
	VALVE TO CLOSE AGAINST (PSIG)		65 PSIG			40 PSIG											
	SP GR AT FLOW TEMPERATURE		1.0			1.25											
	VAPOR PRESSURE AT TEMP, MM HG		400			6.5											
DESIGN COND GAS @ 60 F 14.7 PSIA LIQUID @ FLOW TEMP	FLUID		(LIQ)	GAS	STM	(LIQ)	GAS	STM	LIQ	GAS	STM	LIQ	GAS	STM			
	NORMAL FLOW — UNITS		200 GPM			10 GPM											
	MAXIMUM FLOW — UNITS (REQUIRED)		200 GPM			15 GPM			2.88 GPM								
	△ P		15 PSI			20 PSI											
	% TRAVEL & Cv AT DESIGN CONDITIONS		85%	36.4		55%	2.8		70%	4.5							
VALVE SPECIFICATION	VALVE BODY SIZE		1½"			1"											
	BODY RATING & END CONNECTION		125#	SCR	FLG	150#	SCR	FLG		SCR	FLG			SCR	FLG		
	BODY MATERIAL		CAST IRON			STEEL											
	TRIM SIZE OR MAXIMUM Cv		1⅓"	39.2		¾"	9.86										
	SEATS		(SP)	DP		(SP)	DP		SP	DP		SP	DP				
	TRIM MATERIAL		STAINLESS STL			STAINLESS STL											
	TYPE INNER VALVE		LINEAR CAGE			MICRO FORM VALVE PLUG											
	PACKING		TFE V RING			TFE V RING											
	GUIDING		(SKIRT)	TOP	BTM	(SKIRT)	TOP	BTM	SKIRT	TOP	BTM	SKIRT	TOP	BTM			
	VALVE ACTUATOR		(DIAPH)	PISTON		DIAPH	PISTON		DIAPH	PISTON		DIAPH	PISTON				
	SIGNAL FROM INSTRUMENT (PSIG)		3-15 PSIG			3-15 PSIG											
	AIR PRESSURE TO OPERATOR		3-15 PSIG			3-15 PSIG											
VALVE POSITIONERS	MODEL NO.		NONE			NONE											
	3 GAGES	BYPASS															
I/P TRANSDUCER	MODEL NO.		NONE			NONE											
	SIGNAL																
PIPED & MOUNTED AIR SUPPLY REGULATOR			YES	(NO)		YES	(NO)		YES	NO		YES	NO				
ON AIR FAILURE VALVE			CLOSES	(OPENS)		(CLOSES)	OPENS		CLOSES	OPENS		CLOSES	OPENS				
FLOW TENDS TO			CLOSE	(OPEN)		CLOSE	(OPEN)		CLOSE	OPEN		CLOSE	OPEN				
AIR SUPPLY TO VALVE (PSIG)			3-15			3-15											
REMARKS	ACCESSORIES OR SPECIAL FEATURES																
	ACTUATOR NUMBER		34			30											
	DESIGN NOTE		—			DO NOT EXPOSE TV-305-TEMP											
DIMENSIONS	A. FACE TO FACE		8¾"			7¼											
	B. FACE TO CENTER		4⅜"			3⅝											
	C. FACE TO CENTER		2 7/16"			2½											
	D. CLEARANCE		24"			24"											
	E. CLEARANCE		30"			30"											
	H. ACTUATOR DIAMETER		13⅛			11⅜											
	J. ACTUATOR HEIGHT		19 5/8			18 5/16											
PURCH.	MANUFACTURER		FISHER			FISHER											
	CATALOG NUMBER		657-ED			667-ES											
	PURCHASE ORDER NUMBER		0020			0020											
	PRICE		# 355			# 330											

OBSTRUCTION

REV							
0	PREPARED	EHS	10/20/70	3	REVISED ENTIRE SHEET	EHS	11/27/71
1	CHG SPECS TV-325-3	EHS	4/20/71	4			
2				5			

ES 110 (REV 2/70)

PCB-ARCH-EXT0374235

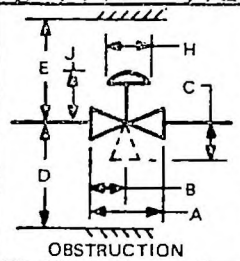
PHASE 2

Monsanto

CONTROL VALVE SPECIFICATION

LOCATION	DIVISION	PLANT	SPEC NO.	REV
WGK	002	WGK	IS-2417-30	0
	AUTH NO.	DEPT OR AREA	SHEET	
	2417	246	4 OF	

INSTRUMENT NUMBER		2417-	XCV-331-5			XCV 103-1			XCV 103-2											
SERVICE			ON-OFF			ON-OFF			ON-OFF											
LINE NUMBER			1-331-2-F2C2-1"			1-103-1-F2C2-2"			—											
PROCESS MATERIAL			AROCLOR			PHENYL			PHENYL											
OPERATING DATA	FLOW TEMPERATURE		150 °F			210 °F			210 °F											
	WORKING PRESSURE (PSIG INLET)		75			~ 2			~ 2											
	VALVE TO CLOSE AGAINST (PSIG)		75			~ 2			~ 2											
	SP GR AT FLOW TEMPERATURE		1.25			1.0			1.0											
	VAPOR PRESSURE AT TEMP, MM HG		~ 1 MM			0.02			0.02											
DESIGN COND GAS @ 60 F 14.7 PSIA LIQUID @ FLOW TEMP	FLUID		(LIQ)	GAS	STM	(LIQ)	GAS	STM	(LIQ)	GAS	STM	LIQ	GAS	STM						
	NORMAL FLOW — UNITS		1.0 GPM			—			—											
	MAXIMUM FLOW — UNITS (REQUIRED)		3.0 GPM			—			—											
	△ P		75 PSI			2			2											
	% TRAVEL & Cv AT DESIGN CONDITIONS		ON	OFF		ON	OFF		ON	OFF										
VALVE SPECIFICATION	VALVE BODY SIZE		1"			2"			2"											
	BODY RATING & END CONNECTION		150#	SCR	FLG	150#	SCR	FLG	150#	SCR	FLG		SCR	FLG						
	BODY MATERIAL		DUCTILE IRON			DUCTILE IRON			DUCTILE IRON											
	TRIM SIZE OR MAXIMUM Cv		—	76.8		—	170		—	170										
	SEATS TEFLON SLEEVE		SP	DP		SP	DP		SP	DP		SP		DP						
	TRIM MATERIAL		DUCTILE IRON			→			→											
	TYPE INNER VALVE		PLUG			→			→											
	PACKING		TEFLON			→			→											
	GUIDING		SKIRT	TOP	BTM	SKIRT	TOP	BTM	SKIRT	TOP	BTM	SKIRT	TOP	BTM						
	VALVE ACTUATOR		DIAPH	(PISTON)		DIAPH	(PISTON)		DIAPH	(PISTON)		DIAPH		PISTON						
	SIGNAL FROM INSTRUMENT (PSIG)		—																	
	AIR PRESSURE TO OPERATOR		60 PSIG			→			→											
VALVE POSITIONERS	MODEL NO.																			
	3 GAGES BYPASS																			
I/P TRANSDUCER	MODEL NO.																			
	SIGNAL																			
PIPED & MOUNTED AIR SUPPLY REGULATOR			YES	(NO)		YES	NO		YES	(NO)		YES		NO						
ON AIR FAILURE VALVE			(CLOSES)	OPENS		(CLOSES)	OPENS		(CLOSES)	OPENS		CLOSES		OPENS						
FLOW TENDS TO			~~CLOSE~~	~~OPEN~~		~~CLOSE~~	~~OPEN~~		~~CLOSE~~	~~OPEN~~		CLOSE		OPEN						
AIR SUPPLY TO VALVE (PSIG)																				
REMARKS	ACCESSORIES OR SPECIAL FEATURES					LIMIT SWITCH			→											
	BELLOWS VALVAIR					ON - OPEN			→											
	89201 LUBRICATOR		YES			YES			→											
	ASCO 83216 SOLENOID		YES			YES			→											
	BETTIS ACTUATOR		CB 415 SR 60			CB 420 SR 60			→											
DIMENSIONS	A. FACE TO FACE																			
	B. FACE TO CENTER																			
	C. FACE TO CENTER																			
	D. CLEARANCE																			
	E. CLEARANCE																			
	H. ACTUATOR DIAMETER																			
	J. ACTUATOR HEIGHT																			



PURCH.	MANUFACTURER		DURCO			DURCO			DURCO											
	CATALOG NUMBER		G11			G11			G11											
	PURCHASE ORDER NUMBER		0064			0064			0064											
	PRICE		# 236			# 325			# 325											

REV																				
	0	PREPARED	ENS	1/29/71		3														
	1					4														
	2					5														

ES 110 (REV 2/70)

PCB-ARCH-EXT0374236

Por 8*
4*
5*

Monsanto COMPANY — LOCATION WGK

***DIFFERENTIAL PRESSURE *INSTRUMENT SPECIFICATIONS**

DIVISION	PLANT	*SPEC NO.
02	WGK	IS-2417-S
AUTH NO.	DEPT OR AREA	SHEET / R
2417	246	4 OF 5

1	Instrument No.		2417 -	LIA-328-1		FT406-1	FT418-1
	Service			LEVEL		FLOW to #6	N2 to #9 ckt
				INDICATION		Chlorinator	
	Equipment No. or Line No. & Size			-328-			
	Process Material			AROCLOR			NITROGEN
3	CASE	Blind, Indicating, Record, Control, Transmit		INDICATING			
		Mounting: Flush, Surface Yoke		NOZZLE			
		CHART	Size and Type				
			Range				
			Drive / Speed				
		SCALE	Size & Type	3-15 PSIG LOW PRESS GAUGE			
			Range	0-100 LIN			
	DIFFERENTIAL UNIT	Flow, Level, Pressure		LEVEL		FLOW	
		Bellows, Diaphragm, Other		DIAPHRAGM		DIA.	
7*		*Span & Units		150"		100" W.C.	225" W.C.
		Range Limits		20 TO 205" WC			
		Body Rating @ 60°F		275 #			
6*		*Body Material		C.S.		C.S	
		Element Material		316 S.S.		316 S/S	
		Wetted Parts Material		C.S. + 316 SS		C.S. & S/S	
		Extended Diaph. Length		—			
		Fluid Sp. Gr.		1.15			N2
	SIGNALS	PROCESS INPUT	Liquid, Gas, Cond. Vapor	LIQUID			GAS
			Operating Pressure	ATM			30 PSIG
		INSTRUM. OUTPUT	Range & Units	3-15 PSIG			
			To	0-100 LIN PRESS GAUGE			
		Power Supply – Electrical, Pneumatic		PNEU			
		Electrical Area Classification		WEATHER TITE			
	CONTROLLER	Proportional Band %					
		Auto-Reset Mode		NO / SLOW / FAST	NO / SLOW / FAST	NO / SLOW / FAST	NO / SLOW / FAS
		Rate Mode		YES / NO	YES / NO	YES / NO	YES / NO
		Auto-Manual By Pass		YES / NO	YES / NO	YES / NO	YES / NO
		On Measurement Increase Instrument Output		INC. / DEC	INC. / DEC	INC. / DEC	INC. / DEC
		Pipe & Mt'd Air Supply Reg.		YES / NO	YES / NO	YES / NO	YES / NO
		Output Gage, 3½" Size		YES / NO	YES / NO	YES / NO	YES / NO
	REMARKS	Accessories or Special Features				MATCH WITH	0-30 SCFM
		FLANGE, 3" – 150# R.F.		YES		FE406-1	Nitrogen
		AIR SUPPLY SET, 2" GAGE		R-110-2M R-102-YN		SEE SPEC	metered at
		OUTPUT GAGE 0-100 LIN		YES		2417-45A5	30 PSIG
							INTEGRAL
							ORIFICE 0.25"
							225" WATER
2	PURCH.	Manufacturer		FOXBORO		FOXBORO	FOXBORO
		Catalog No.		IEFAI-MK-315		13A	13A
		P.O. No.		0043		SURPLUS	SURPLUS
		Price		$ 400			

REV. DATE								
	0	PREPARED	EHJ	11/4/71	4			
	1	Added FT406-1			5			
	2				6			
	3				7			

FS 117 (10/66)

PCB-ARCH-EXT0374237

PHASE 2

Monsanto COMPANY — LOCATION WGK

*DIFFERENTIAL PRESSURE *INSTRUMENT SPECIFICATIONS

DIVISION	PLANT	*SPEC NO.
002	WGK	IS-2417-32
AUTH NO.	DEPT OR AREA	SHEET / RE
2417	246	5 OF 5 / 0

1	Instrument No.			2417-	FT-349-1		FT-541-1					
	Service				FLOW TO -348-		FLOW TO 539, 540					
	Equipment No. or Line No. & Size				1-349-1-A2C12-1½"		1-541-1-A11-1½"					
	Process Material				AROCLOR		AROCLOR					
3	CASE	Blind, Indicating, Record, Control, Transmit			BLIND		INDIC, TRANS					
		Mounting: Flush, Surface Yoke			YOKE		YOKE					
		CHART	Size and Type									
			Range									
			Drive	Speed								
		SCALE	Size & Type									
			Range									
	DIFFERENTIAL UNIT	Flow, Level, Pressure			FLOW				CONSTRUCTION NOTE:			
		Bellows, Diaphragm, Other			DIAPHRAGM				USE EXISTING			
7*		*Span & Units			0-400" WC		0-100" WC		INTEGRAL ORIFICE			
		Range Limits			0-200 TO 0-850"		0-20 TO 0-205"		FLOW TRANSMITTER			
		Body Rating @ 60°F			1500 PSI				ON FLOW TO 539 &			
6*		*Body Material			316 SS		→		540 FOR FT-349-1			
		Element Material			316 SS		→		(USE EXISTING 1800 FT 32)			
		Wetted Parts Material			316 SS		→					
		~~Extended Diaph. Length~~ PROCESS FLOW TEMP			212 °F		175 °F					
		Fluid Sp. Gr. @ FLOW TEMP | @ 60°F			1.45 | 1.55		1.34 | —					
	SIGNALS	PROCESS INPUT	Liquid, Gas, Cond. Vapor		LIQUID		→					
			Operating Pressure		90.0 PSIA		65 PSIG					
		INSTRUM. OUTPUT	Range & Units		3-15 PSIG		→					
			To		FRC 349-1		FRCA-541-1					
		Power Supply – Electrical, Pneumatic			PNEUMATIC		→					
		Electrical Area Classification			GEN PURP		→					
	CONTROLLER	Proportional Band %										
		Auto-Reset Mode			NO / SLOW / FAST		NO / SLOW / FAST		NO / SLOW / FAST		NO / SLOW / FAST	
		Rate Mode			YES / NO		YES / NO		YES / NO		YES / NO	
		Auto-Manual By Pass			YES / NO		YES / NO		YES / NO		YES / NO	
		On Measurement Increase Instrument Output			INC. / DEC		INC. / DEC		INC. / DEC		INC. / DEC	
	Pipe & Mt'd Air Supply Reg. FIXED PRESS				(YES) / NO		(YES) / NO		YES / NO		YES / NO	
	Output Gage, 3½" Size				(YES) / NO		(YES) / NO		YES / NO		YES / NO	
	REMARKS	Accessories or Special Features VISCOSITY			9.0 CP		CONSTRUCTION					
		PROCESS CONNECTION			½" N.P.T.		NOTE: CONNECT					
		PROCESS FLOW NORMAL | MAX			6 GPM | 10 GPM		WITH 316 SS					
		FURNISH WITH INTEGRAL ORIFICE ATTACH			0.350" BORE		TUBING					
		ORIFICE + MANIFOLD MTL			316 SS							
		CHEMALOY GASKET FOR HI TEMP			YES							
					6-10 GPM @ 400" WC							
2	PURCH.	Manufacturer			FOXBORO		FOXBORO					
		Catalog No.			13HA-HS2		13A-MS2					
		P.O. No.			EXISTING		0062					
		Price			# 450		# 350					

REV.									
DATE	0	PREPARED	EHS	1/20/71	4				
	1	CHG SPAN FT-541-1	EHS	4/27/71	5				
	2				6				
	3				7				

ES 117 (10/66)

PCB-ARCH-EXT0374238

Per 10*
4*
5*

Monsanto COMPANY LOCATION WGK	* LEVEL DISPLACER *OR FLOAT SPECIFICATIONS	DIVISION 002 / AUTH NO. 2417	PLANT WGK / DEPT OR AREA 246	* SPEC NO. IS-2417-34 / SHEET 1 OF 3	RE 3

1	Instrument No.	2417 -	LIA-305-3			2			LIA-312-3					
	Service		LEVEL						LEVEL					
	Equipment No.		305						312					
3	BODY: Blind, Controlling, Transmitting		TRANS,						TRANS					
	Type		INTERNAL D.S.						INTERNAL D.S.					
	Material		CARBON STL.						CARBON STL					
7*	*Connection Size & Rating		4", 150 # RF						4", 150 # R.F.					
	Connection Arrangement		(TOP) BTM. SIDE			TOP BTM. SIDE			(TOP) BTM. SIDE			TOP BTM. SIDE		
	Rotatable Head Required		YES ~~NO~~			YES - NO -			YES ~~NO~~			YES NO		
	Vent or Drain – Size & Rating													
	Cooling Fin or Extension		YES						YES					
	Provide Pilot Not Crossed Out and Orient Connections as Shown		~~RH~~ LH RH			LH RH			~~LH~~ RH			LH RH		
8*	INTERNALS: *Sensor Type / *Material		DISPL / 304 SS						DISPL / 304 SS					
9*	*Sensor Size or Length		146" x 3/4			3			125" x 3/4"			3		
	Torque Tube Material		K MONEL						K MONEL					
	Extension Length		8.5"						8.5"					
	SIGNALS: Transmitting Output – Range & Units		3-15 PSIG						3-15 PSIG					
	Transmitting Output – To		PRESS GAGE						LI-312-3					
	Controller Output – Range & Units		—						—					
	Controller Output – To		—						—					
	Power Supply – Electrical, Pneumatic		PNEU, 80 PSIG						PNEU, 80 PSIG					
	Electrical Area Classification		WEATHER TITE						WEATHER TITE					
	CONTROLLER: Proportional Band %													
	Auto – Reset Mode		NO ~~SLOW~~ FAST			NO SLOW FAST			~~NO~~ SLOW FAST			NO SLOW FAST		
	On Level Increase Instrument Output —		~~INC~~ DEC			INC DEC			~~INC~~ DEC			INC DEC		
	OPERATING CONDITIONS: Fluid	Upper	Lower	AROCLOR					AROCLOR					
	Sp. Gr. @ Oper. Temp.	Upper	Lower	1.26	1.32				1.26	1.32				
	Temperature °C	Normal	Max.	300	345				300	345				
	Pressure PSIA	Normal	Max.	2.7	0				15	15				
	Piped & Mt'd Air Supply Reg.			YES	~~NO~~		YES	NO	YES	~~NO~~		YES	NO	
	REMARKS: Accessories or Special Features													
	AIR FIN EXTENSION			YES					YES					
	SUPPLY PRESSURE REGULATOR			YES					YES					
	INDICATING GAUGE 3½" DIAM, 0-100 SCALE			YES					YES					
	ON LEVEL INCREASE: TRANSMITTER OUTPUT			INCREASES					INCREASES					
2	PURCH.: Manufacturer			FISHER					FISHER					
6*	*Catalog No.			2500T-249BP					2500T-249 BP					
	P.O. No.			0020					0020					
	Price			# 650 EST					# 650 EST					

REV.	DATE					
0		PREPARED	EHJ	10/26/70	4	
1		CHG EXTENSION LENGTH	EHJ	11/30/70	5	
2		CHG LICA-305-3 TO LIA-305-3	EHJ	12/2/70	6	
3		CHG DISP & EXTEN LENGTH 305 312	EHJ	1/4/71	7	

PCB-ARCH-EXT0374239

Monsanto COMPANY — LOCATION WGK	*DIRECT OPERATED *PRESSURE REGULATING *VALVE SPECIFICATIONS	DIVISION 002 / AUTH NO. 2417	PLANT WGK / DEPT OR AREA 246	* SPEC NO. IS-2417-A2 / SHEET 5 OF 1 / RE

1	Valve No.		2417-	PCV-303-1			PCV-303-2			PCV-308-2							
	Service			+PG-303-1			+PG-303-2			STEAM TO STEAM JET							
	Line Number & Size			FIELD CABINET			→			SM-1-F3817-1½"							
	Process Material			INST AIR			→			STEAM							
	Operating Data	Flow Temperature		AMBIENT			→			390°F							
		Working Pressure (PSIG-Inlet)		60			→			200 PSIG							
		Valve to Close Against (PSIG.)		(60)			→			200 PSIG							
		Sp. Gr. @ Flow Temp.		1.0			→			2.1 FT³/#							
	Design Conditions Gas @ 60°F 14.7 PSIA Liquid @ Flow Temp.	Normal Flow		0			→			500 #/HR							
		Max. Flow		0			→			600 #/HR							
		Units: SCFM, SCFH, GPM or #/Hr.		SCFH			→			#/HR							
		Fluid		LIQ.	GAS	STM	LIQ.	GAS	STM	LIQ.	GAS	STM	LIQ.	GAS	STM		
		Inner Valve Travel, % @ Design Flow		—			—										
		ΔP	C_V (Calc.) @ Design Cond.	55	—		50	—									
		Calculation Sheet No.		—			—										
8*	Valve Specifications	*Valve Body Size		¼" NPT			→			1½"							
		Valve Port Size		—			—			FULL							
		Body Rating & Conn. Size		250PSI	¼" SCRD		→			250#	1½" R.F.						
7		Body Material		ALUMINUM			→			HI TENSILE IRON							
		Trim Material		BRASS			→			STAINLESS STL							
		Type Inner Valve		BUNA N			→			STAINLESS STL							
		Seats (Double or Single)		(SP)	DP		(SP)	DP		(SP)	DP		SP	DP			
		Valve actuator (Diaph or ~~Piston~~)		(DIAPH)	PISTON		(DIAPH)	PISTON		(DIAPH)	~~PISTON~~		DIAPH	PISTON			
		Matl of Const (Diaph or ~~Piston~~)		BUNA N			→			STAINLESS STL							
		Lubricator	Isolating Valve	—	—		—	—		—	PILOT						
		Packing		—			—			NONE							
		Guiding		SKIRT	(TOP)	BTM	SKIRT	(TOP)	BTM	SKIRT	TOP	(BTM)	SKIRT	TOP	BTM		
	Spring Setting		PSIG	5			10			150 #							
9*	*Spring Range		PSIG	5-20			5-20			70-150 #							
	On Increased Pressure Valve			OPENS	(CLOSES)		OPENS	CLOSES		OPENS	(CLOSES)		OPENS	CLOSES			
	Type of Regulator									PILOT OPTA.							
	REMARKS	Accessories or Special Features								REDUCING							
		2" OUTPUT GAUGE		YES			YES			VALVE							
		PANEL MOUNTING		YES			YES										
	DIMENSIONS			FLOW 2⅜ 5⅞ 2½			FLOW 2⅜ 5⅞ 2½			FLOW 10⅜ 7" 8½			FLOW				
2	PURCHASING	Manufacturer		FISHER			→			FISHER							
6*		*Catalog No.		67RPTC			→			92B							
		P.O. No.		0042			0042			0042							
		Price		# 15			# 15			# 183							

REV. DATE									
	0	PREPARED	EHS	12/31/70	4				
	1	ADDED PCV-308-2	EHS	12/31/70	5				
	2				6				
	3				7				

ES 109 (10/66)

PCB-ARCH-EXT0374240

PHASE 2

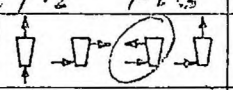
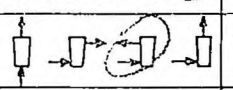
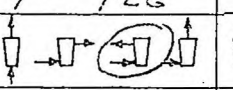
Per 7*

4*

Monsanto COMPANY LOCATION WGK

*ROTAMETER SPECIFICATIONS

DIVISION	PLANT	*SPEC NO.	
002	WGK	IS-2417-44	
AUTH NO.	DEPT OR NO.	SHEET	REV
2417	246	6 OF 6	1

					FI 539-1	FI 540-1	FI 331-1
Instrument No.					2417 -		
Service					Flow	→	→
					INDICATION	→	→
Process Material					AROCLOR "	→	→
Line No.					1-541-1-A11-1½"	→	1-331-2-F2816-1"
Line Size, Schedule					1½", 40	→	1", 40
SERVICE	Operating Conditions	Pressure	Temp.		20 PSIG / 150°F	→ / →	10 PSIG / 150°F
		S.P. Gr.	Visc. C.P.		1.34 / 7.0	→ / →	1.25 / 7
	Base Conditions	Pressure	Temp.		— / —	- / -	— / —
		Sp. Gr.	Visc.		— / —	- / -	— / —
	Inlet Pressure – Max.				90 PSIG	→	75 PSIG
	Flow @ Base Conditions	Liquid			5.0 GPM	→	1.0 GPM
		Gas			—	—	—
		Steam			—	—	—
	Fluid Character	Clean	Trans.	Steady	CLEAN, TRANS	→	TRANS
		Slurry	Opaque	Pulse	STEADY	→	→
3 CASE	Indicating, Recording, Transmitting						
	Chart Or Scale	Size & Type					
		Range					
		Drive & Speed					
SIGNAL	Instrument Output	Range & Units					
		To					
	Power Supply: Electrical, Pneumatic						
	Electrical Area Classification						
6* BODY	*Connection – Size & Rating				1½" FLG	→	1" FLG
	Arrangement of Connections	Inlet					
		Outlet					
	Metering Tube Size (by Vendor)				8	→	6
	Meter △P Normal (by Vendor)				11" WC, AT 7.6 GPM	→	9.7" WC; AT 4.9 GPM
	Materials Of Construction	Body Fittings			316 SS	→	→
		Metering & Ext. Tube			GLASS	→	→
		Float			316 SS, BSVT-84	→	316SS BSVT-64
		Packing or Gaskets			TEFLON	→	→
REMARKS	Accessories or Special Features						
	LAMINATED SAFETY GLASS WINDOW				YES	→	→
	GLASS TUBE ROTAMETER				YES	→	→
	SAFE WORKING PRESSURE				130 PSIG	→	175 PSIG
	SCALE LENGTH				10"	→	→
	SCALE READING				PERCENTAGE	→	→
	MAX FLOW (AROCLOR) GPM				13	→	4.1
2 5* PURCH.	Manufacturer				FISCHER & PORTER	→	→
	*Catalog Number				10A1736A	→	→
	Purchase Order Number				0063	0063	0063
	Price				$ 270	$ 270	$ 204

REV.							
	0	PREPARED	EHS	1/27/71	4		
	1	CHG FLOAT SPEC	EHS	3/1/71	5		
	2	CHG CATALOG NO	EHS	4/21/71	6		
	3				7		

ES 102 (10/66)

PCB-ARCH-EXT0374241

VARIANCE # 1

Per 7*

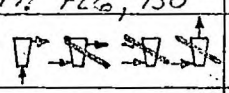
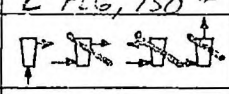
4*

Monsanto COMPANY

LOCATION WGL

*ROTAMETER SPECIFICATIONS

DIVISION	PLANT	*SPEC NO.
002	WGK	IS-2417-44
AUTH NO.	DEPT OR NO.	SHEET / REV
2417	246	7 OF 7 / 1

Instrument No.				2417 -	FT-303-1	→		FT-303-3	→			
Service												
Process Material					MCS-1016	ORTHO-CHLORO		MCJ-1016	ORTHO-CHLORO			
Line No.					1-302-4-A11-2"			1-302-1-A11-4"				
Line Size, Schedule					2", 40			4", 40				
SERVICE	Operating Conditions	Pressure PSIA	Temp. °C		14.7	65	14.7	80	1.0	65	7.0	80
		S.P. Gr.	Visc. C.P.		1.35	7.0	1.00	1.5	1.35	7.0	1.00	1.5
	Base Conditions	Pressure	Temp.		—	—	—	—	—	—	—	—
		Sp. Gr.	Visc.		—	—	—	—	—	—	—	—
	Inlet Pressure – Max. PSIA				14.7		14.7		1.0		7.0	
	Flow @ OPERATING ~~Base~~ Conditions	Liquid	MIN	MAX GPM	9.5	14	15.6	28	25	27	62.2	69.1
		Gas			—		—		—		—	
		Steam			—		—		—		—	
	Fluid Character	Clean	Trans.	Steady	LIQUID-STEADY	→		→		→		→
		Slurry	Opaque	Pulse	CLEAN	→		→		→		→
3 CASE	Indicating, Recording, Transmitting				INDICATE +				INDICATE +			
	Chart Or Scale	Size & Type			TRANSMIT				TRANSMIT			
		Range			5" SCALE				5" SCALE			
		Drive & Speed			8-100 %				8-100 %			
SIGNAL	Instrument Output	Range & Units			3-15 PSIG				3-15 PSIG			
		To			FIC-303-1				FI-303-3			
	Power Supply: ~~Electrical~~, Pneumatic				20 PSIG				20 PSIG			
	Electrical Area Classification				—				—			
6* BODY	*Connection – Size & Rating				1½" FLG, 150#		△2		2" FLG, 150#			
	Arrangement of Connections	Inlet										
		Outlet										
	Metering Tube Size (by Vendor)				MB-35-5-SV				MJ-24-5-SV			
	Meter △P Normal (by Vendor) AT ANY FLOW				36 " WC		38 " WC		35.6" WC		37.5" WC	
	Materials Of Construction	Body Fittings			316 SS				CARBON STL			
		Metering & Ext. Tube			316 SS				CARBON STL			
		Float			316 SS				316 SS			
		Packing or Gaskets			TEFLON				TEFLON			
REMARKS	Accessories or Special Features				NEW TUBE & FLOAT TO BE INSTALLED IN EXISTING- △1							
	ROTAMETER MAX CAPACITY @ OPERATING CONDITIONS				METERS by FIELD 29.3 GPM		35.0 GPM		83.3 GPM		99.2 GPM	
	H2O EQUIV				35.0 GPM		35.0 GPM		99.2 GPM		99.2 GPM	
	ACCURACY				± 2% F.S.				± 2% FS			
	AIR FILTER REG W/GAGE				YES				YES			
	NOTE 1. BOTH FLOWMETERS ARE TO BE SUITABLE FOR BOTH MCS-1016 & ORTHO-CHLORO SERVICE											
	NOTE 2. FIELD TO STEAM TRACE METERS & EXTENSION LINE △1											
2 5* PURCH.	Manufacturer				FISCHER & PORTER				FISCHER & PORTER			
	*Catalog Number				10A 1152A-OK-1401KA41				-1401KA41			
	Purchase Order Number				0012 ch.2				0012 ch 2			
	Price				$600 EST.				$509			

REV.												
	△0	PREPARED	EHS	4/8/71	△4							
	△1	Added Notes	EHH	6/3/71	△5							
	△2	REV as built	CJH	7/30/71	△6							
	△3				△7							

PCB-ARCH-EXT0374242

Per 10*
3*
4*

Monsanto COMPANY — LOCATION W6K

***FLOW MEASURING *ELEMENT SPECIFICATIONS**

DIVISION	PLANT	*SPEC NO.	
002	W6K	IS-2417-45-	
AUTH NO.	DEPT OR AREA	SHEET	REV
2417	246	2 OF 4	2

1	Instrument No.		2417 -	FE-307-2	FE-307-5	FO 305-4
	Service				AROCLOR FLOW FROM FURNACE	RESTRICTING ORIFICE (1)
	Process Material			FUEL GAS	AROCLOR	AROCLOR
	Line No.			F27-2"	1-307-1-F2316-8"	1-307-1-F2B16-8"
	Line Size, Schedule			2", 40	8", 40	8", 40
SERVICE	Upstream Operating Conditions	Flowing Press. P_f		28 PSIG	15 PSIG	15 PSIG
		Flowing Temp T_f		60°F	300°C	300°C
		Sp. Gr. @ T_f		.133 #/FT³	1.35	1.35
		Viscosity CP @ T_f		0.01	1.6	1.6
		Sp. Gr. @ 60°F		.133 #/FT³	—	—
		Supercompr. Factor @ T_f				
		Steam Quality, %				
		Steam Superheat, F				
	Flow at Base Conditions 60F & 14.73 PSIA Barometric Pressure at Location ____ In. Hg.	Liquid, Gas or Steam		GAS	LIQUID	LIQUID
		Minimum Flow		0	0	0
		Normal Flow		8960	600	600
		Maximum Flow		13500 (2)	600	600
		Units of Flow		SCFH	GPM	GPM
		Meter Range		0-44.61" WC	0-50" W.C.	NONE
8*	FLANGES *Size & Type – W.N., S.O., Scrd., Van Stone[1]			2" W.N.	3" S.O.	8" W.N.
9*	*Rating & Facing			300# RF	300# RF	150# ASA
7→	Material – Flange & R.T.J. Ring or Gasket[1]			CARBON STEEL	CARBON STL	CARBON STL
	Taps – Type, Size & Orientation (R2.3 Std)			FLG ½" NPT SIDE	FLG ½" NPT SIDE	NONE
	ORIFICE PLATE Type of Plate (R2.3 Std)			PADDLE TYPE	PADDLE TYPE	PADDLE TYPE
	Plate Material & Thickness			304 SS, ⅛"	304 SS, ⅛"	304 SS, ⅛"
	Pipe ID (D), In.			2.067"	7.981"	7.981
	Orifice ID (d), In.			1.06381	5.04671	4.50027
	d/D Ratio (β)			0.51466	0.63234	.56387
6→	Meter Range – Inches Water Dry			40"	50"	ΔP = 2.0 PSI
	Type of Meter			FOX D/P	BARTON BELLOWS	NONE
	Drain or Vent Hole			NONE	NONE	NONE
	Chart or Scale Range			0-10 SQ RT	0-10 SQ RT	NONE
	Chart Factor (7)			X 1350	X 60	NONE
	Calculation Sheet No.					
	REMARKS CAT NO. METER RUN OR ORIFICE FLANGE			M-30RW	30RS	
	CAT NO. ORIFICE PLATE			520	520	520
	ACCESSORIES			MFG. STD	MFG STD	
	GASKETS			ASBESTOS	ASBESTOS	ASBESTOS
	All orifice handles to be stamped on upstream side with "Inlet", bore dia, nom pipe ID, flange rating, instrument number and plate material					(ORIFICE PLATE ONLY)
2	PURCH. Manufacturer			DANIEL IND	→	→
5*	*Catalog Number			AS ABOVE	→	→
	Purchase Order Number			0041	0041	DELETE
	Price			#125		

REV								
(0)	PREPARED	EHS	10/19/70	(4)				
(1)	ADD FO 305-4	EHS	11/17/70	(5)				
(2)	CHG METER RANGE	EHS	2/9/71	(6)				
(3)				(7)				

PCB-ARCH-EXT0374243

Por 6*

3*

Monsanto COMPANY — LOCATION WGK	PROCESS ACTUATED * SWITCHES SPECIFICATIONS	DIVISION 002	PLANT WGK	*SPEC NO. IS-2417-54
		AUTH NO. 2417	DEPT OR AREA 246	SHEET 1 OF 4 — REV 1

1

Instrument No. 2417 —			LA-305-3.1	LA-305-3.2	LA-316-1.1	LA-316-1.2
Service			HIGH LEVEL ALARM	LOW LEVEL ALARM	HIGH LEVEL ALARM	LOW LEVEL ALARM
Equipment No. or Line No. & Size						
Process Material			INST AIR	INST AIR	→	→
GENERAL: Press. Temp. – Level Flow Switch – Relay			PRESSURE	→	→	→
GENERAL: Temperature	Normal	Max.	AMBIENT	AMBIENT	→	→
GENERAL: Pressure PSIG	Normal	Max.	9 / 15	9 / 15	→	→
GENERAL: Fluid (Level Only)	Upper	Lower				
GENERAL: Sp. Gr. @ Oper. Temp.	Upper	Lower				

5*

ELEMENT: *Range & Units PSIG			1-20	1-20	→	→
ELEMENT: Pressure — Type Element & Material			DIAPHRAGM	DIAPHRAGM	→	→
ELEMENT: Pressure — Conn. Size	Orientation		¼" NPT	BTM ¼" NPT	BTM →	→
ELEMENT: Temp. — Fill – Gas, Mercury, etc.						
ELEMENT: Temp. — Capillary – Length	Material					
ELEMENT: Temp. — Armor Material						
ELEMENT: Temp. — Bulb-Diameter	Length					
ELEMENT: Temp. — Bulb Type – Plain, Union						
ELEMENT: Temp. — Bulb Conn. – Size & Rating						
ELEMENT: Temp. — Well Material						
ELEMENT: Temp. — Well Conn. Size & Rating						
ELEMENT: Temp. — Lgth below Thread or Flange "U" (SEE NOTE)						
ELEMENT: Temp. — Lagging Extension "T" (SEE NOTE)						
ELEMENT: Level — Type & Material						
ELEMENT: Level — Connection Size & Rating						
ELEMENT: Level — Connection Arrangement						
ELEMENT: Level — Cooling Fin or Extension						
ELEMENT: Level — Float Material & Size						
ELEMENT: Flow — Connection or Body Size						
ELEMENT: Flow — Type Element & Matl.						
ELEMENT: Flow — Disc or Paddle Size						

SWITCH: Type – Mercury, Micro, etc.			MERCURY	MERCURY	→	→
SWITCH: Contact Arrangement	Rating – Volts & Amps		SPDT, 4A/120V	SPDT, 4A/120V	→	→
SWITCH: Set Point			14 PSIG	4 PSIG	→	→
SWITCH: On Measurement Increase Switch			~~OPENS~~ / ~~CLOSES~~	~~OPENS~~ / ~~CLOSES~~	~~OPENS~~ / ~~CLOSES~~	~~OPENS~~ / ~~CLOSES~~
SWITCH: Electrical Area Classification			G.P. NEMA 1	G.P. NEMA 1	→	→
SWITCH: Conduit Conn. Size & Hub or K.O.			½"	½"	→	→
SWITCH: Differential Range – Fixed, Adjustable			FIXED	FIXED	→	→

REMARKS: Accessories or Special Features						
REMARKS: ADJUSTABLE SET POINT			YES	YES	→	→
REMARKS: SWITCH FIELD-WIRED TO OPEN ON ALARM			YES	YES	→	→

2

4*

PURCH.: Manufacturer			MERCOID	→	→	→
PURCH.: *Catalog No.			AP-153-R36	→	→	→
PURCH.: P.O. No.			# 0015	# 0015	0015	0015
PURCH.: Price			18	18	→	→

REV.						
0	PREPARED	EHS	10/26/70	4		
1	CHG. INST. NO.	EHS	11/17/70	5		
2				6		
3				7		

NOTE: For explanation of dimensions U, T ref. to ISA RP-20.1 Pg. 16.

PCB-ARCH-EXT0374244

Monsanto COMPANY — LOCATION WGK	PROCESS ACTUATED * SWITCHES SPECIFICATIONS	DIVISION 002	PLANT WGK	*SPEC NO. IS-2417-54
		AUTH NO. 2417	DEPT OR AREA 246	SHEET 2 OF 4 — RE 1

Instrument No.	2417 -	LA-312-3.1	LA-312-3.2	PA-312-6	PA-301-5
Service		HIGH LEVEL ALARM	LOW LEVEL ALARM	HI PRESSURE ALARM	HI-PRESSURE ALARM
Equipment No. or Line No. & Size				312	
Process Material		INST AIR	→	NITROGEN	INST AIR
GENERAL — Press. Temp. – Level Flow Switch – Relay		PRESSURE	→	→	PRESSURE
GENERAL — Temperature — Normal / Max.		AMBIENT	→	→	AMBIENT
GENERAL — Pressure PSIG — Normal / Max.		9 PSIG / 15 PSIG	→	0" WC / 5" WC	3 PSIG / 15 PSIG
GENERAL — Fluid (Level Only) — Upper / Lower					
GENERAL — Sp. Gr. @ Oper. Temp. — Upper / Lower					
ELEMENT — *Range & Units		1-20 PSIG	→	1-30" W.C.	1-20 PSIG
ELEMENT — Pressure — Type Element & Material		DIAPHRAGM	→	DIAPHRAGM	DIAPHRAGM
ELEMENT — Pressure — Conn. Size / Orientation		¼" NPT / BTM	→	½" NPT / BTM	¼" NPT / BTM
ELEMENT — Temp. — Fill – Gas, Mercury, etc.					
ELEMENT — Temp. — Capillary – Length / Material					
ELEMENT — Temp. — Armor Material					
ELEMENT — Temp. — Bulb-Diameter / Length					
ELEMENT — Temp. — Bulb Type – Plain, Union					
ELEMENT — Temp. — Bulb Conn. – Size & Rating					
ELEMENT — Temp. — Well Material					
ELEMENT — Temp. — Well Conn. Size & Rating					
ELEMENT — Temp. — Lgth below Thread or Flange "U" (SEE NOTE)					
ELEMENT — Temp. — Lagging Extension "T" (SEE NOTE)					
ELEMENT — Level — Type & Material					
ELEMENT — Level — Connection Size & Rating					
ELEMENT — Level — Connection Arrangement					
ELEMENT — Level — Cooling Fin or Extension					
ELEMENT — Level — Float Material & Size					
ELEMENT — Flow — Connection or Body Size					
ELEMENT — Flow — Type Element & Matl.					
ELEMENT — Flow — Disc or Paddle Size					
SWITCH — Type – Mercury, Micro, etc.		MERCURY	→	→	MERCURY
SWITCH — Contact Arrangement / Rating – Volts & Amps		SPDT, 4A/120V	→	→	SPDT, 4A/120V
SWITCH — Set Point		14 PSIG	4 PSIG	5" W.C.	14 PSIG
SWITCH — On Measurement Increase Switch		~~OPENS~~ / ~~CLOSES~~	~~OPENS~~ / ~~CLOSES~~	OPENS / ~~CLOSES~~	OPENS / ~~CLOSES~~
SWITCH — Electrical Area Classification		G.P. NEMA 1	→	WEATHER RESISTANT	G.P. NEMA 1
SWITCH — Conduit Conn. Size & Hub or K.O.		½"	→	→	½"
SWITCH — Differential Range – Fixed, Adjustable		FIXED	→	→	FIXED
REMARKS — Accessories or Special Features				RANGE P1	
REMARKS — ADJUSTABLE SET POINT		YES	→	YES	YES
REMARKS — SWITCH FIELD-WIRED TO OPEN ON ALARM		YES	→	YES	YES
PURCH. — Manufacturer		MERCOID	→	→	MERCOID
PURCH. — *Catalog No.		AP-153-R36	→	PGW-153	AP-153-R36
PURCH. — P.O. No.		#0015	0015	SPARE	0061
PURCH. — Price		#18	→	#60	#18

REV.					
0	PREPARED	EHS	10/20/70	4	
1	ADDED PA-312-6	EHS	11/25/70	5	
2	ADDED PA-301-5	EHS	2/25/71	6	
3				7	

ES 113 (10/66)

PCB-ARCH-EXT0374245

CHG LA-328-1 TO LA-328-1.1

Per 6*

3*

Monsanto COMPANY — LOCATION WGK

PROCESS ACTUATED * SWITCHES SPECIFICATIONS

DIVISION	PLANT	*SPEC NO.
002	WGK	IS-2417-S
AUTH NO.	DEPT OR AREA	SHEET R
2417 (1)	246	3 OF 4

			LA-329-1	LA-328-1.1	LA-328-1.2
1	Instrument No.		2417-		
	Service		HI LEVEL ALARM	HI LEVEL ALARM	LO LEVEL ALARM
	Equipment No. or Line No. & Size		329	328	328 (1)
	Process Material		INST AIR	INST AIR	INST AIR
GENERAL	Press. Temp. – Level Flow Switch – Relay		PRESS	PRESS	PRESS
	Temperature	Normal / Max.	AMBIENT	AMBIENT	AMBIENT
	Pressure PSIG	Normal / Max.	3 / 15	3 / 15	3 / 15
	Fluid (Level Only)	Upper / Lower			
	Sp. Gr. @ Oper. Temp.	Upper / Lower			
5*	*Range & Units PSIG		1-20	1-20	1-20
ELEMENT	Pressure	Type Element & Material	DIAPHRAGM	DIAPHRAGM	DIAPHRAGM
		Conn. Size / Orientation	1/4" NPT / BTM	1/4" NPT / BTM	1/4" NPT / BTM
	Temp.	Fill – Gas, Mercury, etc.			
		Capillary – Length / Material			
		Armor Material			
		Bulb-Diameter / Length			
		Bulb Type – Plain, Union			
		Bulb Conn. – Size & Rating			
		Well Material			
		Well Conn. Size & Rating			
		Lgth below Thread or Flange "U" (SEE NOTE)			
		Lagging Extension "T" (SEE NOTE)			
	Level	Type & Material			
		Connection Size & Rating			
		Connection Arrangement			
		Cooling Fin or Extension			
		Float Material & Size			
	Flow	Connection or Body Size			
		Type Element & Matl.			
		Disc or Paddle Size			
SWITCH	Type – Mercury, Micro, etc.		MERCURY	MERCURY	→
	Contact Arrangement / Rating – Volts & Amps		SPDT; 4A/120V	→	→
	Set Point		14.5 PSIG	14.5 PSIG	4 PSIG
	On Measurement Increase Switch		(OPENS) / CLOSES	(OPENS) / CLOSES	OPENS / (CLOSES)
	Electrical Area Classification		G.P. NEMA 1	G.P. NEMA 1	→
	Conduit Conn. Size & Hub or K.O.		1/2"	1/2"	→
	Differential Range – Fixed, Adjustable		FIXED	FIXED	→
REMARKS	Accessories or Special Features				
	ADJUSTABLE SET POINT		YES	YES	→
	OPEN ON ALARM		YES	YES	→
	MOUNT IN FIELD CABINET		YES	YES	→
2	Manufacturer		MERCOID	MERCOID	→
4*	*Catalog No.		AP-153-R36	AP-153-R36	→
PURCH.	P.O. No.		0036	0036	0061
	Price		# 18	# 18	# 18

REV.					
	0	PREPARED	EHS	12/23/70	4
	1	ADD LA-328-1.2 CHG LA-328-1 TO LA-328-1.1	EHS	1/26/71	5
	2				6
	3				7

ES-113 (10/66)

NOTE: For explanation of dimensions U, T ref. to ISA RP 20.1 Pg. 16

PCB-ARCH-EXT0374246

PHASE 2

Monsanto COMPANY — LOCATION WGK

PROCESS ACTUATED * SWITCHES SPECIFICATIONS

DIVISION	PLANT	*SPEC NO.
002	WGK	IS-2417-54
AUTH NO.	DEPT OR AREA	SHEET / REV
2417	296	1 OF 1 / 0

Instrument No.			2417 - FA-349-1								
Service			LOW FLOW ALARM								
Equipment No. or Line No. & Size			1-349-1-A11-1½								
Process Material			INST AIR								
GENERAL: Press. Temp. – Level Flow Switch – Relay			PRESSURE								
Temperature	Normal	Max.	AMBIENT								
Pressure	Normal	Max.	9	15							
Fluid (Level Only)	Upper	Lower	~~X~~	~~X~~							
Sp. Gr. @ Oper. Temp.	Upper	Lower	~~X~~	~~X~~							
ELEMENT: *Range & Units			1-20 PSIG								
Pressure: Type Element & Material			DIAPHRAGM								
Pressure: Conn. Size	Orientation		¼" UPT/BTM								
Temp.	Fill – Gas, Mercury, etc.		~~X~~								
Temp.	Capillary – Length	Material	~~X~~								
Temp.	Armor Material		~~X~~								
Temp.	Bulb-Diameter	Length	~~X~~								
Temp.	Bulb Type – Plain, Union		~~X~~								
Temp.	Bulb Conn. – Size & Rating		~~X~~								
Temp.	Well Material		~~X~~								
Temp.	Well Conn. Size & Rating		~~X~~								
Temp.	Lgth below Thread or Flange "U" (SEE NOTE)		~~X~~								
Temp.	Lagging Extension "T" (SEE NOTE)		~~X~~								
Level	Type & Material		~~X~~								
Level	Connection Size & Rating		~~X~~								
Level	Connection Arrangement		~~X~~								
Level	Cooling Fin or Extension		~~X~~								
Level	Float Material & Size		~~X~~								
Flow	Connection or Body Size		~~X~~								
Flow	Type Element & Matl.		~~X~~								
Flow	Disc or Paddle Size		~~X~~								
SWITCH: Type – Mercury, Micro, etc.			MERCURY								
Contact Arrangement	Rating – Volts & Amps		SPDT, 4A/120V								
Set Point			4 PSIG								
On Measurement Increase Switch			~~OPENS~~ CLOSES		OPENS	CLOSES	OPENS	CLOSES	OPENS	CLOSES	
Electrical Area Classification			G.P., NEMA 1								
Conduit Conn. Size & Hub or K.O.			½"								
Differential Range – Fixed, Adjustable			FIXED								
REMARKS: Accessories or Special Features											
ADJUSTABLE SET POINT			YES								
SWITCH FIELD WIRED TO OPEN ON ALARM			YES								
PURCH.: Manufacturer			MERCOID								
*Catalog No.			AP-153-R36								
P.O. No.			0061								
Price			$ 18								

REV.						
0	PREPARED	EHS	11/26/71	4		
1				5		
2				6		
3				7		

ES 113 (10/66)

NOTE: For explanation of dimensions U, T ref. to ISA RP-20.1 Pg. 16.

PCB-ARCH-EXT0374247

Per 7*

Monsanto COMPANY LOCATION WGK

RECEIVER – CONTROLLER SPECIFICATION

~~ELECTRONIC~~ – PNEUMATIC

DIVISION	PLANT	*SPEC NO.	
002	WGK	IS 2417-12	
AUTH NO.	DEPT OR AREA	SHEET	REV
2417	246	1 OF 4	1

1	Instrument No.		2417 –	PIC-301-5		PDI-301-4		FIC-303-1		LI-312-3		
	Service											
	Location – Panel or Equipment No.			PANEL		→		→		→		
3	RECEIVER	Record Indicate Control		INDICATR, CONTROL		INDICATE		INDIC, CONTROL		INDICATE		
6*		*Number of Points		1		1		1		1		
		Chart	Size & Type									
			Range									
			Drive / Speed									
		Scale	Size & Type	10"x1¾" TAPE		4"x1¾" FXD		4"x1¾" FXD		4"x1¾" FXD		
			Range	0-100 LIN		0-10 LIN		0-10 LIN		0-10 LIN		
		Ratio, Cascade, Computer – Set		MECH SET PT		NONE		CASCADE		NONE		
		Auto – Manual By Pass		YES	~~NO~~	YES	NO	YES	~~NO~~	YES	NO	
	CONTROLLER	Location		INTEG.	~~REMOTE~~	INTEG.	REMOTE	INTEG.	~~REMOTE~~	INTEG.	REMOTE	
		Proportional Band %		2-500 %		NONE		2-500 %		NONE		
		Auto-Reset Mode		~~NO~~	SLOW / ~~FAST~~	NO	SLOW / FAST	~~NO~~	SLOW / ~~FAST~~	NO	SLOW / FAST	
		Rate Mode		~~YES~~	NO	YES	NO	~~YES~~	NO	YES	NO	
		On Measurement Increase Instrument Output		~~INC.~~	DEC	INC.	DEC	~~INC.~~	DEC	INC.	DEC	
	SIGNALS	Measurement Input	Range & Units	3-15 PSIG		3-15 PSIG		3-15 PSIG		3-15 PSIG		
			From	PT 301-5		PDT 301-4		FT 303-1		LT 312-3		
		Controller Output	Range & Units	3-15 PSIG		NONE		3-15 PSIG		NONE		
			To	PV 301-5		NONE		ITEM 303		NONE		
		Set Point	Range & Units			NONE		3-15 PSIG		NONE		
			From			NONE		FCV –		NONE		
		Power Supply – Electric, Pneumatic		PNEUMATIC		PNEUMATIC		→		PNEUMATIC		
		Electrical Area Classification		GEN. PURPOSE		GEN. PURPOSE		→		→		
	REMARKS	Accessories or Special Features										
		REMOTE SET POINT		NO		NO		YES		NO		
		COLOR		TAN		TAN		TAN		TAN		
		LOCAL SET POINT		YES		NO		NO		NO		
		PROCESS VARIABLE INDIC		YES		YES		YES		YES		
		SET POINT INDICATION		NO		—		YES		—		
								1				
2	PURCH.	Manufacturer		FISCHER & PORTER		→		→				
4*		*Receiver Catalog No.	51-	1351ABFC		1352FPBC		1351AEFC		1352FPAC		
5*		*Controller Catalog No.										
		P.O. No.		0012		0012		0012		0012		
		Price		#460 EST		#170 EST		#441 EST		#170 EST		

REV.	DATE						
0		PREPARED	EHS	10/16/72	4		
1		AS NOTED	EHJ	4/8/71	5		
2					6		
3					7		

PCB-ARCH-EXT0374248

Per 7*

Monsanto COMPANY — LOCATION W6K

RECEIVER – CONTROLLER SPECIFICATION
ELECTRONIC – PNEUMATIC

DIVISION	PLANT	*SPEC NO.	REV
002	W6K	IS-2417-12	0
AUTH NO.	DEPT OR AREA	SHEET	
2417	246	3 OF 4	

1	Instrument No.		2417-	FIC-349-1		LIC-305-3		FIC 54-1			
	Service			FLOW CONTROL		LEVEL, INDIC CONTROL		FLOW to #2 & #3 Absorbers			
	Location – Panel or Equipment No.			PANEL		PANEL					
3	RECEIVER: Record Indicate Control			INDICATE + CONTROL		INDICATE + CONTROL		Ind. & Control			
6*	RECEIVER: *Number of Points			1		1					
	RECEIVER: Chart	Size & Type									
		Range									
		Drive / Speed									
	RECEIVER: Scale	Size & Type		10"X1 3/4" TAPE		10"X1 3/4" TAPE		10"X1 3/4" TAPE			
		Range		0-10 SQ RT		0-100 LIN		0-100 Sq. Rt.			
	RECEIVER: Ratio, Cascade, Computer – Set			MECH SET PT		MECH SET PT		Mech Set Pt			
	RECEIVER: Auto – Manual By Pass			(YES) ~~NO~~		(YES) ~~NO~~		(YES) NO		YES	NO
	CONTROLLER: Location			(INTEG.) ~~REMOTE~~		(INTEG.) ~~REMOTE~~		(INTEG.) REMOTE		INTEG.	REMOTE
	CONTROLLER: Proportional Band %			2-500 %		2-500%					
	CONTROLLER: Auto-Reset Mode			(NO) ~~SLOW~~ ~~FAST~~		(NO) ~~SLOW~~ ~~FAST~~		NO SLOW (FAST)		NO	SLOW FAST
	CONTROLLER: Rate Mode			YES (NO)		~~YES~~ (NO)		YES (NO)		YES	NO
	CONTROLLER: On Measurement Increase – Instrument Output			INC. (DEC)		~~INC.~~ (DEC)		INC. (DEC)		INC.	DEC
	SIGNALS: Measurement Input	Range & Units		3-15 PSIG SQ RT		3-15 PSIG LIN		3-15 Sq Rt.			
		From		FT-349-1		LIA-305-3		FT 54-1			
	SIGNALS: Controller Output	Range & Units		3-15 PSIG		3-15 PSIG		3-15			
		To		FV-349-1		LV-305-3		FV 54-1			
	SIGNALS: Set Point	Range & Units									
		From									
	SIGNALS: Power Supply – Electric, Pneumatic			PNEUMATIC		PNEUMATIC					
	SIGNALS: Electrical Area Classification			GEN PURP.		GEN PURP					
	REMARKS: Accessories or Special Features										
	REMARKS			FIELD NOTE: THE CONTROLLER IN THIS UNIT IS TO BE SWAPPED WITH THE CONTROLLER IN FIC-303-1				existing 1900 FIC 326 FV 32 IN PLACE.			
	REMARKS: COLOR			TAN		TAN					
	REMARKS: LOCAL SET POINT			YES		YES					
2	PURCH. Manufacturer			FISCHER-PORTER		→		F&P			
4*	PURCH. *Receiver Catalog No.		51-	1351 ABBC		1351 ABBC		15-1351 ABEE			
5*	PURCH. *Controller Catalog No.										
	PURCH. P.O. No.			0063		0063		existing			
	PURCH. Price			# 460		# 460					

REV. DATE									
0	PREPARED	EHS	1/20/71	4					
1				5					
2				6					
3				7					

ES 112 (10/66)

PCB-ARCH-EXT0374249

Monsanto

CONTROL VALVE SPECIFICATION

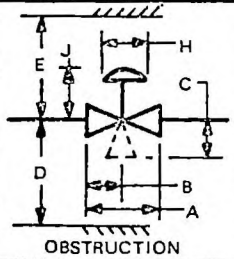
LOCATION	DIVISION	PLANT	SPEC NO.
WGK	002	WGK	IS- 2417 - 30
	AUTH NO. 2417	DEPT OR AREA 246	SHEET 1 OF 1 — REV

INSTRUMENT NUMBER	2417 -	PV 301-5	→	FV 303-1	→
SERVICE		PRESSURE	→	PRODUCT FLOW	PRODUCT FLOW
LINE NUMBER		CONTROL	→	1-302-4-A1A-21"	→
PROCESS MATERIAL		AIR	STEAM	MCS 1016	PRTNO-CHLORO
OPERATING DATA — FLOW TEMPERATURE		60 °F	324 °F	1500 F	1750 F
OPERATING DATA — WORKING PRESSURE (PSIG INLET)		15 PSIA	80 PSIG		
OPERATING DATA — VALVE TO CLOSE AGAINST (PSIG)		15 PSIA	90 PSIG		
OPERATING DATA — SP GR AT FLOW TEMPERATURE		1.0 AIR	0.123 #/CFS	1.35	1.0
OPERATING DATA — VAPOR PRESSURE AT TEMP, MM HG		—	—		
DESIGN COND GAS @ 60 F 14.7 PSIA LIQUID @ FLOW TEMP — FLUID		LIQ / (GAS) / STM	LIQ / GAS / (STM)	(LIQ) / GAS / STM	(LIQ) / GAS / STM
NORMAL FLOW — UNITS		460 SCFH	275 #/HR	9.5 GPM	15.6 GPM
MAXIMUM FLOW — UNITS (REQUIRED)		500 SCFH	275 #/HR	14.0 GPM	25.0 GPM
△ P PSIG		14.7	87	3	3
% TRAVEL & Cv AT DESIGN CONDITIONS		45 / Cs = 31.2	65 / Cs = 2.9	71% / 9	90% / 16
VALVE SPECIFICATION — VALVE BODY SIZE		1"	→	1½"	→
BODY RATING & END CONNECTION		150 # / SCR / (FLG)	/ SCR / (FLG)	150 # / SCR / (FLG)	150 # / SCR / (FLG)
BODY MATERIAL		CARBON STL	→	316 SS	→
TRIM SIZE OR MAXIMUM Cv (Cs or Cs)		¾" / 209	¾" (5.94 Cv) / 10.5	1¼" / 22.6	→
SEATS		(SP) / DP	SP / DP	(SP) / DP	(SP) / DP
TRIM MATERIAL		316 SS	→	MICRO FORM	→
TYPE INNER VALVE		MICRO-FLUTE	→		
PACKING		TEFLON V RING	→		
GUIDING		SKIRT / (TOP) / BTM	SKIRT / TOP / BTM	SKIRT / (TOP) / BTM	SKIRT / (TOP) / BTM
VALVE ACTUATOR		(DIAPH) / PISTON	DIAPH / PISTON	(DIAPH) / PISTON	(DIAPH) / PISTON
SIGNAL FROM INSTRUMENT (PSIG)		3-15 PSIG	→	3-15 PSIG	→
AIR PRESSURE TO OPERATOR		3-15 PSIG	→	3-15 PSIG	→
VALVE POSITIONERS — MODEL NO.		NO			
3 GAGES / BYPASS		— / —			
I/P TRANSDUCER — MODEL NO.		NO			
SIGNAL		—			
PIPED & MOUNTED AIR SUPPLY REGULATOR		YES / (NO)	YES / (NO)	YES / (NO)	YES / (NO)
ON AIR FAILURE VALVE		(CLOSES) / OPENS	(CLOSES) / OPENS	(CLOSES) / OPENS	(CLOSES) / OPENS
FLOW TENDS TO		CLOSE / (OPEN)	CLOSE / OPEN	CLOSE / OPEN	CLOSE / OPEN
AIR SUPPLY TO VALVE (PSIG)		3-15 PSIG	→		

REMARKS

ACCESSORIES OR SPECIAL FEATURES			THIS
COMMENTS	VALVE FLUID WILL BE		SURPLUS VALVE
	AIR OR STEAM DEPEND-		SER. NO. 44 12320
	ING ON THE OPERATING		Replaces FV 303-1
	SITUATION		Purchased on
			2417-4-0020 ch. 1

DIMENSIONS



A. FACE TO FACE	7¼"		8 3/4"
B. FACE TO CENTER	3¼"		4 3/8"
C. FACE TO CENTER	3 13/16"		4 3/8"
D. CLEARANCE	24"		24"
E. CLEARANCE	24"		30"
H. ACTUATOR DIAMETER	11 1/8"		13 5/8"
J. ACTUATOR HEIGHT	12, 12 1/2"		23 3/4

2 Rqd

PURCH.

MANUFACTURER	FISHER		FISHER
CATALOG NUMBER	447-A		6672
PURCHASE ORDER NUMBER	0020 ch 1		SURPLUS
PRICE			

REV

0	PREPARED	EHS	5/27/71	3	
1	Revised Specs FV303-1	EAH	6/1/71	4	
2				5	

ES 110 (REV 2/70)

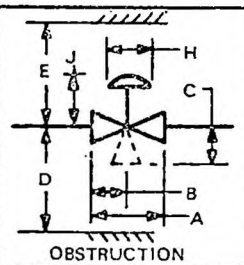
PCB-ARCH-EXT0374250

Monsanto

CONTROL VALVE SPECIFICATION

LOCATION	DIVISION	PLANT	SPEC NO.	REV
W6K	002	W6K	IS-2417-30	3
	AUTH NO. 2417	DEPT OR AREA 246	SHEET 2 OF	

INSTRUMENT NUMBER		2417-TV 325-3	2417-LV 305-3	→		
SERVICE		TEMP	LEVEL			
LINE NUMBER		CWI-E1D2-2"	1-330-1-F2C2-3"			
PROCESS MATERIAL		WATER	MCS 1016	ORTHO-CHLORO		
OPERATING DATA	FLOW TEMPERATURE	180 °F	320 °F			
	WORKING PRESSURE (PSIG INLET)	15 PSIG	10 PSIG			
	VALVE TO CLOSE AGAINST (PSIG)	65 PSIG	40 PSIG			
	SP GR AT FLOW TEMPERATURE	1.0	1.25			
	VAPOR PRESSURE AT TEMP, MM HG	400	6.5			
DESIGN COND GAS @ 60 F 14.7 PSIA LIQUID @ FLOW TEMP	FLUID	(LIQ) GAS STM	(LIQ) GAS STM	LIQ GAS STM	LIQ GAS STM	
	NORMAL FLOW – UNITS	200 GPM	10 GPM			
	MAXIMUM FLOW – UNITS (REQUIRED)	200 GPM	15 GPM	2.8 BPM		
	Δ P	15 PSI	20 PSI			
	% TRAVEL & Cv AT DESIGN CONDITIONS	85% 36.4	55% 2.8	70% 4.5		
VALVE SPECIFICATION	VALVE BODY SIZE	1½"	1"			
	BODY RATING & END CONNECTION	125# SCR (FLG)	150# SCR (FLG)	SCR FLG	SCR FLG	
	BODY MATERIAL	CAST IRON	STEEL			
	TRIM SIZE OR MAXIMUM Cv	1⅞" 39.2	¾" 9.86			
	SEATS	(SP) DP	(SP) DP	SP DP	SP DP	
	TRIM MATERIAL	STAINLESS STL	STAINLESS STL			
	TYPE INNER VALVE	LINEAR CAGE	MICRO FORM VALVE PLUG			
	PACKING	TFE V RING	TFE V RING			
	GUIDING	(SKIRT) TOP BTM	(SKIRT) TOP BTM	SKIRT TOP BTM	SKIRT TOP BTM	
	VALVE ACTUATOR	(DIAPH) PISTON	DIAPH PISTON	DIAPH PISTON	DIAPH PISTON	
	SIGNAL FROM INSTRUMENT (PSIG)	3-15 PSIG	3-15 PSIG			
	AIR PRESSURE TO OPERATOR	3-15 PSIG	3-15 PSIG			
VALVE POSITIONERS	MODEL NO.	NONE	NONE			
	3 GAGES BYPASS					
I/P TRANSDUCER	MODEL NO.	NONE	NONE			
	SIGNAL					
PIPED & MOUNTED AIR SUPPLY REGULATOR		YES (NO)	YES (NO)	YES NO	YES NO	
ON AIR FAILURE VALVE		CLOSES (OPENS)	CLOSES OPENS	CLOSES OPENS	CLOSES OPENS	
FLOW TENDS TO		CLOSE (OPEN)	CLOSE (OPEN)	CLOSE OPEN	CLOSE OPEN	
AIR SUPPLY TO VALVE (PSIG)		3-15	3-15			
REMARKS	ACCESSORIES OR SPECIAL FEATURES					
	ACTUATOR NUMBER	34	30			
	DESIGN NOTE	—	DO NOT EXPOSE TO -305-TEMP			
DIMENSIONS	A. FACE TO FACE	8¾"	7¼			
	B. FACE TO CENTER	4⅜"	3⅝			
	C. FACE TO CENTER	2 7/16"	2½			
	D. CLEARANCE	24"	24"			
	E. CLEARANCE	30"	30"			
	H. ACTUATOR DIAMETER	13⅛	11⅜			
	J. ACTUATOR HEIGHT	19⅝	18 9/16			



PURCH.	MANUFACTURER		FISHER	FISHER				
	CATALOG NUMBER		657-ED	667-ES				
	PURCHASE ORDER NUMBER		0020	0020				
	PRICE		# 355	# 330				

REV								
	0	PREPARED	EHS	12/20/72	3	REVISED ENTIRE SHEET	EHS	1/27/73
	1	CHG SPECS TV-325-3	EHS	4/20/73	4			
	2				5			

ES 110 (REV 2/70)

PCB-ARCH-EXT0374251

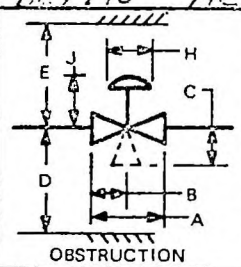
PHASE 2

Monsanto

CONTROL VALVE SPECIFICATION

LOCATION	DIVISION	PLANT	SPEC NO.	
WGK	002	WGK	IS-2417-30	
	AUTH NO.	DEPT OR AREA	SHEET	REV
	2417	246	4 OF ...	0

INSTRUMENT NUMBER		2417-	XCV-331-5			XCV 103-1				XCV 103-2										
SERVICE			ON-OFF			ON-OFF				ON-OFF										
LINE NUMBER			1-331-2-F2C2-1"			1-103-1-F2C2-2"				—										
PROCESS MATERIAL			AROCLOR			BI PHENYL				BI PHENYL										
OPERATING DATA	FLOW TEMPERATURE		150 °F			210 °F				210 °F										
	WORKING PRESSURE (PSIG INLET)		75			~ 2				~ 2										
	VALVE TO CLOSE AGAINST (PSIG)		75			~ 2				~ 2										
	SP GR AT FLOW TEMPERATURE		1.25			1.0				1.0										
	VAPOR PRESSURE AT TEMP, MM HG		~ 1 MM			0.02				0.02										
DESIGN COND GAS @ 60 F 14.7 PSIA LIQUID @ FLOW TEMP	FLUID		(LIQ)	GAS	STM	(LIQ)	GAS	STM		(LIQ)	GAS	STM		LIQ	GAS	STM				
	NORMAL FLOW — UNITS		1.0 GPM			—				—										
	MAXIMUM FLOW — UNITS (REQUIRED)		3.0 GPM			—				—										
	△ P		75 PSI			2				2										
	% TRAVEL & Cv AT DESIGN CONDITIONS		ON	OFF		ON	OFF			ON	OFF									
VALVE SPECIFICATION	VALVE BODY SIZE		1"			2"				2"										
	BODY RATING & END CONNECTION		150 #	SCR	FLG	150 #	SCR	FLG		150 #	SCR	FLG			SCR	FLG				
	BODY MATERIAL		DUCTILE IRON			DUCTILE IRON				DUCTILE IRON										
	TRIM SIZE OR MAXIMUM Cv		—	76.8		—	170			—	170									
	SEATS TEFLON SUSVE		SP	DP		SP	DP			SP	DP			SP		DP				
	TRIM MATERIAL		DUCTILE IRON			→				→										
	TYPE INNER VALVE		PLUG			→				→										
	PACKING		TEFLON			→				→										
	GUIDING		SKIRT	TOP	BTM	SKIRT	TOP	BTM		SKIRT	TOP	BTM		SKIRT	TOP	BTM				
	VALVE ACTUATOR		DIAPH	(PISTON)		DIAPH	(PISTON)			DIAPH	(PISTON)			DIAPH		PISTON				
	SIGNAL FROM INSTRUMENT (PSIG)		—																	
	AIR PRESSURE TO OPERATOR		60 PSIG			→				→										
VALVE POSITIONERS	MODEL NO.																			
	3 GAGES	BYPASS																		
I/P TRANSDUCER	MODEL NO.																			
	SIGNAL																			
PIPED & MOUNTED AIR SUPPLY REGULATOR			YES	(NO)		YES	NO			YES	(NO)			YES		NO				
ON AIR FAILURE VALVE			(CLOSES)	OPENS		(CLOSES)	OPENS			CLOSES	OPENS			CLOSES		OPENS				
FLOW TENDS TO			CLOSE	OPEN		CLOSE	OPEN			CLOSE	OPEN			CLOSE		OPEN				
AIR SUPPLY TO VALVE (PSIG)																				
REMARKS	ACCESSORIES OR SPECIAL FEATURES					LIMIT SWITCH				→										
	BELLOWS VALVAIR					ON-OPEN				→										
	B9201 LUBRICATOR		YES			YES				→										
	ASCO 8321K SOLENOID		YES			YES				→										
	BETTIS ACTUATOR		CB 415 SR60			CR 420 SK60				→										
DIMENSIONS	A. FACE TO FACE																			
	B. FACE TO CENTER																			
	C. FACE TO CENTER																			
	D. CLEARANCE																			
	E. CLEARANCE																			
	H. ACTUATOR DIAMETER																			
	J. ACTUATOR HEIGHT																			
PURCH.	MANUFACTURER		DURCO			DURCO				DURCO										
	CATALOG NUMBER		G11			G11				G11										
	PURCHASE ORDER NUMBER		0064			0064				0064										
	PRICE		#236			#325				#325										



REV										
	0	PREPARED	EHS	1/29/71	3					
	1				4					
	2				5					

ES 110 (REV 2/70)

PCB-ARCH-EXT0374252

Per 8*
4*
5*

Monsanto COMPANY — LOCATION W6K

***DIFFERENTIAL PRESSURE *INSTRUMENT SPECIFICATIONS**

DIVISION	PLANT	*SPEC NO.
002	W6K	IS-2417-3
AUTH NO.	DEPT OR AREA	SHEET / RE
2417	246	4 OF 5 / C

| | | |

PHASE 2

Per 8*
4*
5*

Monsanto COMPANY — LOCATION WGK

***DIFFERENTIAL PRESSURE *INSTRUMENT SPECIFICATIONS**

DIVISION	PLANT	* SPEC NO.
002	WGK	IS-2417-32
AUTH NO.	DEPT OR AREA	SHEET / RE
2417	246	5 OF 5 / 0

1	Instrument No.		2417-	FT-349-1		FT-541-1			
	Service			FLOW TO -348-		FLOW TO 539, 540			
	Equipment No. or Line No. & Size			1-349-1-A2C12-1½"		1-541-1-A11-1½"			
	Process Material			AROCLOR		AROCLOR			
3	CASE	Blind, Indicating, Record, Control, Transmit		BLIND		INDIC, TRANS			
		Mounting: Flush, Surface Yoke		YOKE		YOKE			
		CHART	Size and Type						
			Range						
			Drive / Speed						
		SCALE	Size & Type						
			Range						
	DIFFERENTIAL UNIT	Flow, Level, Pressure		FLOW				CONSTRUCTION NOTE:	
		Bellows, Diaphragm, Other		DIAPHRAGM				USE EXISTING	
7*		*Span & Units		0-400 "WC		0-100 "WC		INTEGRAL ORIFICE	
		Range Limits		0-200 TO 0-850"		0-20 TO 0-205"		FLOW TRANSMITTER	
		Body Rating @ 60°F		1500 PSI				ON FLOW TO 539 &	
6*		*Body Material		316 SS		→		540 FOR FT-349-1	
		Element Material		316 SS		→		(USE EXISTING 1800 FT 32)	
		Wetted Parts Material		316 SS		→			
		~~Extended Diaph. Length~~ / PROCESS FLOW TEMP		-242 °F		175 °F			
		Fluid Sp. Gr. @ FLOW TEMP / @ 60°F		1.45 / 1.55		1.34 / —			
	SIGNALS	PROCESS INPUT	Liquid, Gas, Cond. Vapor	LIQUID		→			
			Operating Pressure	90.0 PSIA		65 PSIG			
		INSTRUM. OUTPUT	Range & Units	3-15 PSIG		→			
			To	FRC 349-1		FRCA-541-1			
		Power Supply – Electrical, Pneumatic		PNEUMATIC		→			
		Electrical Area Classification		GEN PURP		→			
	CONTROLLER	Proportional Band %							
		Auto-Reset Mode		NO / SLOW / FAST		NO / SLOW / FAST		NO / SLOW / FAST	NO / SLOW / FAST
		Rate Mode		YES / NO		YES / NO		YES / NO	YES / NO
		Auto-Manual By Pass		YES / NO		YES / NO		YES / NO	YES / NO
		On Measurement Increase Instrument Output		INC. / DEC		INC. / DEC		INC. / DEC	INC. / DEC
		Pipe & Mt'd Air Supply Reg. FIXED PRESS		(YES) / ~~NO~~		(YES) / ~~NO~~		YES / NO	YES / NO
		Output Gage, 3½" Size		(YES) / ~~NO~~		(YES) / ~~NO~~		YES / NO	YES / NO
	REMARKS	Accessories or Special Features VISCOSITY		9.0 cp		CONSTRUCTION			
		PROCESS CONNECTION		½" N.P.T.		NOTE: CONNECT			
		PROCESS FLOW NORMAL / MAX		6 GPM / 10 GPM		WITH 316 SS			
		FURNISH WITH INTEGRAL ORIFICE ATTACH		0.350" BORE		TUBING			
		ORIFICE + MANIFOLD MTL		316 SS					
		CHEMALLOY GASKET FOR HI TEMP		YES					
				6-10 GPM @ 400" WC					
2	PURCH.	Manufacturer		FOXBORO		FOXBORO			
		Catalog No.		13HA-HS2		13A-MS2			
		P.O. No.		EXISTING		0062			
		Price		# 450		# 350			

REV.	DATE						
0	PREPARED	EHS	1/20/71	4			
1	CHG SPAN FT-541-1	EHS	4/27/71	5			
2				6			
3				7			

ES 117 (10/66)

PCB-ARCH-EXT0374254

Per 10*
4*
5*

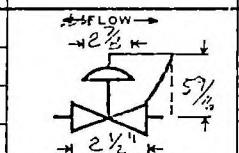
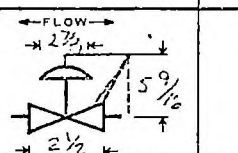
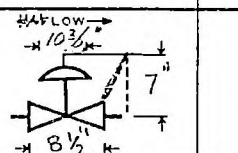
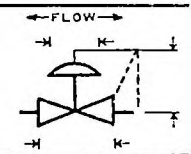
Monsanto COMPANY LOCATION WGK	* LEVEL DISPLACER *OR FLOAT SPECIFICATIONS	DIVISION 002 / AUTH NO. 2417	PLANT WGK. / DEPT OR AREA 246	* SPEC NO. IS-2417-34 / SHEET 1 OF 3	REV 3

1	Instrument No.	2417 -	LIA-305-3			2			LIA-312-3								
	Service		LEVEL						LEVEL								
	Equipment No.		305						312								
3	BODY: Blind, Controlling, Transmitting		TRANS,						TRANS								
	BODY: Type		INTERNAL D.S.						INTERNAL DIS								
	BODY: Material		CARBON STL.						CARBON STL								
7*	BODY: *Connection Size & Rating		4", 150 # RF						4", 150 # R.F.								
	BODY: Connection Arrangement		(TOP) BTM. SIDE			TOP BTM. SIDE			(TOP) BTM. SIDE			TOP BTM. SIDE					
	BODY: Rotatable Head Required		YES ~~NO~~			YES - NO -			YES ~~NO~~			YES NO					
	BODY: Vent or Drain – Size & Rating																
	BODY: Cooling Fin or Extension		YES						YES								
	BODY: Provide Pilot Not Crossed Out and Orient Connections as Shown		~~LH~~ RH			LH RH			~~LH~~ RH			LH RH					
8*	INTERNALS: *Sensor Type / *Material		DISPL / 304 SS						DISPL / 304 SS								
9*	INTERNALS: *Sensor Size or Length		146" X 3/4			3			125" X 3/4"			3					
	INTERNALS: Torque Tube Material		K MONEL						K MONEL								
	INTERNALS: Extension Length		8.5"						8.5"								
	SIGNALS: Transmitting Output – Range & Units		3-15 PSIG						3-15 PSIG								
	SIGNALS: Transmitting Output – To		PRESS GAGE						LI-312-3								
	SIGNALS: Controller Output – Range & Units		—						—								
	SIGNALS: Controller Output – To		—						—								
	SIGNALS: Power Supply – Electrical, Pneumatic		PNEU. 80 PSIG						PNEU. 80 PSIG								
	SIGNALS: Electrical Area Classification		WEATHER TITE						WEATHER TITE								
	CONTROLLER: Proportional Band %																
	CONTROLLER: Auto – Reset Mode		NO ~~SLOW~~ FAST			NO SLOW FAST			NO ~~SLOW~~ FAST			NO SLOW FAST					
	CONTROLLER: On Level Increase Instrument Output —		~~INC~~ DEC			INC DEC			~~INC~~ DEC			INC DEC					
	OPERATING CONDITIONS: Fluid	Upper / Lower	AROCLOR						AROCLOR								
	OPERATING CONDITIONS: Sp. Gr. @ Oper. Temp.	Upper / Lower	1.26	1.32					1.26	1.32							
	OPERATING CONDITIONS: Temperature °C	Normal / Max.	300	345					300	345							
	OPERATING CONDITIONS: Pressure PSIA	Normal / Max.	2.7	0					15	15							
	Piped & Mt'd Air Supply Reg.		YES ~~NO~~			YES NO			YES ~~NO~~			YES NO					
	REMARKS: Accessories or Special Features																
	AIR FIN EXTENSION		YES						YES								
	SUPPLY PRESSURE REGULATOR		YES						YES								
	INDICATING GAUGE 3½" DIAM, 0-100 SCALE		YES						YES								
	ON LEVEL INCREASE: TRANSMITTER OUTPUT		INCREASES						INCREASES								
2	PURCH.: Manufacturer		FISHER						FISHER								
6*	PURCH.: *Catalog No.		2500T-249BP						2500T-249BP								
	PURCH.: P.O. No.		0020						0020								
	PURCH.: Price		# 650 EST						# 650 EST								

REV.	DATE			
0		PREPARED	EHJ	10/26/70
1		CHG EXTENSION LENGTH	EHJ	11/30/70
2		CHG LICA-305-3 TO LIA-305-?	EHJ	12/2/70
3		CHG DISP & EXTEN LENGTH + 305 312	EHJ	1/4/71
4				
5				
6				
7				

PCB-ARCH-EXT0374255

Monsanto COMPANY — LOCATION WGK	*DIRECT OPERATED *PRESSURE REGULATING *VALVE SPECIFICATIONS	DIVISION 002 / AUTH NO. 2417	PLANT WGK / DEPT OR AREA 246	* SPEC NO. IS-2417-42 / SHEET 5 OF ___ / REV 1

1	Valve No.		2417-	PCV-303-1			PCV-303-2			PCV-308-2							
	Service			PG-303-1			PG-303-2			STEAM TO STEAM JET							
	Line Number & Size			FIELD CABINET			→			SM-1-F3817-1½"							
	Process Material			INST AIR			→			STEAM							
	Operating Data	Flow Temperature		AMBIENT			→			390°F							
		Working Pressure (PSIG Inlet)		60			→			200 PSIG							
		Valve to Close Against (PSIG.)		(61)			→			200 PSIG							
		Sp. Gr. @ Flow Temp.		1.0			→			2.1 FT³/#							
	Design Conditions Gas @ 60°F 14.7 PSIA Liquid @ Flow Temp.	Normal Flow		0			→			500 #/HR							
		Max. Flow		0			→			600 #/HR							
		Units: SCFM, SCFH, GPM or #/Hr.		SCFH			→			#/HR							
		Fluid		LIQ.	(GAS)	STM	LIQ.	(GAS)	STM	LIQ.	GAS	(STM)	LIQ.	GAS	STM		
		Inner Valve Travel, % @ Design Flow		—			—										
		ΔP	C_V (Calc.) @ Design Cond.	55	—		50	—									
		Calculation Sheet No.		—			—										
8*	Valve Specifications	*Valve Body Size		¼" NPT			→			1½"							
		Valve Port Size		—			—			FULL							
		Body Rating & Conn. Size		250PSI	¼" SCRD		→			250#	1½" R.F.						
7		Body Material		ALUMINUM			→			HI TENSILE IRON							
		Trim Material		BRASS			→			STAINLESS STL							
		Type Inner Valve		BUNA N			→			STAINLESS STL							
		Seats (Double or Single)		(SP)	DP		(SP)	DP		(SP)	DP		SP	DP			
		Valve actuator (Diaph or ~~Piston~~)		(DIAPH)	PISTON		(DIAPH)	PISTON		(DIAPH)	PISTON		DIAPH	PISTON			
		Matl of Const (Diaph or ~~Piston~~)		BUNA N			→			STAINLESS STL							
		Lubricator	Isolating Valve	—	—		—	—		—	PILOT						
		Packing		—			—			NONE							
		Guiding		SKIRT	(TOP)	BTM	SKIRT	(TOP)	BTM	SKIRT	TOP	(BTM)	SKIRT	TOP	BTM		
	Spring Setting		PSIG	5			10			150 #							
9*	*Spring Range		PSIG	5-20			5-20			70-150 #							
	On Increased Pressure Valve			OPENS	(CLOSES)		OPENS	CLOSES		OPENS	(CLOSES)		OPENS	CLOSES			
	Type of Regulator									PILOT OPER.							
	REMARKS	Accessories or Special Features								REDUCING							
		2" OUTPUT GAUGE		YES			YES			VALVE							
		PANEL MOUNTING		YES			YES										
	DIMENSIONS																	
2	PURCHASING	Manufacturer		FISHER			→			FISHER							
6*		*Catalog No.		67RPTC			→			92B							
		P.O. No.		0042			0042			0042							
		Price		# 15			# 15			# 183							

REV. DATE									
	0	PREPARED	EHS	12/31/70	4				
	1	ADDED PCV-308-2	EHS	12/31/70	5				
	2				6				
	3				7				

ES 109 (10/66)

PCB-ARCH-EXT0374256

PHASE 2

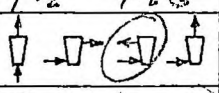
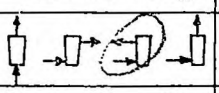
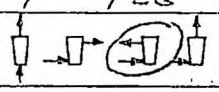
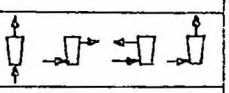
Per 7* 4*

Monsanto COMPANY

LOCATION W6K

*ROTAMETER SPECIFICATIONS

DIVISION	PLANT	*SPEC NO.	
002	W6K	IS-2417-44	
AUTH NO.	DEPT OR NO.	SHEET	REV
2417	246	6 OF 6	1

Instrument No.	2417 -			FI 539-1		FI 540-1		FI 331-1		
Service				FLOW		→		→		
				INDICATION		→		→		
Process Material				AROCLOR		→		→		
Line No.				1-541-1-A11-1½"		→		1-331-2-F2B16-1"		
Line Size, Schedule				1½", 40		→		1", 40		
SERVICE	Operating Conditions	Pressure	Temp.	20 PSIG	150°F	→	→	10 PSIG	150°F	
		S.P. Gr.	Visc. C.P.	1.34	7.0	→	→	1.25	7	
	Base Conditions	Pressure	Temp.	—	—	-	-	—	—	
		Sp. Gr.	Visc.	—	—	-	-	—	—	
	Inlet Pressure – Max.			90 PSIG		→		75 PSIG		
	Flow @ Base Conditions	Liquid		520 GPM		→		1.0 GPM		
		Gas		—		—		—		
		Steam		—		—		—		
	Fluid Character	Clean	Trans.	Steady	CLEAN, TRANS	→		TRANS		
		Slurry	Opaque	Pulse	STEADY	→		→		
3 CASE	Indicating, Recording, Transmitting									
	Chart Or Scale	Size & Type								
		Range								
		Drive & Speed								
SIGNAL	Instrument Output	Range & Units								
		To								
	Power Supply: Electrical, Pneumatic									
	Electrical Area Classification									
6* BODY	*Connection – Size & Rating				1½" FLG	→		1" FLG		
	Arrangement of Connections	Inlet								
		Outlet								
	Metering Tube Size (by Vendor)				8	→		6		
	Meter △P Normal (by Vendor)				11" WC, AT 7.6 GPM	→		9.7" WC, AT 9.9 GPM		
	Materials Of Construction	Body Fittings			316 SS	→		→		
		Metering & Ext. Tube			GLASS	→		→		
		Float			316 SS, BSVT-84	→		316SS, BSVT-64		
		Packing or Gaskets			TEFLON	→		→		
REMARKS	\Accessories or Special Features									
	LAMINATED SAFETY GLASS WINDOW				YES	→		→		
	GLASS TUBE ROTAMETER				YES	→		→		
	SAFE WORKING PRESSURE				130 PSIG	→		175 PSIG		
	SCALE LENGTH				10"	→		→		
	SCALE READING				PERCENTAGE	→		→		
	MAX FLOW (AROCLOR) GPM				13	→		4.1		
2 5* PURCH.	Manufacturer				FISCHER & PORTER	→		→		
	*Catalog Number				10A1736A	→		→		
	Purchase Order Number				0063	0063		0063		
	Price				$ 270	$ 270		$ 204		

REV.									
	0	PREPARED	EHS	1/27/71	4				
	1	CHG FLOAT SPEC!	EHS	3/1/71	5				
	2	CHG CATALOG NO	EHS	4/21/71	6				
	3				7				

ES 102 (10/66)

PCB-ARCH-EXT0374257

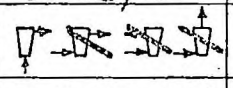
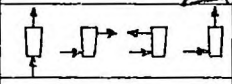
VARIANCE # 1

Per 7* 4*

Monsanto COMPANY — LOCATION WGK

*ROTAMETER SPECIFICATIONS

DIVISION	PLANT	*SPEC NO.
002	WGK	IS-2417-A1
AUTH NO.	DEPT OR NO.	SHEET / REV
2417	246	1 OF 1 / 1

Instrument No.				2417 -	FT-303-1	→		FT-303-3	→			
Service												
Process Material					MCS-1016		ORTHO-CHLORO		MCS-1016		ORTHO-CHLORO	
Line No.					1-302-4-A11-2"				1-302-1-A11-4"			
Line Size, Schedule					2", 40				4", 40			
SERVICE	Operating Conditions	Pressure PSIA	Temp. °C		14.7	65	14.7	80	1.0	65	7.0	80
		S.P. Gr.	Visc. C.P.		1.35	7.0	1.00	1.5	1.35	7.0	1.00	1.5
	Base Conditions	Pressure	Temp.		—	—	—	—	—	—	—	—
		Sp. Gr.	Visc.		—	—	—	—	—	—	—	—
	Inlet Pressure – Max. PSIA				14.7		14.7		1.0		7.0	
	Flow @ OPERATING ~~Base~~ Conditions	Liquid – MIN / MAX GPM			9.5 / 14		15.6 / 28		25 / 27		62.2 / 69.1	
		Gas			—		—		—		—	
		Steam			—		—		—		—	
	Fluid Character	Clean	Trans.	Steady	LIQUID-STEADY	→			→		→	
		Slurry	Opaque	Pulse	CLEAN	→			→		→	
3 CASE	Indicating, Recording, Transmitting				INDICATE +				INDICATE +			
	Chart Or Scale	Size & Type			TRANSMIT				TRANSMIT			
		Range			5" SCALE				5" SCALE			
		Drive & Speed			8-100 °/o				8-100 °/o			
SIGNAL	Instrument Output	Range & Units			3-15 PSIG				3-15 PSIG			
		To			FIC-303-1				FI-303-3			
	Power Supply: ~~Electrical~~, Pneumatic				20 PSIG				20 PSIG			
	Electrical Area Classification				—				—			
6* BODY	*Connection – Size & Rating				1½" FLG, 150#		⚠2		2" FLG, 150#			
	Arrangement of Connections	Inlet										
		Outlet										
	Metering Tube Size (by Vendor)				MB-35-5-SV				M11-24-5-SV			
	Meter △P Normal (by Vendor) AT ANY FLOW				36 " WC		38 " WC		35.6" WC		37.5" WC	
	Materials Of Construction	Body Fittings			316 SS				CARBON STL			
		Metering & Ext. Tube			316 SS				CARBON STL			
		Float			316 SS				316 SS			
		Packing or Gaskets			TEFLON				TEFLON			
REMARKS	Accessories or Special Features				NEW TUBE & FLOAT TO BE INSTALLED IN EXISTING ⚠							
	ROTAMETER MAX CAPACITY @ OPERATING CONDITIONS				METERS by FIELD							
					29.3 GPM		35.0 GPM		83.3 GPM		99.2 GPM	
	H2O EQUIV				35.0 GPM		35.0 GPM		99.2 GPM		99.2 GPM	
	ACCURACY				± 2% F.S.				± 2% FS			
	AIR FILTER REG W/GAGE				YES				YES			
	NOTE 1. BOTH FLOWMETERS ARE TO BE SUITABLE FOR BOTH MCS-1016 & ORTHO-CHLORO SERVICE											
	NOTE 2. FIELD TO STEAM TRACE METERS & EXTENSION LINE ⚠											
2 5* PURCH.	Manufacturer				FISCHER & PORTER				FISCHER & PORTER			
	*Catalog Number				10A1152A-OK-1401KA41				+1401KA41			
	Purchase Order Number				0012 ch.2				0012 ch2			
	Price				$600 EST				$509			

REV.								
	⓪	PREPARED	EHS	4/2/71	④			
	①	Added Notes	EAH	6/3/71	⑤			
	②	REV as built	CJH	7/30/71	⑥			
	③				⑦			

PCB-ARCH-EXT0374258

Per 10*
3*
4*

Monsanto COMPANY LOCATION W6K	*FLOW MEASURING *ELEMENT SPECIFICATIONS	DIVISION 002	PLANT W6K	*SPEC NO. IS-2417-45-
		AUTH NO. 2417	DEPT OR AREA 246	SHEET 2 OF 4 / REV 2

1	Instrument No.		2417 - FE-307-2	FE-307-5	FO 305-4	
	Service			AROCLOR FLOW FROM FURNACE	RESTRICTING ORIFICE (1)	
	Process Material		FUEL GAS	AROCLOR	AROCLOR	
	Line No.		F27-2"	1-307-1-F2316-8"	1-307-1-F2816-8"	
	Line Size, Schedule		2", 40	8", 40	8", 40	
SERVICE	Upstream Operating Conditions	Flowing Press. P_f	28 PSIG	15 PSIG	15 PSIG	
		Flowing Temp T_f	60°F	300°C	300°C	
		Sp. Gr. @ T_f	.133 #/FT³	1.35	1.35	
		Viscosity CP @ T_f	0.01	1.6	1.6	
		Sp. Gr. @ 60°F	.133 #/FT³	----------	----------	
		Supercompr. Factor @ T_f				
		Steam Quality, %				
		Steam Superheat, F				
	Flow at Base Conditions 60F & 14.73 PSIA Barometric Pressure at Location ____ In. Hg.	Liquid, Gas or Steam	GAS	LIQUID	LIQUID	
		Minimum Flow	0	0	0	
		Normal Flow	8960	600	600	
		Maximum Flow	13500 (2)	600	600	
		Units of Flow	SCFH	GPM	GPM	
		Meter Range	0-44.61" WC	0-50" W.C.	NONE	
8*	FLANGES	*Size & Type – W.N., S.O., Scrd., Van Stone(1)	2" W.N.	8" S.O.	8" W.N.	
9*		*Rating & Facing	300# R.F	300# R.F	150# ASA	
7→		Material – Flange & R.T.J. Ring or Gasket(1)	CARBON STEEL	CARBON STEEL	CARBON STL	
		Taps – Type, Size & Orientation (R2.3 Std)	FLG ½" NPT SIDE	FLG ½" NPT SIDE	NONE	
	ORIFICE PLATE	Type of Plate (R2.3 Std)	PADDLE TYPE	PADDLE TYPE	PADDLE TYPE	
		Plate Material & Thickness	304 SS, ⅛"	304 SS, ⅛"	304 SS, ⅛"	
		Pipe ID (D), In.	2.067"	7.981"	7.981"	
		Orifice ID (d), In.	1.06381	5.04671	4.50027	
		d/D Ratio (β)	0.51466	0.63234	.56387	
6→		Meter Range – Inches Water Dry	40"	50"	ΔP = 2.0 PSI	
		Type of Meter	FOX D/P	BARTON BELLOW	NONE	
		Drain or Vent Hole	NONE	NONE	NONE	
		Chart or Scale Range	0-10 SQ RT	0-10 SQ RT	NONE	
		Chart Factor (2)	X 1350	X 60	NONE	
		Calculation Sheet No.				
	REMARKS	CAT NO. METER RUN OR ORIFICE FLANGE	M-30RJ	30RS		
		CAT NO. ORIFICE PLATE	520	520	520	
		ACCESSORIES	MFG. STD	MFG STD		
		GASKETS	ASBESTOS	ASBESTOS	ASBESTOS	
		All orifice handles to be stamped on upstream			(ORIFICE	
		side with "Inlet", bore dia, nom pipe ID, flange			PLATE ONLY)	
		rating, instrument number and plate material				
2	PURCH.	Manufacturer	DANIEL IND	→	→	
5*		*Catalog Number	AS ABOVE	→	→	
		Purchase Order Number	0041	0041	DELETE	
		Price	#125			

REV								
	(0)	PREPARED	EHS	10/19/70	(4)			
	(1)	ADD FO 305-4	EHS	11/11/70	(5)			
	(2)	CHG METER RANGE	EHS	2/8/71	(6)			
	(3)				(7)			

PCB-ARCH-EXT0374259

Por 6*

3*

Monsanto COMPANY — LOCATION WGK	PROCESS ACTUATED * SWITCHES SPECIFICATIONS	DIVISION 002	PLANT WGK	*SPEC NO. IS-2417-54
		AUTH NO. 2417	DEPT OR AREA 246	SHEET 1 OF 4 — REV 1

1

Instrument No.	2417 --	LA-305-3.1	LA-305-3.2	LA-316-1.1	LA-316-1.2	
Service		HIGH LEVEL ALARM	LOW LEVEL ALARM	HIGH LEVEL ALARM	LOW LEVEL ALARM	
Equipment No. or Line No. & Size						
Process Material		INST AIR	INST AIR			
GENERAL — Press. Temp. – Level Flow Switch – Relay		PRESSURE				
GENERAL — Temperature	Normal / Max.	AMBIENT	AMBIENT			
GENERAL — Pressure PSIG	Normal / Max.	9 / 15	9 / 15			
GENERAL — Fluid (Level Only)	Upper / Lower					
GENERAL — Sp. Gr. @ Oper. Temp.	Upper / Lower					
5* ELEMENT — *Range & Units PSIG		1-20	1-20			
ELEMENT — Pressure — Type Element & Material		DIAPHRAGM	DIAPHRAGM			
ELEMENT — Pressure — Conn. Size / Orientation		¼" NPT / BTM	¼" NPT / BTM			
ELEMENT — Temp. — Fill – Gas, Mercury, etc.						
ELEMENT — Temp. — Capillary – Length / Material						
ELEMENT — Temp. — Armor Material						
ELEMENT — Temp. — Bulb-Diameter / Length						
ELEMENT — Temp. — Bulb Type – Plain, Union						
ELEMENT — Temp. — Bulb Conn. – Size & Rating						
ELEMENT — Temp. — Well Material						
ELEMENT — Temp. — Well Conn. Size & Rating						
ELEMENT — Temp. — Lgth below Thread or Flange "U" (SEE NOTE)						
ELEMENT — Temp. — Lagging Extension "T" (SEE NOTE)						
ELEMENT — Level — Type & Material						
ELEMENT — Level — Connection Size & Rating						
ELEMENT — Level — Connection Arrangement						
ELEMENT — Level — Cooling Fin or Extension						
ELEMENT — Level — Float Material & Size						
ELEMENT — Flow — Connection or Body Size						
ELEMENT — Flow — Type Element & Matl.						
ELEMENT — Flow — Disc or Paddle Size						
SWITCH — Type – Mercury, Micro, etc.		MERCURY	MERCURY			
SWITCH — Contact Arrangement / Rating – Volts & Amps		SPDT, 4A/120V	SPDT, 4A/120V			
SWITCH — Set Point		14 PSIG	4 PSIG			
SWITCH — On Measurement Increase Switch		~~OPENS~~ / ~~CLOSES~~	~~OPENS~~ / ~~CLOSES~~	~~OPENS~~ / ~~CLOSES~~	~~OPENS~~ / ~~CLOSES~~	
SWITCH — Electrical Area Classification		G.P. NEMA 1	G.P. NEMA 1			
SWITCH — Conduit Conn. Size & Hub or K.O.		½"	½"			
SWITCH — Differential Range – Fixed, Adjustable		FIXED	FIXED			
REMARKS — Accessories or Special Features						
REMARKS — ADJUSTABLE SET POINT		YES	YES			
REMARKS — SWITCH FIELD-WIRED TO OPEN ON ALARM		YES	YES			
2 4* PURCH. — Manufacturer		MERCOID				
PURCH. — *Catalog No.		AP-153-R36				
PURCH. — P.O. No.		# 0015	# 0015	0015	0015	
PURCH. — Price		18	18			

REV.							
0	PREPARED	EHS	10/26/70	4			
1	CHG. INST No.	EHS	11/17/70	5			
2				6			
3				7			

5 113 (10/66)

NOTE: For explanation of dimension "U" ref. to ISA RP 20.1 Pg. 16

PCB-ARCH-EXT0374260

Per 6"

3*

Monsanto COMPANY — LOCATION W6K	PROCESS ACTUATED * SWITCHES SPECIFICATIONS	DIVISION 002	PLANT W6K	*SPEC NO. IS-2417-54
		AUTH NO. 2417	DEPT OR AREA 246	SHEET 2 OF 4 — REV 1

1

Instrument No.	2417 -	LA-312-3.1	LA-312-3.2	PA-312-6	PA-301-5
Service		HIGH LEVEL ALARM	LOW LEVEL ALARM	H PRESSURE ALARM	HI-PRESSURE ALARM
Equipment No. or Line No. & Size				312	
Process Material		INST AIR	→	NITROGEN	INST AIR
GENERAL — Press. Temp. – Level Flow Switch – Relay		PRESSURE	→	→	PRESSURE
GENERAL — Temperature — Normal / Max.		AMBIENT	→	→	AMBIENT
GENERAL — Pressure PSIG — Normal / Max.		9 PSIG / 15 PSIG	→	0" WC / 5" WC	3 PSIG / 15 PSIG
GENERAL — Fluid (Level Only) — Upper / Lower					
GENERAL — Sp. Gr. @ Oper. Temp. — Upper / Lower					
5* ELEMENT — *Range & Units		1-20 PSIG	→	1-30" W.C.	1-20 PSIG
ELEMENT — Pressure — Type Element & Material		DIAPHRAGM	→	DIAPHRAGM	DIAPHRAGM
ELEMENT — Pressure — Conn. Size / Orientation		¼" NPT / BTM	→	½" NPT / BTM	¼" NPT / BTM
ELEMENT — Temp. — Fill – Gas, Mercury, etc.					
ELEMENT — Temp. — Capillary – Length / Material					
ELEMENT — Temp. — Armor Material					
ELEMENT — Temp. — Bulb-Diameter / Length					
ELEMENT — Temp. — Bulb Type – Plain, Union					
ELEMENT — Temp. — Bulb Conn. – Size & Rating					
ELEMENT — Temp. — Well Material					
ELEMENT — Temp. — Well Conn. Size & Rating					
ELEMENT — Temp. — Lgth below Thread or Flange "U" (SEE NOTE)					
ELEMENT — Temp. — Lagging Extension "T" (SEE NOTE)					
ELEMENT — Level — Type & Material					
ELEMENT — Level — Connection Size & Rating					
ELEMENT — Level — Connection Arrangement					
ELEMENT — Level — Cooling Fin or Extension					
ELEMENT — Level — Float Material & Size					
ELEMENT — Flow — Connection or Body Size					
ELEMENT — Flow — Type Element & Matl.					
ELEMENT — Flow — Disc or Paddle Size					
SWITCH — Type – Mercury, Micro, etc.		MERCURY	→	→	MERCURY
SWITCH — Contact Arrangement / Rating – Volts & Amps		SPDT, 4A/120V	→	→	SPDT, 4A/120V
SWITCH — Set Point		14 PSIG	4 PSIG	5" W.C.	14 PSIG
SWITCH — On Measurement Increase Switch		~~OPENS~~ / ~~CLOSES~~	~~OPENS~~ / ~~CLOSES~~	OPENS / ~~CLOSES~~	OPENS / ~~CLOSES~~
SWITCH — Electrical Area Classification		G.P., NEMA 1	→	WEATHER RESISTANT	G.P. NEMA 1
SWITCH — Conduit Conn. Size & Hub or K.O.		½"	→	→	½"
SWITCH — Differential Range – Fixed, Adjustable		FIXED	→	→	FIXED
REMARKS — Accessories or Special Features				RANGE P1	
REMARKS — ADJUSTABLE SET POINT		YES	→	YES	YES
REMARKS — SWITCH FIELD-WIRED TO OPEN ON ALARM		YES	→	YES	YES
2 4* PURCH. — Manufacturer		MERCOID	→	→	MERCOID
PURCH. — *Catalog No.		AP-153-R36	→	PGW-153	AP-153-R36
PURCH. — P.O. No.		0015	0015	SPARE	0061
PURCH. — Price		#18	→	$60	$18

REV.								
0	PREPARED	EHS	10/20/70	4				
1	ADDED PA-312-6	EHS	11/25/70	5				
2	ADDED PA-301-5	EHS	2/25/71	6				
3				7				

SS 113 (10/66)

PCB-ARCH-EXT0374261

ORDER LA-328-1.2

Per 6*

3*

Monsanto COMPANY — LOCATION WGK

PROCESS ACTUATED * SWITCHES SPECIFICATIONS

DIVISION	PLANT	*SPEC NO.
002	WGK	IS-2417-5
AUTH NO.	DEPT OR AREA	SHEET / R
2417 (1)	246	3 OF 4 / C

1

Instrument No.	2417-	LA-329-1	LA-328-1.1	LA-329-1.2
Service		HI LEVEL ALARM	HI LEVEL ALARM	LO LEVEL ALARM (1)
Equipment No. or Line No. & Size		329	328	328
Process Material		INST AIR	INST AIR	INST AIR
GENERAL — Press. Temp. – Level Flow Switch – Relay		PRESS	PRESS	PRESS
GENERAL — Temperature	Normal / Max.	AMBIENT	AMBIENT	AMBIENT
GENERAL — Pressure PSIG	Normal / Max.	3 / 15	3 / 15	3 / 15
GENERAL — Fluid (Level Only)	Upper / Lower			
GENERAL — Sp. Gr. @ Oper. Temp.	Upper / Lower			

5*

ELEMENT — *Range & Units	PSIG	1-20	1-20	1-20
Pressure — Type-Element & Material		DIAPHRAGM	DIAPHRAGM	DIAPHRAGM
Pressure — Conn. Size / Orientation		¼" NPT / BTM	¼" NPT / BTM	¼" NPT / BTM
Temp. — Fill – Gas, Mercury, etc.				
Temp. — Capillary – Length / Material				
Temp. — Armor Material				
Temp. — Bulb-Diameter / Length				
Temp. — Bulb Type – Plain, Union				
Temp. — Bulb Conn. – Size & Rating				
Temp. — Well Material				
Temp. — Well Conn. Size & Rating				
Temp. — Lgth below Thread or Flange "U" (SEE NOTE)				
Temp. — Lagging Extension "T" (SEE NOTE)				
Level — Type & Material				
Level — Connection Size & Rating				
Level — Connection Arrangement				
Level — Cooling Fin or Extension				
Level — Float Material & Size				
Flow — Connection or Body Size				
Flow — Type Element & Matl.				
Flow — Disc or Paddle Size				

SWITCH — Type – Mercury, Micro, etc.		MERCURY	MERCURY	→
SWITCH — Contact Arrangement / Rating – Volts & Amps		SPDT, 4A/120V	→	→
SWITCH — Set Point		14.5 PSIG	14.5 PSIG	4 PSIG
SWITCH — On Measurement Increase Switch		(OPENS) / CLOSES	(OPENS) / CLOSES	OPENS / (CLOSES)	OPENS / CLOSES
SWITCH — Electrical Area Classification		G.P. NEMA 1	G.P. NEMA 1	→
SWITCH — Conduit Conn. Size & Hub or K.O.		½"	½"	→
SWITCH — Differential Range – Fixed, Adjustable		FIXED	FIXED	→
REMARKS — Accessories or Special Features				
REMARKS — ADJUSTABLE SET POINT		YES	YES	→
REMARKS — OPEN ON ALARM		YES	YES	→
REMARKS — MOUNT IN FIELD CABINET		YES	YES	→

2

4*

PURCH. — Manufacturer	MERCOID	MERCOID	→
PURCH. — *Catalog No.	AP-153-R36	AP-153-R36	→
PURCH. — P.O. No.	0036	0036	0061
PURCH. — Price	# 18	# 18	# 18

REV.					
0	PREPARED	EHS	12/23/70	4	
1	ADD LA-328-1.2 CHG LA-328-1 TO LA-328-1.1	EHS	1/26/71	5	
2				6	
3				7	

ES 113 (10/66)

PCB-ARCH-EXT0374262

PHASE 2

Monsanto COMPANY LOCATION WGK	PROCESS ACTUATED * SWITCHES SPECIFICATIONS	DIVISION 002	PLANT WGK	*SPEC NO. IS-2417-54
		AUTH NO. 2417	DEPT OR AREA 296	SHEET 1 OF 1 / REV 0

Instrument No.			2417 - FA-349-1									
Service			LOW FLOW ALARM									
Equipment No. or Line No. & Size			1-349-1-A11-1½									
Process Material			INST AIR									
GENERAL: Press. Temp. – Level Flow Switch – Relay			PRESSURE									
GENERAL: Temperature	Normal	Max.	AMBIENT									
GENERAL: Pressure	Normal.	Max.	9	15								
GENERAL: Fluid (Level Only)	Upper	Lower	X	X								
GENERAL: Sp. Gr. @ Oper. Temp.	Upper	Lower	X	X								
ELEMENT: *Range & Units			1-20 PSIG									
ELEMENT: Pressure — Type Element & Material			DIAPHRAGM									
ELEMENT: Pressure — Conn. Size	Orientation		¼" NPT	BTM								
ELEMENT: Temp. — Fill – Gas, Mercury, etc.			X									
ELEMENT: Temp. — Capillary – Length	Material											
ELEMENT: Temp. — Armor Material												
ELEMENT: Temp. — Bulb-Diameter	Length											
ELEMENT: Temp. — Bulb Type – Plain, Union												
ELEMENT: Temp. — Bulb Conn. – Size & Rating												
ELEMENT: Temp. — Well Material												
ELEMENT: Temp. — Well Conn. Size & Rating												
ELEMENT: Temp. — Lgth below Thread or Flange "U" (SEE NOTE)												
ELEMENT: Temp. — Lagging Extension "T" (SEE NOTE)												
ELEMENT: Level — Type & Material												
ELEMENT: Level — Connection Size & Rating												
ELEMENT: Level — Connection Arrangement												
ELEMENT: Level — Cooling Fin or Extension												
ELEMENT: Level — Float Material & Size												
ELEMENT: Flow — Connection or Body Size												
ELEMENT: Flow — Type Element & Matl.												
ELEMENT: Flow — Disc or Paddle Size												
SWITCH: Type – Mercury, Micro, etc.			MERCURY									
SWITCH: Contact Arrangement	Rating – Volts & Amps		SPDT, 4A / 120V									
SWITCH: Set Point			4 PSIG									
SWITCH: On Measurement Increase Switch			~~OPENS~~ CLOSES		OPENS	CLOSES	OPENS	CLOSES	OPENS	CLOSES		
SWITCH: Electrical Area Classification			G.P., NEMA 1									
SWITCH: Conduit Conn. Size & Hub or K.O.			½"									
SWITCH: Differential Range – Fixed, Adjustable			FIXED									
REMARKS: Accessories or Special Features												
REMARKS: ADJUSTABLE SET POINT			YES									
REMARKS: SWITCH FIELD WIRED TO OPEN ON ALARM			YES									
PURCH. Manufacturer			MERCOID									
PURCH. *Catalog No.			AP-153-R36									
PURCH. P.O. No.			00061									
PURCH. Price			#13									

REV.								
0	PREPARED	EHS	1/26/71	4				
1				5				
2				6				
3				7				

ES 113 (10/66)

NOTE: For explanation of dimensions U, T ref. to ISA RP-20.1 Pg. 16.

PCB-ARCH-EXT0374263

Per 7*

Monsanto COMPANY — LOCATION W6K.

RECEIVER – CONTROLLER SPECIFICATION
~~ELECTRONIC~~ – PNEUMATIC

DIVISION	PLANT	*SPEC NO.	REV
002	W6K	IS-2417-12	1
AUTH NO.	DEPT OR AREA	SHEET	
2417	246	1 OF 4	

1	Instrument No. 2417 –			PIC-301-5		PDI-301-4		FIC-303-1		LI-312-3
	Service									
	Location – Panel or Equipment No.			PANEL		→		→		→
3	RECEIVER	Record Indicate Control		INDICATR, CONTROL		INDICATR		INDIC, CONTROL		INDICATE
6*		*Number of Points		1		1		1		1
		Chart	Size & Type							
			Range							
			Drive / Speed							
		Scale	Size & Type	10"x1¾" TAPE		4"x1¾" FXD		4"x1¾" FXD		4"x1¾" FXD
			Range	0-100 LIN		0-10 LIN		0-10 LIN		0-10 LIN
		Ratio, Cascade, Computer – Set		MECH SET PT		NONE		CASCADE		NONE
		Auto – Manual By Pass		YES	~~NO~~	YES	NO	YES	~~NO~~	YES / NO
	CONTROLLER	Location		INTEG.	~~REMOTE~~	INTEG.	REMOTE	INTEG.	~~REMOTE~~	INTEG. / REMOTE
		Proportional Band %		2-500 %		NONE		2-500 %		NONE
		Auto-Reset Mode		~~NO~~	SLOW / ~~FAST~~	NO	SLOW / FAST	~~NO~~	SLOW / ~~FAST~~	NO / SLOW / FAST
		Rate Mode		~~YES~~	NO	YES	NO	~~YES~~	NO	YES / NO
		On Measurement Increase Instrument Output	–	~~INC.~~	DEC	INC.	DEC	~~INC.~~	DEC	INC. / DEC
	SIGNALS	Measurement Input	Range & Units	3-15 PSIG		3-15 PSIG		3-15 PSIG		3-15 PSIG
			From	PT 301-5		PDT 301-4		FT 303-1		LT 312-3
		Controller Output	Range & Units	3-15 PSIG		NONE		3-15 PSIG		NONE
			To	PV 301-5		NONE		ITEM 303		NONE
		Set Point	Range & Units			NONE		3-15 PSIG		NONE
			From			NONE		FCV –		NONE
		Power Supply – Electric, Pneumatic		PNEUMATIC		PNEUMATIC		→		PNEUMATIC
		Electrical Area Classification		GEN. PURPOSE		GEN. PURPOSE		→		→
	REMARKS	Accessories or Special Features								
		REMOTE SET POINT		NO		NO		YES		NO
		COLOR		TAN		TAN		TAN		TAN
		LOCAL SET POINT		YES		NO		NO		NO
		PROCESS VARIABLE INDIC		YES		YES		YES		YES
		SET POINT INDICATION		NO		—		YES		—
								1		
2	PURCH.	Manufacturer		FISCHER & PORTER		→		→		→
4*		*Receiver Catalog No.	51–	1351ABFC		1352FPAC		1351AEFC		1352FPAC
5*		*Controller Catalog No.								
		P.O. No.		0012		0012		0012		0012
		Price		$460 EST		$170 EST		$441 EST		$170 EST

REV.	DATE				REV.	DATE		
0		PREPARED	EHS	10/16/72	4			
1		AS NOTED	EHS	4/18/73	5			
2					6			
3					7			

PCB-ARCH-EXT0374264

Per 7*

Monsanto COMPANY — LOCATION W&K

RECEIVER – CONTROLLER SPECIFICATION
ELECTRONIC – PNEUMATIC

DIVISION	PLANT	*SPEC NO.	REV
002	W&K	IS-2417-12	0
AUTH NO.	DEPT OR AREA	SHEET	
2417	246	3 OF 4	

1	Instrument No. 2417-			FIC-349-1		LIC-305-3		FIC 541		
	Service			FLOW CONTROL		LEVEL, INDIC CONTROL		FLOW to #2 & #3 Absorbers		
	Location – Panel or Equipment No.			PANEL		PANEL				
3	RECEIVER	Record Indicate Control		INDICATE + CONTROL		INDICATE + CONTROL		Ind. & Control		
6*		*Number of Points		1		1				
		Chart	Size & Type							
			Range							
			Drive / Speed							
		Scale	Size & Type	10" X 1 3/4" TAPE		10" X 1 3/4" TAPE		10" X 1 3/4" TAPE		
			Range	0-10 SQ RT		0-100 LIN		0-100 Sq. Rt.		
		Ratio, Cascade, Computer – Set		MECH SET PT		MECH SET PT		Mech Set pt		
		Auto – Manual By Pass		(YES) NO		(YES) NO		(YES) NO	YES	NO
	CONTROLLER	Location		(INTEG.) REMOTE		(INTEG.) REMOTE		(INTEG.) REMOTE	INTEG.	REMOTE
		Proportional Band %		2-500 %		2-500%				
		Auto-Reset Mode		(NO) SLOW FAST		(NO) SLOW FAST		NO SLOW (FAST)	NO SLOW	FAST
		Rate Mode		YES (NO)		YES (NO)		YES (NO)	YES	NO
		On Measurement Increase – Instrument Output		INC. (DEC)		INC. (DEC)		INC. (DEC)	INC.	DEC
	SIGNALS	Measurement Input	Range & Units	3-15 PSIG SQ RT		3-15 PSIG LIN		3-15 Sq Rt.		
			From	FT-349-1		LIA-305-3		FT 541		
		Controller Output	Range & Units	3-15 PSIG		3-15 PSIG		3-15		
			To	FV-349-1		LV-305-3		FV 541		
		Set Point	Range & Units							
			From							
		Power Supply – Electric, Pneumatic		PNEUMATIC		PNEUMATIC				
		Electrical Area Classification		GEN PURP.		GEN PURP				
	REMARKS	Accessories or Special Features								
				FIELD NOTE:						
				THE CONTROL						
				LER IN THIS						
				UNIT IS TO						
				BE SWAPPED						
				WITH THE				existing		
				CONTROLLER				1900		
				IN				FIC 329		
				FIC-303-1				FV 32 IN		
		COLOR		TAN		TAN		PLACE.		
		LOCAL SET POINT		YES		YES				
2	PURCH.	Manufacturer		FISCHER-PORTER		→		F&P		
4*		*Receiver Catalog No. 51-		1351 ABBC		1351 ABBC		15-1351 ABBC		
5*		*Controller Catalog No.								
		P.O. No.		0063		0063		existing		
		Price		# 460		# 460				

REV. DATE									
	0	PREPARED	EHJ	1/20/71	4				
	1				5				
	2				6				
	3				7				

ES 112 (10/66)

PCB-ARCH-EXT0374265

Monsanto

CONTROL VALVE SPECIFICATION

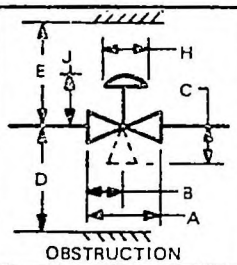
LOCATION	DIVISION	PLANT	SPEC NO.	REV
WGK	002	WGK	IS- 2417 - 30	1
	AUTH NO. 2417	DEPT OR AREA 246	SHEET 1 OF	

INSTRUMENT NUMBER	2417 -	PV 301-S	→	FV 303-1	→
SERVICE		PRESSURE	→	PRODUCT FLOW	PRODUCT FLOW
LINE NUMBER		CONTROL	→	1-302-4-A11-21"	→
PROCESS MATERIAL		AIR	STEAM	MCS 1016	ORTHO-CHLORO
OPERATING DATA — FLOW TEMPERATURE		60 °F	324 °F	150° F	175° F
OPERATING DATA — WORKING PRESSURE (PSIG INLET)		15 PSIA	80 PSIG		
OPERATING DATA — VALVE TO CLOSE AGAINST (PSIG)		15 PSIA	80 PSIG		
OPERATING DATA — SP GR AT FLOW TEMPERATURE		1.0 AIR	0.123 #/FT³	1.35	1.0
OPERATING DATA — VAPOR PRESSURE AT TEMP, MM HG		—	—		
DESIGN COND GAS @ 60 F 14.7 PSIA LIQUID @ FLOW TEMP — FLUID		LIQ (GAS) STM	LIQ GAS STM	(LIQ) GAS STM	(LIQ) GAS STM
NORMAL FLOW — UNITS		460 SCFH	275 #/HR	9.5 GPM	15.6 GPM
MAXIMUM FLOW — UNITS (REQUIRED)		500 SCFH	275 #/HR	14.0 GPM	23.0 GPM
△ P PSIG		14.7	87	3	3
% TRAVEL & Cv AT DESIGN CONDITIONS		45 Cv = 31.2	65 Cv = 2.9	71% 9	90% 16
VALVE SPECIFICATION — VALVE BODY SIZE		1"	→	1½"	→
BODY RATING & END CONNECTION		150 # SCR (FLG)	SCR (FLG)	150 # SCR (FLG)	150 # SCR (FLG)
BODY MATERIAL		CARBON STL	→	316 S/S	→
TRIM SIZE OR MAXIMUM Cv Cs or Cs		¾" 209	¾" (5.94") 10.5	1¼" 22.6	→
SEATS		(SP) DP	SP DP	(SP) DP	(SP) DP
TRIM MATERIAL		316 SS	→	MICRO FORM	→
TYPE INNER VALVE		MICRO-FLUTE	→		
PACKING		TEFLON V RING	→		
GUIDING		SKIRT (TOP) BTM	SKIRT TOP BTM	SKIRT (TOP) BTM	SKIRT (TOP) BTM
VALVE ACTUATOR		(DIAPH) PISTON	DIAPH PISTON	DIAPH PISTON	DIAPH PISTON
SIGNAL FROM INSTRUMENT (PSIG)		3-15 PSIG	→	3-15 PSIG	→
AIR PRESSURE TO OPERATOR		3-15 PSIG	→	3-15 PSIG	→
VALVE POSITIONERS — MODEL NO.		NO			
3 GAGES / BYPASS		— —			
I/P TRANSDUCER — MODEL NO.		NO			
SIGNAL		—			
PIPED & MOUNTED AIR SUPPLY REGULATOR		YES (NO)	YES (NO)	YES (NO)	YES (NO)
ON AIR FAILURE VALVE		(CLOSES) OPENS	(CLOSES) OPENS	(CLOSES) OPENS	(CLOSES) OPENS
FLOW TENDS TO		CLOSE (OPEN)	CLOSE OPEN	CLOSE OPEN	CLOSE OPEN
AIR SUPPLY TO VALVE (PSIG)		3-15 PSIG	→		

REMARKS

ACCESSORIES OR SPECIAL FEATURES		THIS	
COMMENTS	VALVE FLUID WILL BE	SURPLUS	VALVE
	AIR OR STEAM DEPENDING	S&R. NO. 44	12320
	ON THE OPERATING	Replaces	FV303-1
	SITUATION	Refurbished	GN
		2417-4-00 2.0 ch.1	

DIMENSIONS



A. FACE TO FACE	7¼"		8 3/4"
B. FACE TO CENTER	3¼"		4 3/8"
C. FACE TO CENTER	3 13/16"		4 3/8"
D. CLEARANCE	24"		24"
E. CLEARANCE	24"		30"
H. ACTUATOR DIAMETER	11 3/8"		13 1/8"
J. ACTUATOR HEIGHT	14 13/16"		23 3/8

2 Req'd

PURCH.

MANUFACTURER	FISHER		FISHER
CATALOG NUMBER	[illegible]		6672
PURCHASE ORDER NUMBER	0020 ch 1		SURPLUS
PRICE			

REV

0	PREPARED	EHS	11/27/71	3			
1	Revised Specs FV303-1	GAH	6/1/71	4			
2				5			

ES 110 (REV 2/70)

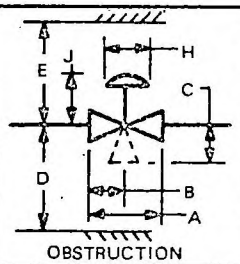
PCB-ARCH-EXT0374266

Monsanto

CONTROL VALVE SPECIFICATION

LOCATION	DIVISION	PLANT	SPEC NO.	
W6K	002	W6K	IS-2417-PC	
	AUTH NO.	DEPT OR AREA	SHEET	RE
	2417	246	2 OF	3

INSTRUMENT NUMBER		2417-	TV 325-3			LV 305-3			→								
SERVICE			TEMP			LEVEL											
LINE NUMBER			CWI-EID2-2"			I-330-1-F2C2-3"											
PROCESS MATERIAL			WATER			MCS 1016			ORTHO-CHLORO								
OPERATING DATA	FLOW TEMPERATURE		180°F			320°F											
	WORKING PRESSURE (PSIG INLET)		15 PSIG			10 PSIG											
	VALVE TO CLOSE AGAINST (PSIG)		65 PSIG			40 PSIG											
	SP GR AT FLOW-TEMPERATURE		1.0			1.25											
	VAPOR PRESSURE AT TEMP., MM HG		400			6.5											
DESIGN COND GAS @ 60 F 14.7 PSIA LIQUID @ FLOW TEMP	FLUID		(LIQ)	GAS	STM	(LIQ)	GAS	STM	LIQ	GAS	STM	LIQ	GAS	STM			
	NORMAL FLOW – UNITS		200 GPM			10 GPM											
	MAXIMUM FLOW – UNITS (REQUIRED)		200 GPM			15 GPM			28 GPM								
	△ P		15 PSI			20 PSI											
	% TRAVEL & Cv AT DESIGN CONDITIONS		85%	36.4		55%	2.8		70%	4.5							
VALVE SPECIFICATION	VALVE BODY SIZE		1½"			1"											
	BODY RATING & END CONNECTION		125#	SCR	FLG	150#	SCR	FLG		SCR	FLG		SCR	FLG			
	BODY MATERIAL		CAST IRON			STEEL											
	TRIM SIZE OR MAXIMUM Cv		1⅞"	39.2		¾"	9.96										
	SEATS		(SP)	DP		(SP)	DP		SP	DP		SP	DP				
	TRIM MATERIAL		STAINLESS STL			STAINLESS STL											
	TYPE INNER VALVE		LINEAR CAGE			MICRO FORM VALVE PLUG											
	PACKING		TFE V RING			TFE V RING											
	GUIDING		(SKIRT)	TOP	BTM	(SKIRT)	TOP	BTM	SKIRT	TOP	BTM	SKIRT	TOP	BTM			
	VALVE ACTUATOR		(DIAPH)	PISTON		DIAPH	PISTON		DIAPH	PISTON		DIAPH	PISTON				
	SIGNAL FROM INSTRUMENT (PSIG)		3-15 PSIG			3-15 PSIG											
	AIR PRESSURE TO OPERATOR		3-15 PSIG			3-15 PSIG											
VALVE POSITIONERS	MODEL NO.		NONE			NONE											
	3 GAGES	BYPASS															
I/P TRANSDUCER	MODEL NO.		NONE			NONE											
	SIGNAL																
PIPED & MOUNTED AIR SUPPLY REGULATOR			YES	(NO)		YES	(NO)		YES	NO		YES	NO				
ON AIR FAILURE VALVE			CLOSES	(OPENS)		CLOSES	OPENS		CLOSES	OPENS		CLOSES	OPENS				
FLOW TENDS TO			CLOSE	(OPEN)		CLOSE	(OPEN)		CLOSE	OPEN		CLOSE	OPEN				
AIR SUPPLY TO VALVE (PSIG)			3-15			3-15											
REMARKS	ACCESSORIES OR SPECIAL FEATURES																
	ACTUATOR NUMBER		34			30											
	DESIGN NOTE		—			DO NOT EXPOSE TO -305- TEMP.											
DIMENSIONS	A. FACE TO FACE		8¾"			7¼											
	B. FACE TO CENTER		4⅜"			3⅝											
	C. FACE TO CENTER		2 7/16"			2½											
	D. CLEARANCE		24"			24"											
	E. CLEARANCE		30"			30"											
	H. ACTUATOR DIAMETER		13⅛			11⅜											
	J. ACTUATOR HEIGHT		19⅝			18 11/16											



PURCH.				
MANUFACTURER	FISHER	FISHER		
CATALOG NUMBER	657-ED	667-ES		
PURCHASE ORDER NUMBER	0020	0020		
PRICE	# 355	# 330		

REV							
0	P SHAPED	EHS	12/20/70	3	REVISED ENTIRE SHEET	EHS	1/27/71
1	CHG. SPEC. TV-325-3	EHS	4/16/74	4			
2				5			

ES 110 (REV 2/70)

PCB-ARCH-EXT0374267

PHASE 2

Monsanto

CONTROL VALVE SPECIFICATION

LOCATION	DIVISION	PLANT	SPEC NO.
WGK	002	WGK	IS-2417-30
	AUTH NO.	DEPT OR AREA	SHEET / REV
	2417	246	4 OF / 0

| | | |

Por 8*
4*
5*

Monsanto COMPANY — LOCATION WGK

***DIFFERENTIAL PRESSURE *INSTRUMENT SPECIFICATIONS**

DIVISION	PLANT	*SPEC NO.
002	WGK	IS-2417-S
AUTH NO.	DEPT OR AREA	SHEET
2417	246	4 OF 5

1	Instrument No.		2417 -	LIA-328-1		FT406-1	FT413-1
	Service			LEVEL		FLOW to #6	N2 to #9 chlor
				INDICATION		Chlorinator	
	Equipment No. or Line No. & Size			- 328 -			
	Process Material			AROCLOR			Nitrogen
3	CASE	Blind, Indicating, Record, Control, Transmit		INDICATING			
		Mounting: Flush, Surface Yoke		NOZZLE			
		CHART	Size and Type				
			Range				
			Drive / Speed				
		SCALE	Size & Type	3-15 PSIG LOCAL PRESS GAUGE			
			Range	0-100 LIN			
	DIFFERENTIAL UNIT	Flow, Level, Pressure		LEVEL		Flow	
		Bellows, Diaphragm, Other		DIAPHRAGM		Dia.	
7*		*Span & Units		150"		100" W.C.	225" W.C.
		Range Limits		20 TO 205" WC.			
		Body Rating @ 60°F		275 #			
6*		*Body Material		C.S.		C.S	
		Element Material		316 S.S.		316 SS	
		Wetted Parts Material		C.S. + 316 SS		C.S. & 316 SS	
		Extended Diaph. Length		—			
		Fluid Sp. Gr.		1.15			No.
	SIGNALS	PROCESS INPUT	Liquid, Gas, Cond. Vapor	LIQUID			GAS
			Operating Pressure	ATM			30 PSIG
		INSTRUM. OUTPUT	Range & Units	3-15 PSIG			
			To	0-100 LIN PRESS GAUGE			
		Power Supply – Electrical, Pneumatic		PNEU			
		Electrical Area Classification		WEATHER TITE			
	CONTROLLER	Proportional Band %					
		Auto-Reset Mode		NO / SLOW / FAST	NO / SLOW / FAST	NO / SLOW / FAST	NO / SLOW / FAS
		Rate Mode		YES / NO	YES / NO	YES / NO	YES / NO
		Auto-Manual By Pass		YES / NO	YES / NO	YES / NO	YES / NO
		On Measurement Increase Instrument Output		INC. / DEC	INC. / DEC	INC. / DEC	INC. / DEC
	Pipe & Mt'd Air Supply Reg.			YES / NO	YES / NO	YES / NO	YES / NO
	Output Gage, 3½" Size			YES / NO	YES / NO	YES / NO	YES / NO
	REMARKS	Accessories or Special Features				ORIFICE WITH	0-30 SCFM
		FLANGE, 3" – 150# R.F.		YES		FE406-1	nitrogen
		AIR SUPPLY SET, 2" GAGE		R-110-2M P-102-YN		See Spec	metered at
		OUTPUT GAGE 0-100 LIN		YES		2417-45 IMS	30 PSIG
							WITH ORIFICE
							ORIFICE 025"
							225" WATER
2	PURCH.	Manufacturer		FOXBORO		FOXBORO	Foxboro
		Catalog No.		13FA1-MK-315		13A	13A
		P.O. No.		0042		SURPLUS	SURPLUS
		Price		$ 400			

REV. DATE								
	0	PREPARED	EHJ	1/4/71	4			
	1	Added FT406-1			5			
	2				6			
	3				7			

ES 117 (10/68)

PCB-ARCH-EXT0374269

PHASE 2

Per 8*
4*
5*

Monsanto COMPANY	*DIFFERENTIAL PRESSURE *INSTRUMENT SPECIFICATIONS	DIVISION 002	PLANT WGK	* SPEC NO. IS-2417-3
LOCATION WGK		AUTH NO. 2417	DEPT OR AREA 246	SHEET 5 OF 5

1	Instrument No.			2417-	FT-349-1			FT-541-1								
	Service				FLOW TO -348-			FLOW TO 539, 540								
	Equipment No. or Line No. & Size				1-349-1-A2C12-1½"			1-541-1-A11-1½"								
	Process Material				ARCLOR			ARCLOR								
3	CASE	Blind, Indicating, Record, Control, Transmit			BLIND			INDIC, TRANS								
		Mounting: Flush, Surface Yoke			YOKE			YOKE								
		CHART	Size and Type													
			Range													
			Drive	Speed												
		SCALE	Size & Type													
			Range													
	DIFFERENTIAL UNIT	Flow, Level, Pressure			FLOW						CONTRUCTION NOTE:					
		Bellows, Diaphragm, Other			DIAPHRAGM						USE EXISTING					
7*		*Span & Units			0-400 "WC			0-100 "WC			INTEGRAL ORIFICE					
		Range Limits			0-200 TO 0-850"			0-20 TO 0-205"			FLOW TRANSMITTER					
		Body Rating @ 60°F			1500 PSI						ON FLOW TO 539 &					
6*		*Body Material			316 SS						540 FOR FT-349-1					
		Element Material			316 SS						(USE EXISTING 800 FT 32)					
		Wetted Parts Material			316 SS											
		~~Extended Diaph. Length~~ PROCESS FLOW TEMP			212 °F			175 °F								
		Fluid Sp. Gr. @ FLOW TEMP	@ 60°F		1.45	1.55		1.34	—							
	SIGNALS	PROCESS INPUT	Liquid, Gas, Cond. Vapor		LIQUID											
			Operating Pressure		90.0 PSIA			65 PSIG								
		INSTRUM. OUTPUT	Range & Units		3-15 PSIG											
			To		FRC 349-1			FRCA-541-1								
		Power Supply – Electrical, Pneumatic			PNEUMATIC											
		Electrical Area Classification			GEN PURP											
	CONTROLLER	Proportional Band %														
		Auto-Reset Mode			NO SLOW FAST			NO SLOW FAST			NO SLOW FAST			NO SLOW FAST		
		Rate Mode			YES NO			YES NO			YES NO			YES NO		
		Auto-Manual By Pass			YES NO			YES NO			YES NO			YES NO		
		On Measurement Increase Instrument Output			INC. DEC			INC. DEC			INC. DEC			INC. DEC		
		Pipe & Mt'd Air Supply Reg. FIXED PRESS			(YES) NO			(YES) NO			YES NO			YES NO		
		Output Gage, 3½" Size			(YES) NO			(YES) NO			YES NO			YES NO		
	REMARKS	Accessories or Special Features VISCOSITY			9.0 CP			CONSTRUCTION								
		PROCESS CONNECTION			½" N.P.T.			NOTE: CONNECT								
		PROCESS FLOW NORMAL | MAX			6 GPM | 10 GPM			WITH 316 SS								
		FURNISH WITH INTEGRAL ORIFICE ATTACH			0.350" BORE			TUBING								
		ORIFICE + MANIFOLD MTL			316 SS											
		CHEMALLOY GASKET FOR HI TEMP			YES											
					6-10 GPM @ 400" WC											
2	PURCH.	Manufacturer			FOXBORO			FOXBORO								
		Catalog No.			13HA-HS2			13A-MS2								
		P.O. No.			EXISTING			0062								
		Price			# 450			# 350								

REV. DATE								
	0	PREPARED	EHJ	1/20/71	4			
	1	CHG SPAN FT-541-1	EHJ	4/27/71	5			
	2				6			
	3				7			

ES 117 (10/66)

PCB-ARCH-EXT0374270

Per 10*
4*
5*

Monsanto COMPANY — LOCATION WGK

*** LEVEL DISPLACER *OR FLOAT SPECIFICATIONS**

DIVISION	PLANT	* SPEC NO.
002	WGK	IS-2417-34
AUTH NO.	DEPT OR AREA	SHEET / REV
2417	246	1 OF 3 / 3

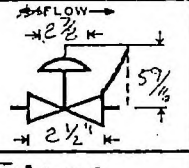
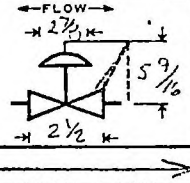
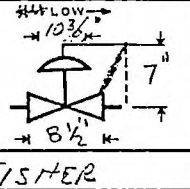
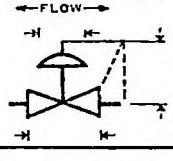
1	Instrument No.			2417 -		LIA-305-3			2			LIA-312-3					
	Service					LEVEL						LEVEL					
	Equipment No.					305						312					
3	BODY	Blind, Controlling, Transmitting				TRANS,						TRANS					
		Type				INTERNAL DIS.						INTERNAL DIS					
		Material				CARBON STL.						CARBON STL					
7*		*Connection Size & Rating				4", 150 # RF						4", 150 # R.F.					
		Connection Arrangement				(TOP) BTM. SIDE			TOP BTM. SIDE			(TOP) BTM. SIDE			TOP BTM. SIDE		
		Rotatable Head Required				YES ~~NO~~			YES - NO -			YES ~~NO~~			YES NO		
		Vent or Drain – Size & Rating															
		Cooling Fin or Extension				YES						YES					
		Provide Pilot Not Crossed Out and Orient Connections as Shown				~~LH~~ RH			LH RH			~~LH~~ RH			LH RH		
8*	INTERNALS	*Sensor Type	*Material			DISPL	304 SS					DISPL	304 SS				
9*		*Sensor Size or Length				146" x 3/4"			3			125" x 3/4"			3		
		Torque Tube Material				K MONEL						K MONEL					
		Extension Length				8.5"						8.5"					
	SIGNALS	Transmitting Output	Range & Units			3-15 PSIG						3-15 PSIG					
			To			PRESS GAGE						LI-312-3					
		Controller Output	Range & Units			—						—					
			To			—						—					
		Power Supply – Electrical, Pneumatic				PNEU, 80 PSIG						PNEU, 80 PSIG					
		Electrical Area Classification				WEATHER TITE						WEATHER TITE					
	CONTROLLER	Proportional Band %															
		Auto – Reset Mode				NO SLOW FAST			NO SLOW FAST			NO SLOW FAST			NO SLOW FAST		
		On Level Increase Instrument Output				INC DEC			INC DEC			INC DEC			INC DEC		
	OPERATING CONDITIONS	Fluid	Upper	Lower		AROCLOR						AROCLOR					
		Sp. Gr. @ Oper. Temp.	Upper	Lower		1.26	1.32					1.26	1.32				
		Temperature °C	Normal	Max.		300	345					300	345				
		Pressure PSIA	Normal	Max.		2.7	0					15	15				
		Piped & Mt'd Air Supply Reg.				YES ~~NO~~			YES NO			YES ~~NO~~			YES NO		
	REMARKS	Accessories or Special Features															
		AIR FIN EXTENSION				YES						YES					
		SUPPLY PRESSURE REGULATOR				YES						YES					
		INDICATING GAUGE															
		3½" DIAM, 0-100 SCALE				YES						YES					
		ON LEVEL INCREASE:															
		TRANSMITTER OUTPUT				INCREASES						INCREASES					
2	PURCH.	Manufacturer				FISHER						FISHER					
6*		*Catalog No.				2500T-249BP						2500T-249 BP					
		P.O. No.				0020						0020					
		Price				# 650 EST						# 650 EST					

REV.	DATE			
0		PREPARED	EHJ	10/26/70
1		CHG EXTENSION LENGTH	EHJ	11/30/70
2		CHG LICA-305-3 TO LIA-305-3	EHJ	12/2/70
3		CHG DISP & EXTN LENGTH 305 312	EHJ	1/4/71
4				
5				
6				
7				

FS 120 (10/71)

PCB-ARCH-EXT0374271

Monsanto COMPANY LOCATION WGK	*DIRECT OPERATED *PRESSURE REGULATING *VALVE SPECIFICATIONS	DIVISION 002 AUTH NO. 2417	PLANT WGK DEPT OR AREA 246	* SPEC NO. IS-2417-42 SHEET 5 OF ___	RE 1

1	Valve No.		2417-	PCV-303-1		PCV-303-2		PCV-308-2				
	Service			TPG-303-1		TPG-303-2		STEAM TO STEAM JET				
	Line Number & Size			FIELD CABINET	→	→	→	SM-1-F3817-1½"				
	Process Material			INST AIR	→	→	→	STEAM				
	Operating Data	Flow Temperature		AMBIENT	→	→	→	390°F				
		Working Pressure (PSIG Inlet)		60	→	→	→	200 PSIG				
		Valve to Close Against (PSIG.)		60	→	→	→	200 PSIG				
		Sp. Gr. @ Flow Temp.		1.0	→	→	→	2.1 FT³/#				
	Design Conditions Gas @ 60°F 14.7 PSIA Liquid @ Flow Temp.	Normal Flow		0	→	→	→	500 #/HR				
		Max. Flow		0	→	→	→	600 #/HR				
		Units: SCFM, SCFH, GPM or #/Hr.		SCFH	→	→	→	#/HR				
		Fluid		LIQ. (GAS) STM		LIQ. (GAS) STM		LIQ. GAS (STM)		LIQ.	GAS	STM
		Inner Valve Travel, % @ Design Flow		—		—						
		ΔP	C_V (Calc.) @ Design Cond.	55	—	50	—					
		Calculation Sheet No.		—		—						
8*	Valve Specifications	*Valve Body Size		¼" NPT	→	→	→	1½"				
		Valve Port Size		—		—		FULL				
		Body Rating & Conn. Size		250 PSI	¼" SCRD	→	→	250#	1½" R.F.			
7		Body Material		ALUMINUM	→	→	→	HI TENSILE IRON				
		Trim Material		BRASS	→	→	→	STAINLESS STL				
		Type Inner Valve		BUNA N	→	→	→	STAINLESS STL				
		Seats (Double or Single)		(SP) DP		(SP) DP		(SP) DP		SP	DP	
		Valve actuator (Diaph or Piston)		(DIAPH) PISTON		(DIAPH) PISTON		(DIAPH) PISTON		DIAPH	PISTON	
		Matl of Const (Diaph or Piston)		BUNA N	→	→	→	STAINLESS STL				
		Lubricator	Isolating Valve	—	—	—	—	—	PILOT			
		Packing		—		—		NONE				
		Guiding		SKIRT (TOP) BTM		SKIRT (TOP) BTM		SKIRT TOP (BTM)		SKIRT	TOP	BTM
	Spring Setting		PSIG	5		10		150 #				
9*	*Spring Range		PSIG	5-20		5-20		70-150 #				
	On Increased Pressure Valve			OPENS (CLOSES)		OPENS (CLOSES)		OPENS (CLOSES)		OPENS	CLOSES	
	Type of Regulator							PILOT OPER.				
	REMARKS	Accessories or Special Features						REDUCING				
		2" OUTPUT GAUGE		YES		YES		VALVE				
		PANEL MOUNTING		YES		YES						
	DIMENSIONS											
2	PURCHASING	Manufacturer		FISHER	→	→	→	FISHER				
6*		*Catalog No.		67RPTC	→	→	→	92B				
		P.O. No.		0042		0042		0042				
		Price		# 15		# 15		# 183				

REV. DATE								
	0	PREPARED	EHS	12/31/69	4			
	1	ADDED PCV-308-2	EHS	12/31/70	5			
	2				6			
	3				7			

ES 109 (10/66)

PCB-ARCH-EXT0374272

PHASE 2

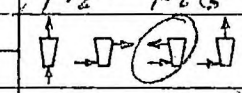
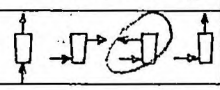
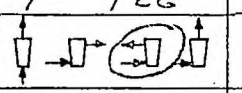
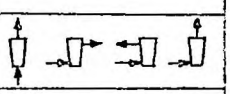
Per 7*

4*

Monsanto COMPANY LOCATION WGK

*ROTAMETER SPECIFICATIONS

DIVISION	PLANT	*SPEC NO.	
002	WGK	IS-2417-44	
AUTH NO.	DEPT OR NO.	SHEET	REV
2417	246	6 OF 6	1

	Instrument No.			2417 -	FI 539-1	FI 540-1	FI 331-1			
	Service				FLOW	→	→			
					INDICATION	→	→			
	Process Material				AROCLOR	→	→			
	Line No.				1-541-1-A11-1½"	→	1-331-2-F2816-1"			
	Line Size, Schedule				1½", 40	→	1", 40			
SERVICE	Operating Conditions	Pressure	Temp.		20 PSIG / 150°F	→	10 PSIG / 150°F			
		S.P. Gr.	Visc. C.P.		1.34 / 7.0	→	1.25 / 7			
	Base Conditions	Pressure	Temp.		— / —	→	— / —			
		Sp. Gr.	Visc.		— / —	→	— / —			
	Inlet Pressure – Max, _____				90 PSIG	→	75 PSIG			
	Flow @ Base Conditions	Liquid			5.0 GPM	→	1.0 GPM			
		Gas			—	→	—			
		Steam			—	→	—			
	Fluid Character	Clean	Trans.	Steady	CLEAN, TRANS	→	TRANS			
		Slurry	Opaque	Pulse	STEADY	→	→			
3 CASE	Indicating, Recording, Transmitting				X	X	X			
	Chart Or Scale	Size & Type			X	X	X			
		Range			X	X	X			
		Drive & Speed			X	X	X			
SIGNAL	Instrument Output	Range & Units			X	X	X			
		To			X	X	X			
	Power Supply: Electrical, Pneumatic				X	X	X			
	Electrical Area Classification				X	X	X			
6* BODY	*Connection – Size & Rating				1½" FLG	→	1" FLG			
	Arrangement of Connections	Inlet								
		Outlet								
	Metering Tube Size (by Vendor)				8	→	6			
	Meter △P Normal (by Vendor)				11" WC, AT 7.6 GPM	→	9.7" WC, AT 4.9 GPM			
	Materials Of Construction	Body Fittings			316 SS	→	→			
		Metering & Ext. Tube			GLASS	→	→			
		Float			316 SS, BSVT-84	→	316 SS, BSVT-64			
		Packing or Gaskets			TEFLON	→	→			
REMARKS	Accessories or Special Features									
	LAMINATED SAFETY GLASS WINDOW				YES	→	→			
	GLASS TUBE ROTAMETER				YES	→	→			
	SAFE WORKING PRESSURE				130 PSIG	→	175 PSIG			
	SCALE LENGTH				10"	→	→			
	SCALE READING				PERCENTAGE	→	→			
	MAX FLOW (AROCLOR) GPM				13	→	4.1			
2 5* PURCH.	Manufacturer				FISCHER & PORTER	→	→			
	*Catalog Number				10A1736A	→	→			
	Purchase Order Number				0063	0063	0063			
	Price				$ 270	$ 270	$ 204			

REV.									
	0	PREPARED	EHS	1/27/71	4				
	1	CHG FLOAT SPEC	EHS	3/1/71	5				
	2	CHG CATALOG NO	EHS	4/5/71	6				
	3				7				

ES 102 (10/66)

PCB-ARCH-EXT0374273

VARIANCE # 1

Per 7*

4*

Monsanto COMPANY — LOCATION WGK

***ROTAMETER SPECIFICATIONS**

DIVISION	PLANT	*SPEC NO.	
002	WGK	IS-2417-44	
AUTH NO.	DEPT OR NO.	SHEET	REV
2417	246	7 OF 7	1

Instrument No.				2417 -	FT-303-1	→		FT-303-3	→			
Service												
Process Material					MCS-1016		ORTHO-CHLORO	MCJ-1016			ORTHO-CHLORO	
Line No.					1-302-4-A11-2"			1-302-1-A11-4"				
Line Size, Schedule					2", 40			4", 40				
SERVICE	Operating Conditions	Pressure PSIA	Temp. °C		14.7	65	14.7	80	1.0	65	7.0	80
		S.P. Gr.	Visc. C.P.		1.35	7.0	1.00	1.5	1.35	7.0	1.00	1.5
	Base Conditions	Pressure	Temp.		—	—	—	—	—	—	—	—
		Sp. Gr.	Visc.		—	—	—	—	—	—	—	—
	Inlet Pressure — Max. PSIA				14.7		14.7		1.0		7.0	
	Flow @ OPERATING Base Conditions	Liquid MIN / MAX GPM			9.5	14	15.6	28	25	27	62.2	69.1
		Gas			—		—		—		—	
		Steam			—		—		—		—	
	Fluid Character	Clean	Trans.	Steady	LIQUID-STEADY	→	→		→		→	
		Slurry	Opaque	Pulse	CLEAN	→	→		→		→	
3 CASE	Indicating, Recording, Transmitting				INDICATE +				INDICATE +			
	Chart Or Scale	Size & Type			TRANSMIT				TRANSMIT			
		Range			5" SCALE				5" SCALE			
		Drive & Speed			8-100 %				8-100 %			
SIGNAL	Instrument Output	Range & Units			3-15 PSIG				3-15 PSIG			
		To			FIC-303-1				FI-303-3			
	Power Supply: ~~Electrical~~, Pneumatic				20 PSIG				20 PSIG			
	Electrical Area Classification				—				←			
6* BODY	*Connection – Size & Rating				1½" FLG, 150#		2		2" FLG, 150 #			
	Arrangement of Connections	Inlet										
		Outlet										
	Metering Tube Size (by Vendor)				M8-35-5-SV				M11-24-5-SV			
	Meter △ P Normal (by Vendor) AT ANY FLOW				36 " WC		38 " WC		35.6" WC		37.5" WC	
	Materials Of Construction	Body Fittings			316 SS				CARBON STL			
		Metering & Ext. Tube			316 SS				CARBON STL			
		Float			316 SS				316 SS			
		Packing or Gaskets			TEFLON				TEFLON			
REMARKS	Accessories or Special Features				NEW TUBE & FLOAT TO BE INSTALLED IN EXISTING △1							
	ROTAMETER MAX CAPACITY @ OPERATING CONDITIONS				METERS by FIELD							
					29.3 GPM		35.0 GPM		83.3 GPM		99.2 GPM	
	H2O EQUIV				35.0 GPM		35.0 GPM		99.2 GPM		99.2 GPM	
	ACCURACY				± 2% FS.				± 2% FS			
	AIR FILTER REG W/GAGE				YES				YES			
	NOTE 1. BOTH FLOWMETERS ARE TO BE SUITABLE FOR BOTH MCS-1016 & ORTHO-CHLORO SERVICE											
	NOTE 2. FIELD TO STEAM TRACE METERS & EXTENSION LINE △2											
2 5* PURCH.	Manufacturer				FISCHER & PORTER				FISCHER & PORTER			
	*Catalog Number				10A 1152A-OK-1401KA-41				-1401KA41			
	Purchase Order Number				0012 ch.2				0012 ch 2			
	Price				$600 EST				$509			

REV.								
	△0	PREPARED	EHS	4/2/71	△4			
	△1	Added notes	EAH	6/3/71	△5			
	△2	REV as built	CJH	7/30/71	△6			
	△3				△7			

PCB-ARCH-EXT0374274

Per 10*
3*
4*

Monsanto COMPANY LOCATION W6K	*FLOW MEASURING *ELEMENT SPECIFICATIONS	DIVISION 002	PLANT W6K	*SPEC NO. IS-2417-45-
		AUTH NO. 2417	DEPT OR AREA 246	SHEET 2 OF 4 REV 2

1	Instrument No.		2417 -	FE-307-2	FE-307-5	FO 305-4
	Service				AROCLOR FLOW FROM FURNACE	RESTRICTING ORIFICE (1)
	Process Material			FUEL GAS	AROCLOR	AROCLOR
	Line No.			F27-2"	1-307-1-F2316-8"	1-307-1-F2B16-8"
	Line Size, Schedule			2", 40	8", 40	8", 40
SERVICE	Upstream Operating Conditions	Flowing Press. P_f		28 PSIG	15 PSIG	15 PSIG
		Flowing Temp T_f		60°F	300°C	300°C
		Sp. Gr. @ T_f		.133 #/FT³	1.35	1.35
		Viscosity CP @ T_f		0.01	1.6	1.6
		Sp. Gr. @ 60°F		.133 #/FT³	———	———
		Supercompr. Factor @ T_f				
		Steam Quality, %				
		Steam Superheat, F				
	Flow at Base Conditions 60F & 14.73 PSIA Barometric Pressure at Location ____ In. Hg.	Liquid, Gas or Steam		GAS	LIQUID	LIQUID
		Minimum Flow		0	0	0
		Normal Flow		8960	600	600
		Maximum Flow		13500 (2)	600	600
		Units of Flow		SCFH	GPM	GPM
		Meter Range		0-44.61" WC.	0-50" W.C.	NONE
8* FLANGES	*Size & Type – W.N., S.O., Scrd., Van Stone (1)			2" W.N.	3" S.O.	8" W.N.
9*	*Rating & Facing			300# RF	300# RF	150# ASA
7→	Material – Flange & R.T.J. Ring or Gasket (1)			CARBON STEEL	CARBON STEEL	CARBON STL
	Taps – Type, Size & Orientation (R2.3 Std)			FLG ½" NPT SIDE	FLG ½" NPT SIDE	NONE
ORIFICE PLATE	Type of Plate (R2.3 Std)			PADDLE TYPE	PADDLE TYPE	PADDLE TYPE
	Plate Material & Thickness			304 SS, ⅛"	304 SS, ⅓"	304 SS, ⅓"
	Pipe ID (D), In.			2.067"	7.981"	7.981"
	Orifice ID (d), In.			1.06381"	5.04671	4.500217
	d/D Ratio (β)			0.51466	0.63234	.56387
6→	Meter Range – Inches Water Dry			40"	50"	ΔP = 2.0 PSI
	Type of Meter			FOX D/P	BARTON BELLOWS	NONE
	Drain or Vent Hole			NONE	NONE	NONE
	Chart or Scale Range			0-10 SQ RT	0-10 SQ RT	NONE
	Chart Factor (2)			X 1350	X 60	NONE
	Calculation Sheet No.					
REMARKS	CAT NO. METER RUN OR ORIFICE FLANGE			M-30RW	30RS	
	CAT NO. ORIFICE PLATE			520	520	520
	ACCESSORIES			MFG. STD	MFG STD	
	GASKETS			ASBESTOS	ASBESTOS	ASBESTOS
	All orifice handles to be stamped on upstream side with "Inlet", bore dia, nom pipe ID, flange rating, instrument number and plate material					(ORIFICE PLATE ONLY)
2 5* PURCH.	Manufacturer			DANIEL IND	→	→
	*Catalog Number			AS ABOVE	→	→
	Purchase Order Number			0041	0041	DELETE
	Price			#125		

REV								
	(0)	PREPARED	EHS	10/19/70	(4)			
	(1)	ADD FO 305-4	EHS	11/17/70	(5)			
	(2)	CHG METER RANGE	EHS	2/3/71	(6)			
	(3)				(7)			

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Por 6*

3*

Monsanto COMPANY — LOCATION WGK

PROCESS ACTUATED * SWITCHES SPECIFICATIONS

DIVISION	PLANT	*SPEC NO.	
002	WGK	IS-2417-5.4	
AUTH NO.	DEPT OR AREA	SHEET	REV
2417	246	1 OF 4	1

1	Instrument No.	2417 —	LA-305-3.1	LA-305-3.2	LA-316-1.1	LA-316-1.2
	Service		HIGH LEVEL ALARM	LOW LEVEL ALARM	HIGH LEVEL ALARM	LOW LEVEL ALARM
	Equipment No. or Line No. & Size					
	Process Material		INST AIR	INST AIR		
GENERAL	Press. Temp. – Level Flow Switch – Relay		PRESSURE	→		
	Temperature	Normal / Max.	AMBIENT	AMBIENT		
	Pressure PSIG	Normal / Max.	9 / 15	9 / 15		
	Fluid (Level Only)	Upper / Lower				
	Sp. Gr. @ Oper. Temp.	Upper / Lower				
5*	*Range & Units	PSIG	1-20	1-20		
ELEMENT	Pressure	Type Element & Material	DIAPHRAGM	DIAPHRAGM		
		Conn. Size / Orientation	¼" NPT / BTM	¼" NPT / BTM		
	Temp.	Fill – Gas, Mercury, etc.				
		Capillary – Length / Material				
		Armor Material				
		Bulb-Diameter / Length				
		Bulb Type – Plain, Union				
		Bulb Conn. – Size & Rating				
		Well Material				
		Well Conn. Size & Rating				
		Lgth below Thread or Flange "U" (SEE NOTE)				
		Lagging Extension "T" (SEE NOTE)				
	Level	Type & Material				
		Connection Size & Rating				
		Connection Arrangement				
		Cooling Fin or Extension				
		Float Material & Size				
	Flow	Connection or Body Size				
		Type Element & Matl.				
		Disc or Paddle Size				
SWITCH	Type – Mercury, Micro, etc.		MERCURY	MERCURY		
	Contact Arrangement / Rating – Volts & Amps		SPDT, 4A/120V	SPDT, 4A/120V		
	Set Point		.14 PSIG	4 PSIG		
	On Measurement Increase Switch		~~OPENS~~ / ~~CLOSES~~	~~OPENS~~ / ~~CLOSES~~	~~OPENS~~ / ~~CLOSES~~	~~OPENS~~ / ~~CLOSES~~
	Electrical Area Classification		G.P. NEMA 1	G.P. NEMA 1		
	Conduit Conn. Size & Hub or K.O.		½"	½"		
	Differential Range – Fixed, Adjustable		FIXED	FIXED		
REMARKS	Accessories or Special Features					
	ADJUSTABLE SET POINT		YES	YES		
	SWITCH FIELD-WIRED TO OPEN ON ALARM		YES	YES		
2	PURCH. Manufacturer		MERCOID	→		
4*	*Catalog No.		AP-153-R36	→		
	P.O. No.		# 0015	# 0015	0015	0015
	Price		18	18		

REV.							
0	PREPARED	EHS	10/26/70	4			
1	CHG. INST No.	EHS	11/17/70	5			
2				6			
3				7			

3 113 (10/66)

NOTE: For explanation of dimensions U, T ref. to ISA RP-20.1 Pg. 16

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Per 6*

3*

Monsanto COMPANY — PROCESS ACTUATED * SWITCHES SPECIFICATIONS

LOCATION W6K

DIVISION	PLANT	*SPEC NO.
002	W6K	IS-2417-5
AUTH NO.	DEPT OR AREA	SHEET / RE
2417	246	2 OF 4 / 1

1	Instrument No.	2417 -	LA-312-3.1	LA-312-3.2	PA-312-6	PA-301-5
	Service		HIGH LEVEL ALARM	LOW LEVEL ALARM	H PRESSURE ALARM	HI-PRESSURE ALARM
	Equipment No. or Line No. & Size				312	
	Process Material		INST AIR	→	NITROGEN	INST AIR
GENERAL	Press. Temp. – Level Flow Switch – Relay		PRESSURE	→	→	PRESSURE
GENERAL	Temperature / Normal / Max.		AMBIENT	→	→	AMBIENT
GENERAL	Pressure PSIG / Normal / Max.		9 PSIG / 15 PSIG	→	0"WC / 5"WC	3 PSIG / 15 PSIG
GENERAL	Fluid (Level Only) / Upper / Lower					
GENERAL	Sp. Gr. @ Oper. Temp. / Upper / Lower					
5*	*Range & Units		1-20 PSIG	→	1-30" W.C.	1-20 PSIG
ELEMENT	Pressure — Type Element & Material		DIAPHRAGM	→	DIAPHRAGM	DIAPHRAGM
ELEMENT	Pressure — Conn. Size / Orientation		¼" NPT / BTM	→	½" NPT / BTM	¼" NPT / BTM
ELEMENT	Temp. — Fill – Gas, Mercury, etc.					
ELEMENT	Temp. — Capillary – Length / Material					
ELEMENT	Temp. — Armor Material					
ELEMENT	Temp. — Bulb-Diameter / Length					
ELEMENT	Temp. — Bulb Type – Plain, Union					
ELEMENT	Temp. — Bulb Conn. – Size & Rating					
ELEMENT	Temp. — Well Material					
ELEMENT	Temp. — Well Conn. Size & Rating					
ELEMENT	Temp. — Lgth below Thread or Flange "U" (SEE NOTE)					
ELEMENT	Temp. — Lagging Extension "T" (SEE NOTE)					
ELEMENT	Level — Type & Material					
ELEMENT	Level — Connection Size & Rating					
ELEMENT	Level — Connection Arrangement					
ELEMENT	Level — Cooling Fin or Extension					
ELEMENT	Level — Float Material & Size					
ELEMENT	Flow — Connection or Body Size					
ELEMENT	Flow — Type Element & Matl.					
ELEMENT	Flow — Disc or Paddle Size					
SWITCH	Type – Mercury, Micro, etc.		MERCURY	→	→	MERCURY
SWITCH	Contact Arrangement / Rating – Volts & Amps		SPDT, 4A/120V	→	→	SPDT, 4A/120V
SWITCH	Set Point		14 PSIG	4 PSIG	5" W.C.	14 PSIG
SWITCH	On Measurement Increase Switch		OPENS / ~~CLOSES~~	OPENS / ~~CLOSES~~	OPENS / ~~CLOSES~~	OPENS / ~~CLOSES~~
SWITCH	Electrical Area Classification		G.P. NEMA 1	→	WEATHER RESISTANT	G.P. NEMA 1
SWITCH	Conduit Conn. Size & Hub or K.O.		½"	→	→	½"
SWITCH	Differential Range – Fixed, Adjustable		FIXED	→	→	FIXED
REMARKS	Accessories or Special Features				RANGE P1	
REMARKS	ADJUSTABLE SET POINT		YES	→	YES	YES
REMARKS	SWITCH FIELD-WIRED TO OPEN ON ALARM		YES	→	YES	YES
2	Manufacturer		MERCOID	→	→	MERCOID
4* PURCH.	*Catalog No.		AP-153-R36	→	PGW-153	AP-153-R36
PURCH.	P.O. No.		#0015	0015	SPARE	0061
PURCH.	Price		#18	→	$60	$18

REV.					
0	PREPARED	EHS	10/21/70	4	
1	ADDED PA-312-6	EHS	11/25/70	5	
2	ADDED PA-301-5	EHS	2/25/71	6	
3				7	

ES 113 (10/66)

NOTE: For explanation of dimensions U, T, ref. to ISA RP 20.1 Pg. 15

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Per 6*

ORDER LA-328-1.2

Monsanto COMPANY — LOCATION WGK	PROCESS ACTUATED * SWITCHES SPECIFICATIONS	DIVISION 002	PLANT WGK	*SPEC NO. IS-2417-5
		AUTH NO. 2417 (1)	DEPT OR AREA 246	SHEET 3 OF 4 — REV 0

1	Instrument No.	2417- LA-329-1	LA-328-1.1	LA-328-1.2	
	Service	HI LEVEL ALARM	HI LEVEL ALARM	LO LEVEL ALARM (1)	
	Equipment No. or Line No. & Size	329	328	328	
	Process Material	INST AIR	INST AIR	INST AIR	
GENERAL	Press. Temp. – Level Flow Switch – Relay	PRESS	PRESS	PRESS	
	Temperature — Normal / Max.	AMBIENT	AMBIENT	AMBIENT	
	Pressure PSIG — Normal / Max.	3 / 15	3 / 15	3 / 15	
	Fluid (Level Only) — Upper / Lower	X	X	X	
	Sp. Gr. @ Oper. Temp. — Upper / Lower	X	X	X	
5* ELEMENT	*Range & Units PSIG	1-20	1-20	1-20	
	Pressure — Type Element & Material	DIAPHRAGM	DIAPHRAGM	DIAPHRAGM	
	Pressure — Conn. Size / Orientation	1/4" NPT / BTM	1/4" NPT / BTM	1/4" NPT / BTM	
	Temp. — Fill – Gas, Mercury, etc.				
	Temp. — Capillary – Length / Material				
	Temp. — Armor Material				
	Temp. — Bulb-Diameter / Length				
	Temp. — Bulb Type – Plain, Union				
	Temp. — Bulb Conn. – Size & Rating				
	Temp. — Well Material				
	Temp. — Well Conn. Size & Rating				
	Temp. — Lgth below Thread or Flange "U" (SEE NOTE)				
	Temp. — Lagging Extension "T" (SEE NOTE)				
	Level — Type & Material				
	Level — Connection Size & Rating				
	Level — Connection Arrangement				
	Level — Cooling Fin or Extension				
	Level — Float Material & Size				
	Flow — Connection or Body Size				
	Flow — Type Element & Matl.				
	Flow — Disc or Paddle Size				
SWITCH	Type – Mercury, Micro, etc.	MERCURY	MERCURY	→	
	Contact Arrangement / Rating – Volts & Amps	SPDT, 4A/120V	→	→	
	Set Point	14.5 PSIG	14.5 PSIG	4 PSIG	
	On Measurement Increase Switch	(OPENS) CLOSES	(OPENS) CLOSES	OPENS (CLOSES)	OPENS / CLOSES
	Electrical Area Classification	G.P. NEMA 1	G.P. NEMA 1	→	
	Conduit Conn. Size & Hub or K.O.	1/2"	1/2"	→	
	Differential Range – Fixed, Adjustable	FIXED	FIXED	→	
REMARKS	Accessories or Special Features				
	ADJUSTABLE SET POINT	YES	YES	→	
	OPEN ON ALARM	YES	YES	→	
	MOUNT IN FIELD CABINET	YES	YES	→	
2 4* PURCH.	Manufacturer	MERCOID	MERCOID	→	
	*Catalog No.	AP-153-R36	AP-153-R36	→	
	P.O. No.	0036	0036	0061	
	Price	# 18	# 18	# 18	

REV.						
0	PREPARED	EHS	12/23/70	4		
1	ADD LA-328-1.2 CHG LA-328-1 TO LA-328-1.1	EHS	1/26/71	5		
2				6		
3				7		

ES 113 (10/66) NOTE: For explanation of dimension "U" Ref. to ISA RP 20.1 Par. 11

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PHASE 2

Monsanto COMPANY LOCATION WGK	PROCESS ACTUATED * SWITCHES SPECIFICATIONS	DIVISION 002	PLANT WGK	*SPEC NO. IS-2417-54
		AUTH NO. 2417	DEPT OR AREA 246	SHEET 4 OF 4 / REV O

Instrument No.			2417 - FA-349-1									
Service			LOW FLOW ALARM									
Equipment No. or Line No. & Size			V-349-1-A 11-1½									
Process Material			INST AIR									
GENERAL	Press. Temp. – Level Flow Switch – Relay		PRESSURE									
	Temperature	Normal / Max.	AMBIENT									
	Pressure	Normal / Max.	9	15								
	Fluid (Level Only)	Upper / Lower	X	X								
	Sp. Gr. @ Oper. Temp.	Upper / Lower	X	X								
ELEMENT	*Range & Units		1-20 PSIG									
	Pressure: Type Element & Material		DIAPHRAGM									
	Pressure: Conn. Size / Orientation		¼" NPT / BTM									
	Temp.: Fill – Gas, Mercury, etc.		X									
	Temp.: Capillary – Length / Material		X									
	Temp.: Armor Material		X									
	Temp.: Bulb-Diameter / Length		X									
	Temp.: Bulb Type – Plain, Union		X									
	Temp.: Bulb Conn. – Size & Rating		X									
	Temp.: Well Material		X									
	Temp.: Well Conn. Size & Rating		X									
	Temp.: Lgth below Thread or Flange "U" (SEE NOTE)		X									
	Temp.: Lagging Extension "T" (SEE NOTE)		X									
	Level: Type & Material		X									
	Level: Connection Size & Rating		X									
	Level: Connection Arrangement		X									
	Level: Cooling Fin or Extension		X									
	Level: Float Material & Size		X									
	Flow: Connection or Body Size		X									
	Flow: Type Element & Matl.		X									
	Flow: Disc or Paddle Size		X									
SWITCH	Type – Mercury, Micro, etc.		MERCURY									
	Contact Arrangement / Rating – Volts & Amps		SPDT, 4A / 120V									
	Set Point		4 PSIG									
	On Measurement Increase Switch		~~OPENS~~ CLOSES		OPENS	CLOSES	OPENS	CLOSES	OPENS	CLOSES		
	Electrical Area Classification		G.P., NEMA 1									
	Conduit Conn. Size & Hub or K.O.		½"									
	Differential Range – Fixed, Adjustable		FIXED									
REMARKS	Accessories or Special Features											
	ADJUSTABLE SET POINT		YES									
	SWITCH FIELD WIRED TO OPEN ON ALARM		YES									
PURCH.	Manufacturer		MERCOID									
	*Catalog No.		AP-153-R36									
	P.O. No.		00061									
	Price		$13									

REV.								
0	PREPARED	EHS	1/26/71	4				
1				5				
2				6				
3				7				

ES 113 (10/66)

NOTE: For explanation of dimensions U, T ref. to ISA RP-20.1 Pg. 16.

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