

Autotrol Performa™ Cv

Conditioner/Filter

Water Control System

Installation, Operation and Maintenance Manual

It is not to be installed

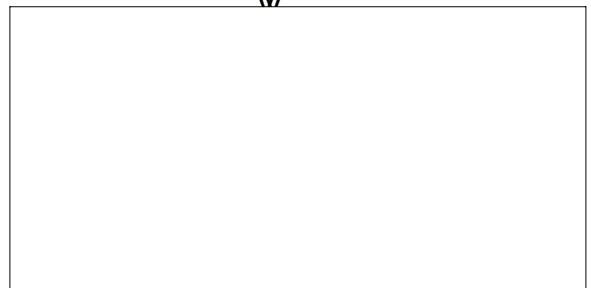


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1.0 Performa Cv System

1.1 Specifications

1.1.1 Performa Cv Conditioner

1.1.2 Performa Cv Filter Specifications

Flow Rates (Valve Only)

Service (15 psi (1.03 bar) @ 100 ft)	25.0 gpm (5.7 m ³ /h)
Backwash (125 psi (8.6 bar) @ 100 ft)	25.0 gpm (4.5 m ³ /h)
Service	Cv = 6.5 (v = 5.5)
Backwash	Cv = 5.0 (v = 5.7)

Control Operation

942F Mechanical Clock Timer - 7 Day or 12 Day

Backwash	30 minutes
Initial Fast Rinse	1 minute

962F Microprocessor Demand

Backwash	4 to 60 minutes
Fast Rinse	2 to 15 minutes

962 FTC Electronic Time Clock

Backwash	4 to 60 minutes
Fast Rinse	2 to 15 minutes

Interval Regeneration..... a full Water Rinse

Valve Connections/Dimensions

Top Thread	2-1/2 inb 3/4", max
Inlet/Outlet	1-3/4 inb 3/4" - 12 NPT, max
Drain in	

1.2 Installation

Combination electrical connections must conform to applicable codes.

Inspect unit carefully for carrier damage before installation.

Location Selection

- The distance between unit and air handler must be at least 12 inches.
- If it is located at supply or return air intake, equipment must be properly maintained and clearances must be maintained.
- Since it must be properly protected from rain, the unit must be located in a protected area.
- Do not install unit closer than 10 feet (3 m) from any other unit or equipment. Watch for clearances to other equipment and piping.

6) On of Vat

4. M r h rain n is vat but mpti int a
 rain b v h v f h nte vav , t rm a
 v-inb (1 -cm) path far n f h n h at
 h b t m f h p is v v h h rain n
 n n cti n. T is v v an a uat ip n
 trap.

5. M r h rain mpti int an v m a v r
 n , a in -t p trap must b u s .

IMPORTANT N v r in rt rain n int a rain, v r
 n r trap. va a v an air ap b t v nh rain
 n an h vast vat r t pr v nth p sibi f
 s va b in bac -ip n int h n it n r.

iaur 1.3

Note.7(an ov)-6.592681n ov ba0.6(l)8.1()prac-6.6(t)15.3(e)-16.3(lc-6.6(e)0.6(l)17.9()ha)-6.6(enbeien-23.8()2T62681n o

1.3 Placing Performa Cv Conditioner/Filter into Operation

ft raxor vi uet pñ av b n o mpXt v, h unitiè r a t b pac v int . p rati n . v h è èt pè car fu.

1. R m v e nte vax v v r b first v pr èèina h pæstic c p s f m h f e nt, f h v r. u x f e nt, f v r up.

Note T h è v i n a èt pè v i x r v u i r t u r n i n a h c c x i n v i c a t r t v a r i u è p è t i n è. M a n u a l t a t h t c a m è a f t **COUNTERCLOCKWISE** n x u n t i x c c x i n v i c a t r p i n t è t è è i r v p è t i t i n . (è m a n u a l r a n r a t i n è c t i n è t r a b e n t e x è m a n u a l p r a t i n .)

2. R t a t c c x i n v i c a t r **COUNTERCLOCKWISE** u n t i t p i n t è è i r c t x t h t è r **BACKWASH**.
3. i x m v i a t a n v h v a t r .

- a. W h v a t r è u p p x v f f p æ c h b p a è v a x (è) i n t h è è r v i c è p è t i t i n .
- b. O p n v a t r è u p p x v a x v r è x v x t a p p è i m a t x h 1/4 p n p è t i t i n .

IMPORTANT: I f p n è t è r a p i x r t è f a r m v i a m a b è èt. I n h 1/4 p n p è t i t i n , è u è u h a r a i r è c a p i n a è x v f e m h è r a i n x n .

Conditioner

- a. W h n a x f h a i h a è b n p u r a v f e m h t a n (v a t r b è i n è t f x v èt a v i x f e m h è r a i n), è p n h m a i n è u p p x v a x a x v a .
 - b. v v a t r t r u n t è è r a i n u n t i x c a r .
 - c. T u r n f f v a t r è u p p x a n x t h u n i t è a n è t r a b u t f i v m i n u t è. I f i è v i x a x v a x t r a p p è a i r t è è c a p f e m h t a n .
4. è v a t r t è b r i n t a n (i n i t i a x x . W h a b u c t è h è è a è a p p è i m a t x 4 a x n è (15 x r è) f v a t r t è b r i n t a n . I f h t a n h a è a è a p p è t t r m a b v h b t t m è f h t a n , è v a t r u n t i x v x è a p p è i m a t x 1 i n b (25 mm) a b v h p æ t t r m .
 5. è c h è n v i t i n r i n t è p r a t i n .
 - a. W h h v a t r è u p p x v a x o m p x t x p n , c a r f u è a v a n c h c c x i n v i c a t r **COUNTERCLOCKWISE** h c n t r è f h **BRINE REFILL** p è t i t i n . è a t h i è p è t i t i n u n t i x v a t r è t a r t è t f x v h è u h h b r i n x n i n t h b r i n t a n . è n t r u n t r m r h a n t è m i n u t è.
 - b. è v a n c h c c x i n v i c a t r **COUNTERCLOCKWISE** u n t i t p i n t è t h c n t r è f h **BRINE/SLOW RINSE** p è t i t i n .

- c. W h h è n v i t i n r i n t i è p è t i t i n , b c t è i f v a t r i è b i n a è r a v n f e m h b r i n t a n . T v a t r x v x n h b r i n t a n v i x c è v r è x v x . O b è r v v a t r x v x è r a t x a è t h r m i n u t è. I f h v a t r x v x è n t r c è , è r i f i t è è u p , r f r n c h **Troubleshooting** è c t i n .

- è v a n c h c c x i n v i c a t r **COUNTERCLOCKWISE** t h **REGENERATION COMPLETE** p è t i t i n a n è r u n v a t r f e m a n a r b f a u c t u n t i x v a t r i è c x a r a n è è f t .

Filter

x i x r m v i a è c p t c a r b n

- a. f t r h a i h a è b n p u r a v f e m h t a n (v a t r b è i n è t f x v èt a v i x f e m h è r a i n) è p n h m a i n è u p p x a x v a . B a c v a è m v i a f r a m i n u m . I 15 m i n u t è r x n a r i f n c è è a r . W a t r r u n n i n a t h è r a i n è u x b c x a r . C a r b n m v i a è u x b a x v v t è è a f r a m i n u m . f 12 h u r è t a x v a i r b u b b x è t è c a p p r i t è b a c v a è i n a .
- b. f t r h b a c v a è i è o m p x t p x i n e n t e x a n è a x v i t t è a v a n c t **BACKWASH COMPLETE**.

Electrical Connection

100 VAC, 115 VAC, and 230 VAC units: R m v t v i èt t i f e m h t è v r è r è a n è t n è è r t è i t è f u x x n h . M a è u r p è v r è è u r c m a t b è h r a t i n a p r i n t è n h è n t è x B c r t a i n a v a x è v i t b è è n t è n t è è u t x t .

12 VAC: C n n c t h p x i a f h t r a n è t r m r (è u p p x è) è è n è a r c a b x t h m a t i n a è c t a t h r a r . r b t t m è f h t i m h è u è i n a . B c r t a i n h t r a n è t r m r i è è c u r a n è i è p x i a è i n t a p è v r è è u r c è f è r r c t v x a h a t i è n t è n t è è b a v a x è v i t b .

1.4 Disinfection of Water Conditioners

Th mat rix³ f³ c³ n³stru³cti³ n³ f³h m³ m³ v³at r³
 c³ n³i³t³i n³ r³ v³i³x³ t³ s³upp³rt b³act r³ia³ c³ h³ n³ r³ v³i³x³
 h³ e³ mat rix³ c³ n³taminat³ a³ v³at r³ s³upp³X³ . v³ v³ r³
 h³ n³ r³ma³ c³ n³i³t³i n³ e³ i³stina³ u³rina³ e³ i³ppina³ e³ t³ r³a³
 an³ i³stax³ati n³ i³n³i³cat³ h³ a³ v³i³ab³i³ f³ i³nf³ctina³ a³
 c³ n³i³t³i n³ r³ast³ r³i³stax³ati n³ b³ f³ r³ h³ c³ n³i³t³i n³ r³i³
 u³ e³ t³ tr³at³ p³tab³ v³at r³. In a³ i³t³i n³ u³rina³ n³ r³ma³
 u³ e³ a³ c³ n³i³t³i n³ r³ma³ b³ o³ m³ f³ u³x³ v³h³ r³o³anic
 matt³ r³in³ e³ m³ ca³ e³ v³h³ b³act³ r³a³ f³ m³h³ v³at r³
 s³upp³X³.

Th u s v r o n i t i n r b u x b i o i n f c t a f t r
i n s t a x t i n a m v i x v i r p r i c i o i n f c t i n
u r i n a r i r n m a x a n i n a f v c a s i o i n f c t i n
v h v r r a n r a t i n u x b r o m m n .

p n'ina up n h a n'iti n d, f u d, h t X. f
a n'iti n r, h t p. f i n b a n a r, a n' h
i s i n f t a n t a v a i a b X, a b. i c a n b m a' a m. n a h
f X v i n a m h. S.

Sodium or Calcium Hypochlorite

Appli mation

The material is satisfactory for use in
 present research, ethically, or not?
 Yes No

5.25% Sodium Hypochlorite

Ti ʔ ʔ Xiti n̩ ar avaiabX un^{*} r tra^{*} nam ʔ Sub
as Cx Bxab^{*}. If ʔ t̥ h̥ n̩ r ʔ Xiti n̩ ar uʔ^{*}, ʔ Sub
ash ʔ ʔ f̥ r o mm rcia xauh^{*} ri ʔ , a^{*} juʔh
ʔ . ʔ an acc^{*} r inoX.

1. a. X^{2+} et r^{3+} in 1.2 X^{2+} unc p^{3+} cubic f. t.
b. N^{3-} et r^{3+} in u b a n a r e 0. X^{2+} unc p^{3+} cubic f. t.
2. Brin tan a^{n+} it i n r e
a. Bac v^{a+} h a^{n+} it i n r a^{n+} a a^{n+} h r v^{n+} uir v^{n+}
am unt v^{n+} h p b^{n+} X^{n+} rit a^{n+} it i n t h brin v^{n+} X^{n+}
f h brin tan v^{n+} (h brin tan h^{n+} u h av
vat rin it v^{n+} p r m it h^{n+} a^{n+} it i n t b ca f r^{n+} i v^{n+} int v^{n+}
h v^{n+} (b (i)-u5.3(c n)-23.-16 v^{n+} (c24.0053 Tc6i) (r v^{n+} p)-16 v^{n+} (c)-
csr5

foot.

2

a. Back

Salt Amount

Salt amount is not variable. The faux
variable is 6 pounds (2.7 kilograms).

Table 2.2 - Suggested Settings for P4, P5, P6, P7

P5 Capacity Setting (gallons) (liters)	Reservoir Volume (gallons)				
	3 ft ³ (5)	4 ft ³ (113)	5 ft ³ (142)	6 ft ³ (170)	7 ft ³ (19)
P4 Salt Setting: (gallons) (liters)					
60 (3.9)	18 (8.2)	-	-	-	-
80 (5.2)	-	24 (10.9)	-	-	-
84 (5.4)	30 (13.6)	-	-	-	-
90 (5.8)	45 (20.4)	-	-	-	-
100 (6.4)	-	-	30 (27.2)	-	-
112 (7.2)	-	40 (18.1)	-	-	-
120 (7.7)	-	60 (27.2)	-	36 (16.3)	-
140 (9.0)	-	-	50 (22.7)	-	42 (19)
150 (9.7)	-	-	75 (34)	-	-
168 (10.8)	-	-	-	60 (27.2)	-
180 (11.6)	-	-	-	90 (40.8)	-
196 (12.7)	-	-	-	-	70 (31.8)
210 (13.6)	-	-	-	-	105 (47.6)
P6 Refill Setting: 14 inb tan = 74 (.74 gpm) 16 inb thru 21 inb tan = 130 (1.39 gpm)					
P7 Brine Draw Setting. Draw rate at 50 psi (3.5 bar) in test procedure. Draw rate at 50 psi for brine draw rate in section 4.0.					
Tank diameter	Injection	Arithmetic	P7 equals	Control	
14 in (35.5 cm)	M	105573	60	Brine	
16 in (40.6 cm)	Q	103573	80	urp	
1 in (45.7 cm)	Q	103573	80	urp	
21 in (53.3 cm)	R	1035 4	83	ar	

Level II Parameters (Table 2.4)

The v XII aram t rē ar 6h r uh 22 in TabX 2.4. T acc ēē v XII aram t rē, simuxan . uē pr ēē an'h . h DOWN ARROW (↓) an UP ARROW (↑) butt nē t rē r ē ē nē. , =numb r v iēpē .

R f rē TabX 2.4 t fin'h param t r ē ē ciat . v h ab , =numb r . ē h UP ARROW (↑) butt nē rē DOWN ARROW (↓) butt nē m v fē mē n param t r t h n t. T iēpē c c ē ē t u h h , =numb r ē ē . v n in TabX 2.1 an TabX 2.4. M n . u r ab 22, h n t numb r v iēpē bac t 1.

M nh param t r numb r . u v ant t b anā iē . n h iēpē , pr ēē LEFT (←) butt nē iēpē h . ata addition . t h at param t r . r ēē SET butt nē an'h far rē t numb r . nh iēpē starts fē ē inā . (←) u v ant t b anā h (t)15./ 2. RRO12Tj053 Tc1 56-1.2h 2 . j(h)-1ē

aram t r 22. Sp ciaX. ar nt r ath
fact r t p aram aX fi p rtin nt X cati n t r
Sp cific a n t X: M tric t r ampX. Th is
param t r X. uX n v r b b an a b h n
u t r.

Electronic Time Clock Operation

arammin a aut matic r a n rati n fr u nc
Th EX ct n ic Tim Cx ch a t t r a n rati n
pti n s Int rvaX R a n rati n an a f W
R a n rati n.

Th initiat an aut matic r a n rati n n r b h ft
pti n s mu t b b a n. Th a t m ma a b
r a n rat r manuaX b pr a in a h R a n rati n
butt n t r h r a n s.

Interval Regeneration Th EX ct n ic Tim Cx c
ma b p aram m r t r a n rat in int rvaX fup t
30 a a. Th is fatur is aram t r 14 CaX ar
Ov rr (a TabX 2.4). E ampX If 5 is p aram m
int 14 h n h a t m v r a n rat v r fiv a a
ath tim p aram m int 2.

Day of Week Regeneration Th EX ct n ic Tim
Cx c ma b p aram m r t r a n rat n a p cific
a r n p cific a a ft v Th instructi n t r
h is pti n ar f un in TabX 2.3 n pa 15.

Application

Th r rma Cv 62 C n it n r an h r rma Cv
62 iX rma b p rat a a in aX u a r tripX
a t m.

Dual and Triplex Conditioners and Filters

Th u aX an r tripX a t m r uir a iff r nt cam
h an h cam h at is u t in h in aX unit a t m.
Th a r uir an int r n n ctin aX c ut cabX.
Th is aX v h unit h at is in r a n rati n r bac va
t a in aX h r unit a n pr v nt h m f m startin a
ar a n rati n r bac va unt h first unit is finia r.
u aX an r tripX unit a u b p xmb in paraX X h
ab h r. In a muX-unit a t m h bac va vat r is
suppX b h h r unit r unit in h a t m. In a
u aX X r a t m a n r rati n mu t b aiv n h ath
unit in r vic is abX t a ti a f r vic r uir m nt a
an b abX t suppX a uffi nt bac va vat r t h
h r f X r iX it is in h bac va c cX. Th r is a
a X ct n a uir TabX 4.6, in a ct n 4.0 a a t in
u aX in a h b ic f a u aX r tripX a t m. Th is
a X ct n a uir is ba a n m ia bac va
r uir m nt a n tan iam t r.

paraX X it mu t b purb a a r muX-unit p rati n.
Th it numb r a r

uaX araX X C n it n r	N 1035J23
TripX araX X C n it n r	N 1035J25
uaX araX X iX r	N 1035J24
TripX araX X iX r	N 1035J26

it incX paraX X p rati n cam a n h p p r
int r n n ct cabX.

Manual Start Regeneration

Th t r h a n t X p r rma r a n rati n, pr a h
REGEN butt n. Th is butt n is X cat r n h f n t ft
a n t X n u pr a h **REGEN** butt n, h a n t X
p r rma a fuX a n rati n ft a n it n r.

If you press this button again more than one minute after regeneration begins, but before the regeneration is complete, a second regeneration will start when the first regeneration is finished. Th
is p a v r an n X h Th R a n Tim
R mainin a a n in cati n h ath a n
r a n rati n v iX p r r m r. V n h first
r a n rati n is a mpX t h a n n v iX p a in an
h is p a v r aX r nat b t v n X v an R a n Tim
R mainin a.

Automatic Regeneration

Programming Day of the Week Regeneration/ Backwash

Enter a float W. Ration/bac val
programminab pr **LEFT ARROW** (←)
button **DOWN ARROW** (↓) button
simulxan. us r 3 q n. The a ar h. vn ad
1, 2, 3, tc., nh ipx. Xcth a a fh
r n rati n/bac val h. u. ccur. T activat
h at a, b and h 0 to a 1. The programminab
vixb it if n. ar pr r 30 q n. If
h ifatur is u in a njuncti n th ca n ar. v rr
h ca n r. v rr tim r vixb r tath n. f
h is r n rati n/bac val .

Table 2.3 - Day of Week Regeneration/Backwash

#	Description of Parameter
---	-----------------------------

Reserve Options

The r ar t t p a. fr r v. pti n e rh i e nte X
fi r r v an e mart r r h i e rica vat r u a a
patt rn). The ar e Xct v h aram t r 15.

Fixed Reserve

M nfi r r v i e Xct v, h e nte Xmuxp e
h ma imum e t m capacit b h p rc nt vax e t
in aram t r 16 an e u e h r u x a a r e v .

Smart Reserve (water usage pattern)

The h rr e v. pti n a v h e nte X a ju e h
r r v ba e u p nh h i e rica vat r u a a patt rn
fh e t m. The nte X p e trac fh vat r
u a a f r ab a fh v an e u e h at a e
av ra u a a muxp v b 1.2 a h r r v f rh at
a . Ev r a ath Tim . f R n rati n, h e nte X
r ca x u t e h a e av ra vat r u a a . If X e h an
10% fa a e av ra vat r u a a i e u e h e nte X
vixb t b and h a e av ra . If m r h ant vic h
a e av ra i e u e h e nte X u e h actua u a a
in h r r v ca x u t i n.

Sinc a n v i n s t a t i h a e n h i e r . f vat r u a a ,
h e nte Xmuxp h p rc nt f capacit vax e tin
aram t r 16 b h t ta e t m capacit t
t r min starti n av ra f r ab a fh v .

The fact r e t vax f r 16 i e 30 M i b m an e h at
30% fh t ta e t m capacit i e u e h r h starti n
av ra f r ad a .

e aram aram t r 15 i e a e u e t e Xct M h r
h e nte X v a i t e u n t i h Tim . f R n rati n e t in
aram t r 2 t start a r n rati n, r i f h e nte X
h . u b o i n a r n rati n i m m i a t X M nh
capacit r maini n i e X e h an h r e v .

2.3 Conditioner Programming Tables

Table 2.4 - Level II Programming Performa Cv 962 Parallel Multi Tank or Single Tank Conditioner

Parameter	Description	Range of Values	Minimum Increment	Recommended Program Value	Units of Measure	Notes
6	R fix nte r	2-200	1	Selected from Table 2.2		This number is the number of rat for fix base. The number of inst. R fix v tim is ca. 100 to r fix p p ram unt. f vat r int brin tan.
7	Brin ra v rat	2-200	1	Selected from Table 2.2		This number is the number of rat rat base. The number of inj ct r si. The v tim inh ra v p site n i sh n ca. 100.
8	Bac val tim	4-60	1	14*	Minut	*Ma b a just v r appcati n
10	S v Ri (n) 15.1(6-14) 2 Ri-3X si (6-12) -15.3(2) 46 15. 7(6-14) -5(0)-240 .2(6-14) 5(4)-30.3(1 1 Tf31.0606 0 T6364 1.9 Tc0 T v (14)30.3(40					

to Section 3.2 for tail position. The programming parameter is passed.

Table 2.5 - Programming Performa Cv 962TC Electronic Time Clock Conditioner

 t. S. cti n 3.2 f r^o tai^o p^o nati n. fli p^o rammina param t r^o nti i pa .

3.0 Performa Cv Filter Valve and Controls, 962F, 962FTC, 942F

3.1 Programming and Application

This section describes the programming and application of the Performa Cv Filter Valve and Controls.

Table 3.1 - Programming Performa Cv 962F Three Cycle Filter

Parameter	Description	Range of Values	Minimum Increment	Recommended Program Value	Units of Measure	Notes
1	Afternoon time	(1-7) 1:00-12:59 M or M Metric (1-7) 0:00-23:59	(1 min) 1 Minute	Current Day and Time	hour Minute	Range of program values is 13. Afternoon =1, Morning =2, TE=3, WE =4, T =5, RI=6, T=7, T IS IS T E E T MOST I T T E IS
2	Time of day to start backwash	1:00-12:59 M or M 0:00-23:59		As required	hour Minute	Range of program values is 13
3	Program alarm			10 100	1.5 Metric	
4	Program alarm			0.5	1.5	
5	Filter capacit			As required	Metric	iv h v Xim tric capacit (na Xns) fh fix r b 6.7 Jn a.1(n)30. () TJ0 - iv h v Xim tric capacit uM (20(p3J () 12c)-Ti (Mi)--1. ()-3-3 ()-

Table 3.2 - Programming Performance Cv 962F Five Cycle Filter

Parameter	Description	Range of Values	Minimum Increment	Recommended Program Value	Units of Measurement
-----------	-------------	-----------------	-------------------	---------------------------	----------------------

Electronic Time Clock Operation

T_o initiate an automatic backwash, the operator must be in the manual position. The backwash button is the rightmost button on the control panel.

6. grammatica automatica r e a n rati n fr u n c

The Electronic Time Cycle as a Transition Point in the Interpersonal Relationship and a New Background

Interval Backwash T₁ E_x c₁ n₁ i₁ c₁ T₁ i₁ c₁ m₁ a₁
b p₁ a₁ r₁ a₁ m₁ m₁ t₁ r₁ a₁ n₁ r₁ a₁ t₁ i₁ n₁ t₁ r₁ a₁ v₁ a₁ s₁ u₁ p₁ 30
• a₁ a₁ T₁ i₁ f₁ a₁ t₁ u₁ r₁ i₁ a₁ a₁ n₁ v₁ n₁ a₁ C₁ a₁ h₁ a₁ r₁ O₁ v₁ r₁ r₁ i₁ .
It i₁ s₁ c₁ a₁ t₁ 14. E a₁ m₁ p₁ I₁ f₁ 5 i₁ s₁ p₁ a₁ r₁ a₁ m₁ m₁ i₁ n₁ t₁
14 h₁ n₁ h₁ a₁ t₁ m₁ v₁ i₁ x₁ b₁ a₁ c₁ v₁ a₁ v₁ r₁ f₁ i₁ v₁ a₁ a₁ a₁ t₁ a₁
h₁ t₁ i₁ m₁ p₁ a₁ r₁ a₁ m₁ m₁ i₁ n₁ t₁ 2.

Day of Week Backwash **Th** **Ex** **ct** **nic** **Tim** **C** **X** **c**
ma b p a ramm • t bac va n a p cific • a r
p cific • a a ft v . Th instructi n f rh is pt n
is f un in Tab X 2.3. n pa 17 .

Application

Ṭ r̥ r̥ma Cv ʝ62 C n̥iti n r̥an̥h r̥ r̥ma Cv
 ʝ62 iX r̥ma b ɹ rat ɹ̥ aɹ a ʃinaX, ɹ̥uaX r̥tripX
 ɹ̥ ʃt m.

Dual and Triplex Conditioners and Filters

Ti 'uaXan' tripX ə ət mə r 'uir a'iff r nt cam

Ti i i at514.0()0.4()-23. un4(i)-12.4(t514.5(a)-24.4(t51
T2 432.244.Xm

3.2 Mechanical

Series 942F Mechanical Control

The Series 942F mechanical control provides a mechanical timing function for fixed applications.

Figure 3.1

3.2.1 Settings

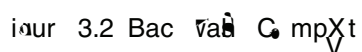
Setting the Time of Day and the Back Valve and pressure manual back valve in the 942 control.

Setting the Time of Day

Rotate the Clock dial clockwise until the pointer indicates the correct time of day. When the time of day is set, the indicator on the back valve at approximately 2:00 a.m. If it is not, the indicator on the back valve at an arrow at the time, simply from the current time of day according to the arrow on the back valve at 4:00 a.m., the Clock dial should be set to the actual current time of day.

Note: Do not rotate the Calendar Cap by hand. The Clock dial in the Calendar Cap is manual in the Calendar Cap, rotate the Clock dial clockwise

Th Bac va^h iax^h iour 3.2) o nte^h Th bac va^h tim . Wh^h In^h i^h car n^h binh B C W S COM ETE^h p^h i^h ti^h n^h , t^h at^h Th Bac va^h iax^h o^h unt r^h c^h v^h at^h X^h a^h t^h n^h fu^h x^h t^hurn^h t^h can^h c^h u^h th^h curr^h nt^h t^h ti^h na^h . Th^h r^h c^h i^h na^h i^h un^h v^h i^h x^h o^h r^h p^h ac^h . b^h d^h avi^h r^h c^h i^h na^h i^h un^h . Th^h n^h h^h pr^h v^h i^h u^h s^h t^h ti^h na^h i^h can^h c^h . Onc^h Th^h h^h avi^h r^h c^h i^h na^h i^h ar^h , Th^h n^h v^h t^h ti^h na^h ma^h b^h t^h b^h t^h at^h i^h na^h Th Bac va^h iax^h Th^h . i^h r^h . t^h ti^h na^h . Th^h numb^h r^h e^h n^h Th Bac va^h iax^h r^h pr^h e^h nt^h MN TES^h f^h bac va^h tim .



Cycle	Time (Minutes)
Bac 1	- 30
ura	0

3.3 Explanation of Parameter Values for the 962 Single and Parallel Tank Controls

This section contains a table explaining the programming parameters for the 962 electronic controls.

Number	Description of Program Values	Explanation
--------	-------------------------------	-------------

5
pa 12

1 Capacit $\frac{1}{C} = \frac{1}{C_1} + \frac{1}{C_2} + \frac{1}{C_3} + \frac{1}{C_4} + \frac{1}{C_5}$ $\frac{1}{C} = \frac{1}{10000} + \frac{1}{10000} + \frac{1}{10000} + \frac{1}{10000} + \frac{1}{10000}$ $\frac{1}{C} = \frac{1}{2500}$ $C = 2500$ $C = 2.5 \text{ mF}$

13 $\frac{1}{C} = \frac{1}{C_1} + \frac{1}{C_2} + \frac{1}{C_3} + \frac{1}{C_4} + \frac{1}{C_5}$ $\frac{1}{C} = \frac{1}{10000} + \frac{1}{10000} + \frac{1}{10000} + \frac{1}{10000} + \frac{1}{10000}$ $\frac{1}{C} = \frac{1}{2500}$ $C = 2500$ $C = 2.5 \text{ mF}$

20 $\frac{1}{C} = \frac{1}{C_1} + \frac{1}{C_2} + \frac{1}{C_3} + \frac{1}{C_4} + \frac{1}{C_5}$ $\frac{1}{C} = \frac{1}{10000} + \frac{1}{10000} + \frac{1}{10000} + \frac{1}{10000} + \frac{1}{10000}$ $\frac{1}{C} = \frac{1}{2500}$ $C = 2500$ $C = 2.5 \text{ mF}$

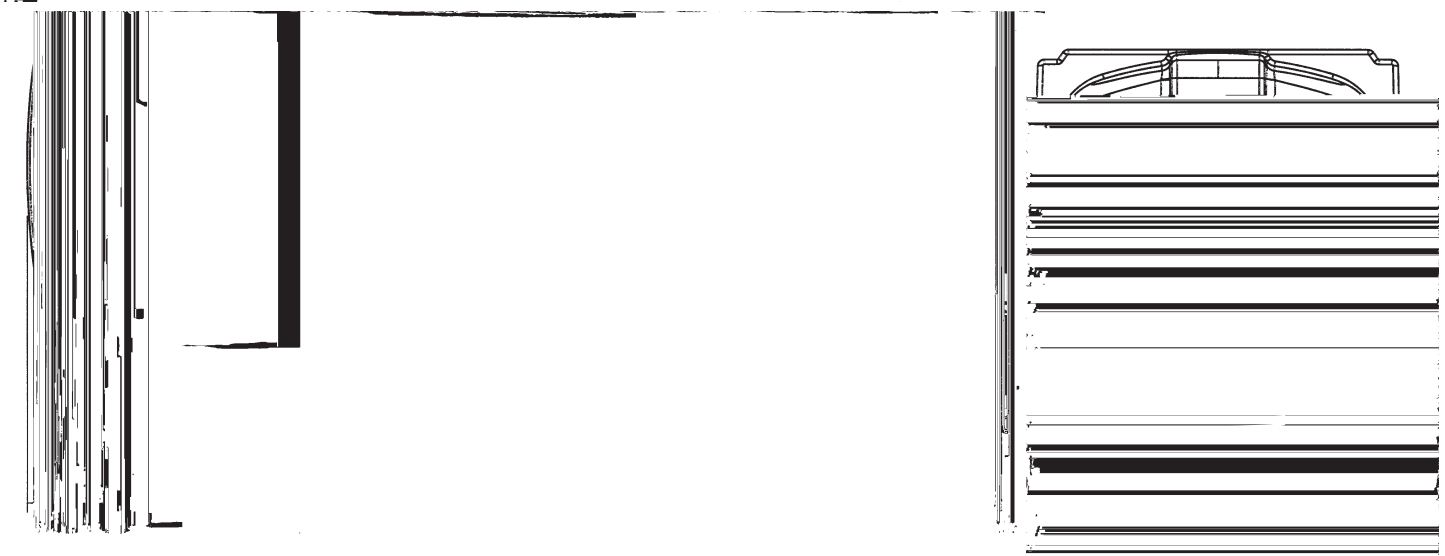
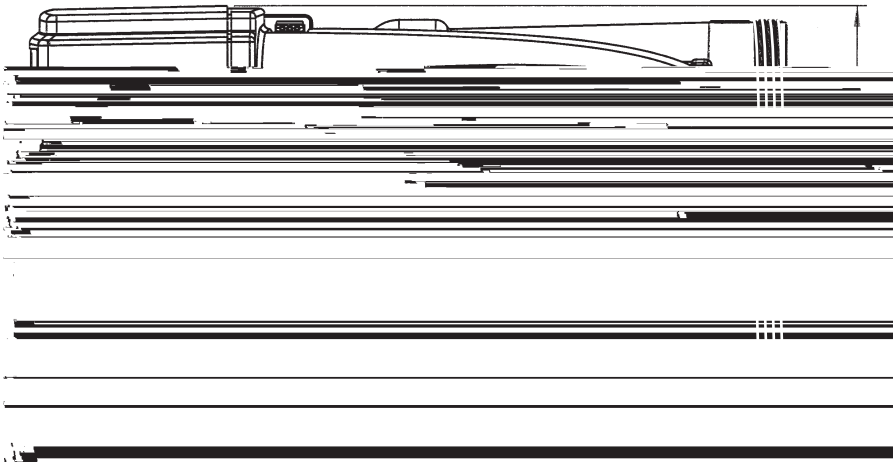
* $\frac{1}{C} = \frac{1}{C_1} + \frac{1}{C_2} + \frac{1}{C_3} + \frac{1}{C_4} + \frac{1}{C_5}$ $\frac{1}{C} = \frac{1}{10000} + \frac{1}{10000} + \frac{1}{10000} + \frac{1}{10000} + \frac{1}{10000}$ $\frac{1}{C} = \frac{1}{2500}$ $C = 2500$ $C = 2.5 \text{ mF}$

** $\frac{1}{C} = \frac{1}{C_1} + \frac{1}{C_2} + \frac{1}{C_3} + \frac{1}{C_4} + \frac{1}{C_5}$ $\frac{1}{C} = \frac{1}{10000} + \frac{1}{10000} + \frac{1}{10000} + \frac{1}{10000} + \frac{1}{10000}$ $\frac{1}{C} = \frac{1}{2500}$ $C = 2500$ $C = 2.5 \text{ mF}$

*** $\frac{1}{C} = \frac{1}{C_1} + \frac{1}{C_2} + \frac{1}{C_3} + \frac{1}{C_4} + \frac{1}{C_5}$ $\frac{1}{C} = \frac{1}{10000} + \frac{1}{10000} + \frac{1}{10000} + \frac{1}{10000} + \frac{1}{10000}$ $\frac{1}{C} = \frac{1}{2500}$ $C = 2500$ $C = 2.5 \text{ mF}$

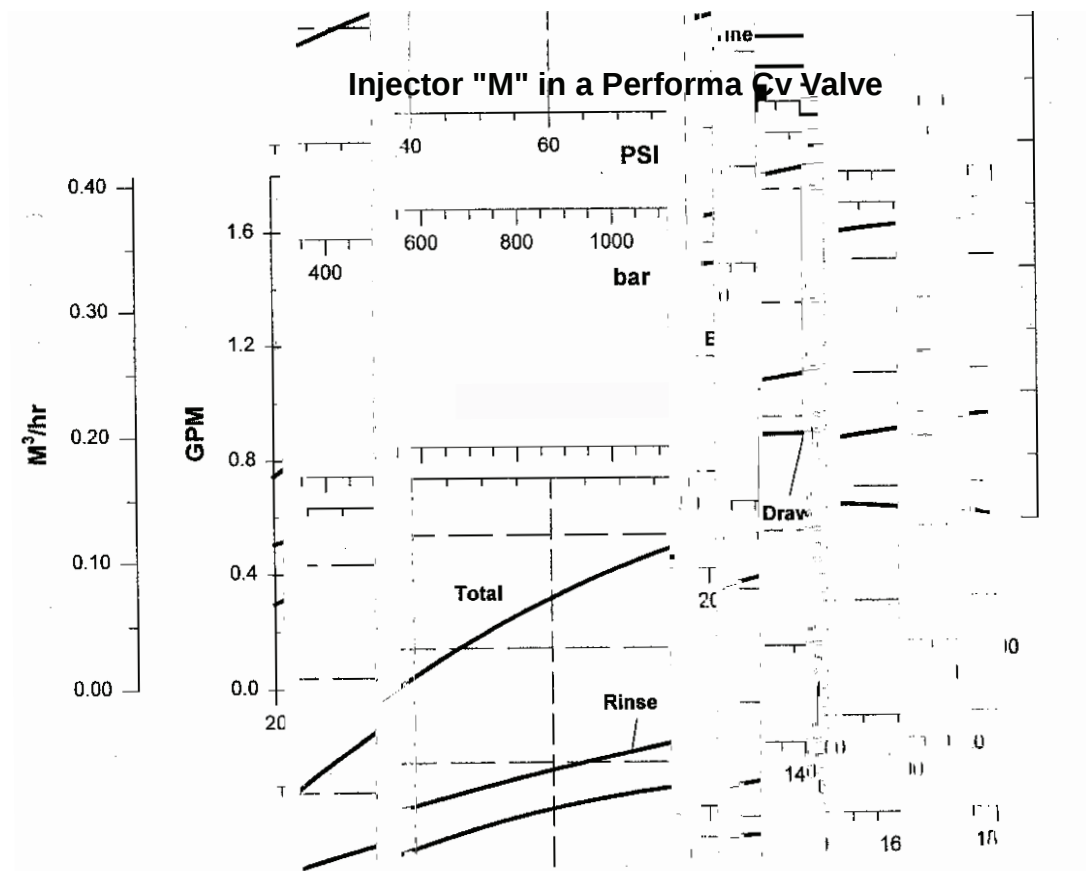
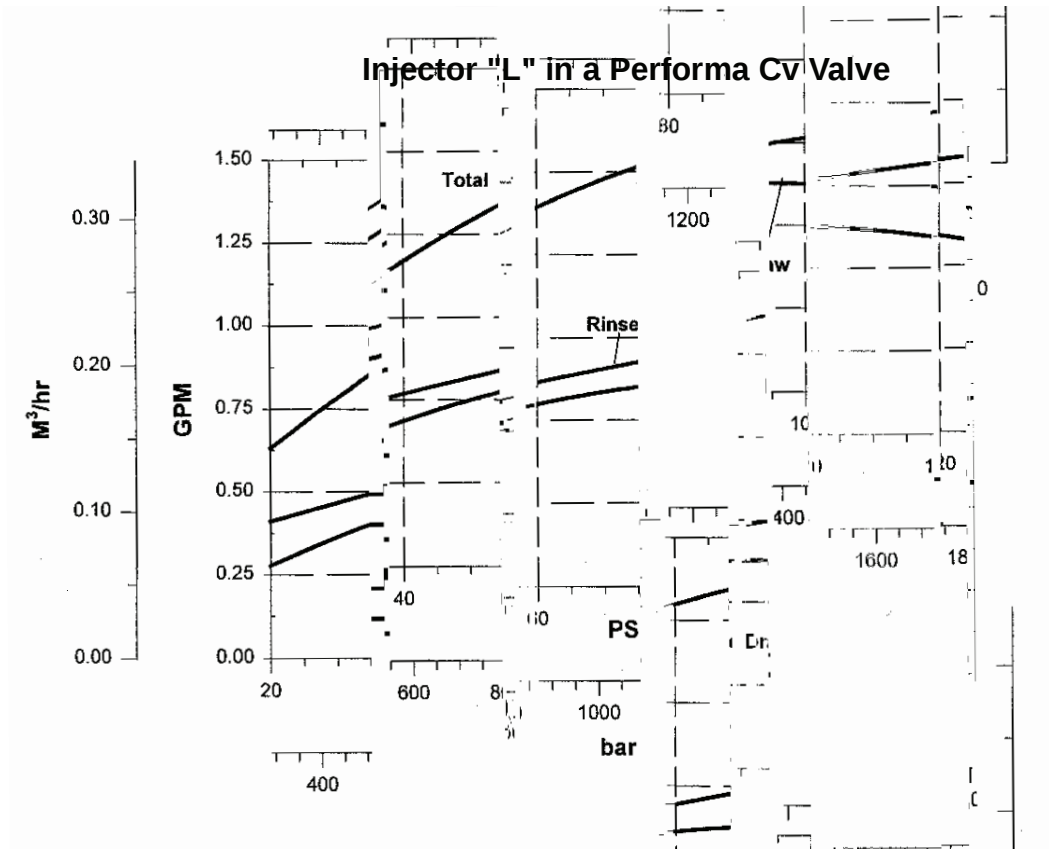
4.0 Performa Cv Performance Charts and Graphs

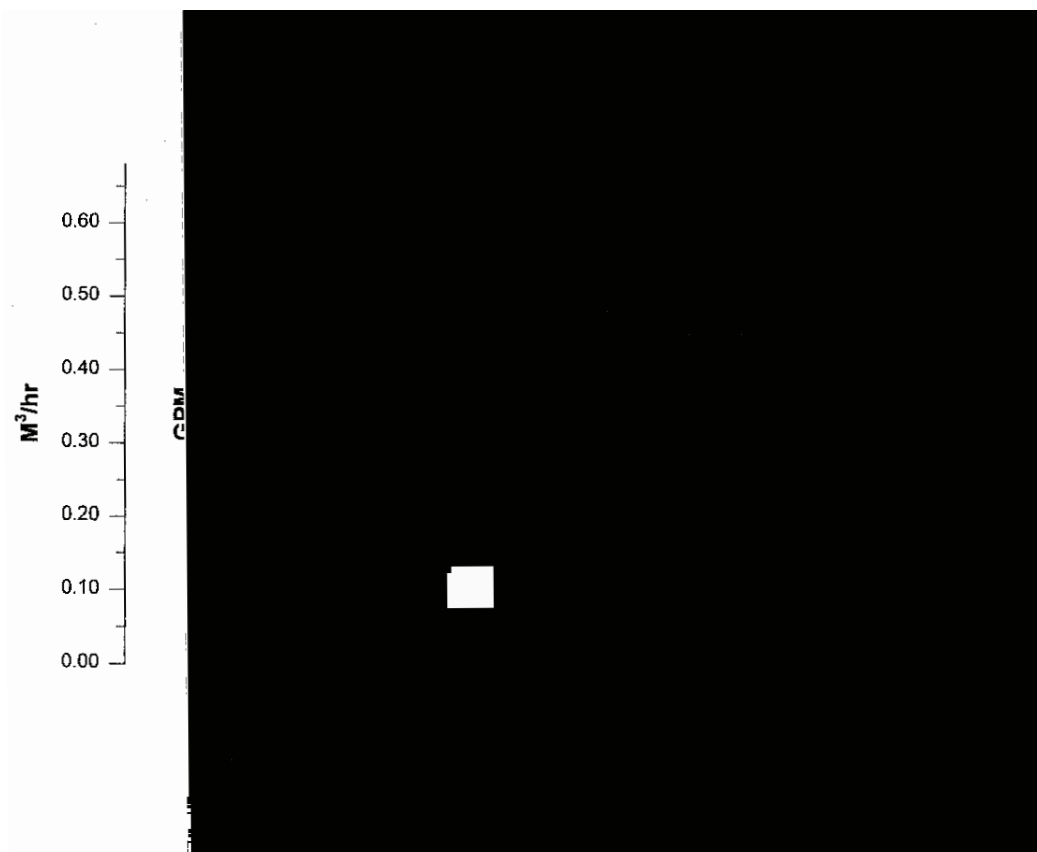
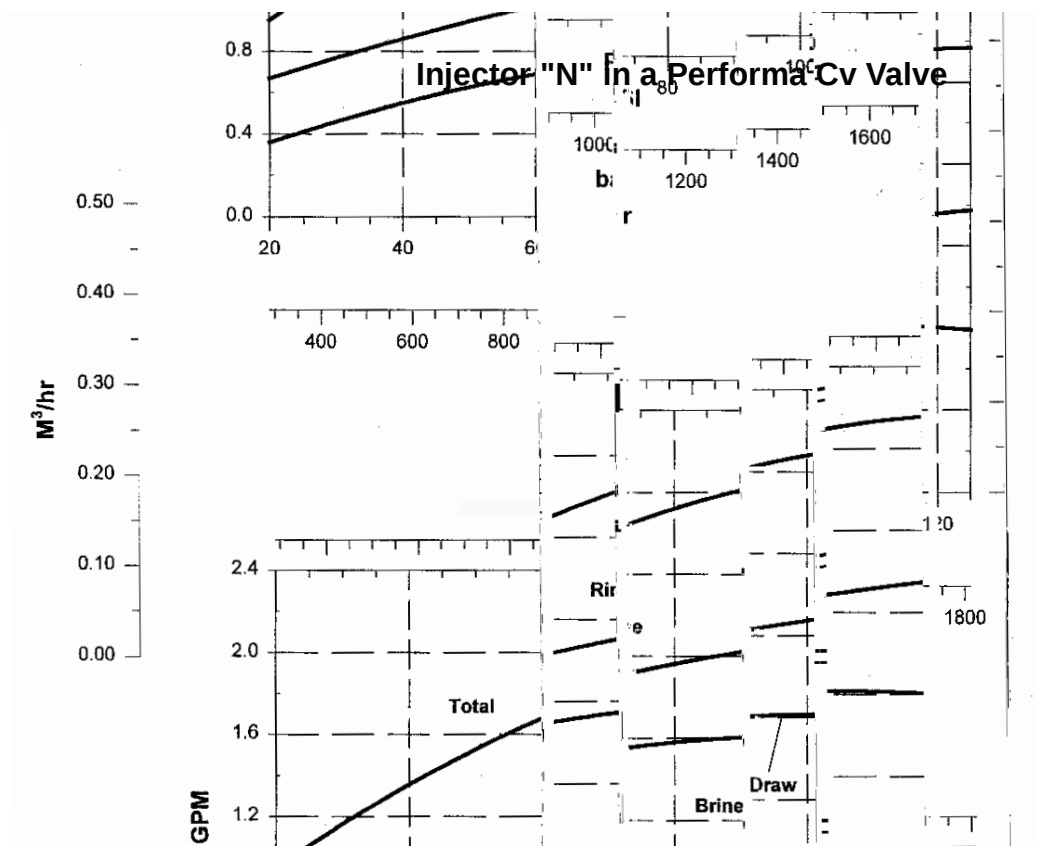
4.1 General Specification



Static Test Pressure	300 psi (20.6 bar)
Working Pressure	20-120 psi (1.3 - 8.2 bar)
Standard Electrical Rating	362 Watts, 120 V, 30 A, 12 V, 60 A, 12 V, 50 A, 12 V, 60 A, 120 Vac, 12 V, 60 A, 120 Vac, 12 V, 60 A
Electrical Code (Standard Rating)	.60-inb (1.5-m) 3- Vir 7th pX
Standard Tan Tira	2-1/2-inb max
Rider ip iam t r R uir	1.050-inb O (26.7-mm)
Rider ip nti	1/2 inb ~ 1/2 inb (13 mm ~ 13 mm) ih rh an h t p f tan
Standard C n n cti n	1-inb (25.4-mm) e pp r tub a apt r
Opti na C n n cti n	1-1/4-inb , 3/4-inb , 22-mm, an 2 -mm e pp r tub a apt r
	3/4-inb BS T, 1-inb BS T, 1-inb N T brass pip a apt r
	3/4-inb , 1-inb , 1-1/4-inb , 25-mm C VC tub a apt r
Brin in C n n cti n	3/ -inb N T max
rain in C n n cti n	3/4-inb N T max
Opti na B pass Vax	R tatin n an X, fu 1-inb p rtina, r int rc v astic
C n n cti n X, Tan a apt r	R int rc v astic
Rubb r	C mp un v r o X vat r r vic
aram C X c (Tim r)	362, 362, 362TC, 362 TC vai ab X in En X, e rman, r nb , Itaxan, Spania , Japan
	362, 362, 362TC, 362 TC vai ab X in En X, e rman, r nb , Itaxan, Spania , Japan
Brin R fix C n n cti n	0.74 an 1.3 e M
E t ma Bac va C n n cti n	5, 7, 10, 12, 15, 20 e M. B n 20 e M must b e uti e urc

4.2 Injector Curves





Injector "R" in a Performa Cv Valve

130000

4.3 Performa Cv Conditioner Performance Data

Table 4.1 - Performa Cv Injector Performance Chart

Injectors L - R Flow Rate Charts (gpm)										
PSI	L		M		N		Q		R	
	Draw	Rinse	Draw	Rinse	Draw	Rinse	Draw	Rinse	Draw	Rinse
20	0.26	0.4	0.3	0.5	0.4	0.65	0.4	0.9	0.45	1.2
30	0.3	0.45	0.4	0.55	0.45	0.75	0.5	0.95	0.5	1.3
60	0.5	0.6	0.6	0.8	0.75	1	0.8	1.4	0.9	1.75
90	0.6	0.65	0.7	0.9	0.8	1.1	0.9	1.6	1	2
100	0.6	0.7	0.7	0.9	0.8	1.6	0.95	1.7	1.1	2.2
Injectors L - R Flow Rate Charts (Lpm)										
Bar	L		M		N		Q		R	
	Draw	Rinse	Draw	Rinse	Draw	Rinse	Draw	Rinse	Draw	Rinse
1.4	0.9	1.5	1.1	1.9	1.5	2.5	1.5	3.4	1.7	4.5
2.1	1.1	1.7	1.5	2.1	1.7	2.8	1.9	3.6	1.9	4.9
4.2	1.9	2.3	2.3	3	2.8	3.8	3.1	5.3	3.4	6.6
5.6	2.3	2.5	2.6	3.2	3	4.2	3.4	6	3.8	7.6
7	2.3	2.9	2.6	3.4	3	4.9	3.6	6.8	4.2	8.3

Table 4.2 - Service and Backwash Flow Performance Data

Flow vs Pressure Drop (gpm)			Flow vs Pressure Drop (Lpm)		
PSI	Service (Cv 6.5)	Backwash (Cv 4.0)	Bar	Service (Cv 6.5)	Backwash Cv 4.0)
5	15	9	0.35	56	34
10	20	13	0.7	76	49
15	25	16	1	95	61
20	29	19	1.4	109	68
25	32	20	1.7	121	76
30	35	22	2.1	132	83

Table 4.3 - Recommended Drain Flow Controls (Backwash Anion and Cation Resin @ 55°F (12.7°C) Water Temperature

Tank Diameter Inches (mm)	Bed Area sq. ft.	Anion Resin @ 3 gpm/sq ft (m ³ /h/sq ft)	Cation Resin @ 5 gpm/ sq ft (m ³ /h/sq ft)
14 (35.6)	1.02	3 (.7)	5 (1.1)
16 (40.6)	1.3	4 (.9)	7 (1.5)
18 (45.7)	1.76	5 (1.1)	9 (1.9)
21 (53.3)	2.4	7 (1.5)	12 (2.7)

Table 4.4 - Performa Filter

Pressure Loss vs Flow (gpm)		
PSI	Service (Cv 6.5)	Backwash (Cv 5.0)
5	15	11
10	20	16
15	25	19
20	29	22
25	32	25
30	35	27
Pressure Loss vs Flow (Lpm)		
Bar	Service (Kv 5.6)	Backwash (Kv 5.8)
0.35	56	42
0.7	66	61
1	75	72
1.4	109	93
1.7	121	95
2.1	132	102

Table 4.5 - Typical Backwash Flow Requirements for Various Filter Medias (based on 55°F (12.7°C) water temperature)

		GAC/CARBON FILTER-AG, CALCITE			
		GREENSAND			
			BIRM		
				SAND, MULTI-MEDIA	
Tank Dia. inches (mm)	Bed Area sq. ft.	8 gpm/sq ft (Lpm/sq ft)	10 gpm/sq ft (Lpm/sq ft)	12 gpm/sq ft (Lpm/sq ft)	15 gpm/sq ft (Lpm/sq ft)
14 (35.6)	1.02	(30)	10 (3)	12 (45)	15 (57)
16 (40.6)	1.3	11 (42)	13 (49)	16 (61)	20 (76)
1 (45.7)	1.76	14 (53)	17 (64)	21 (79)	*26 (99)
21 (53.3)	2.4	19 (72)	24 (91)	*29 (110)	
24 (60.9)	3.14	25 (95)			

*Maximum at 25 psi or 1.72 bar pressure drop.

Table 4.6 - Performa Cv Filter Sizing Selection Guide for Dual Unit Filters.

Typical backwash flow requirements for various filter medias (based on 55°F (12.7°C) water temperature.					
		GAC/CARBON FILTER-AG, CALCITE			
		GREENSAND			
			BIRM		
				SAND, MULTI-MEDIA	
Tank Dia. inches (mm)	Bed Area sq. ft.	8 gpm/sq ft (Lpm/sq ft)	10 gpm/sq ft (Lpm/sq ft)	12 gpm/sq ft (Lpm/sq ft)	15 gpm/sq ft (Lpm/sq ft)
14 (35.6)	1.02	(30)	10 (3)	12 (45)	N R
16 (40.6)	1.3	11 (42)	13 (49)	N R	N R
18 (45.7)	1.6	*14 (53)	N R	N R	N R
21 (53.3)	2.4	N R	N R	N R	N R

* Maximum flow rate is 25 psi or 1.72 bar per square foot of filter area.

N R = Not Recommended. For more information, see the backwash flow rate chart in the back of the manual.

5.2 Preventative Maintenance

Injector Screen and Injector

Inspect and clean the injector screen and injector. If the injector screen is dirty, it will cause the engine to run poorly. Clean the injector screen and injector.

Clean the injector screen and injector.

1. Turn off the engine and disconnect the battery.
2. Remove the fuel filter and replace it with a new one.
3. Remove the fuel filter and replace it with a new one.
4. Remove the fuel filter and replace it with a new one.
5. Clean the injector screen and injector.
6. Clean the injector screen and injector.
7. Clean the injector screen and injector.
8. Clean the injector screen and injector.
9. Lubricate the O-rings and the injector screen and injector.
10. Reinstall the injector screen and injector.

IMPORTANT: Do not use any petroleum-based products to clean the injector screen and injector. Use only a mild detergent and water.

11. Turn off the engine and disconnect the battery.
12. Turn off the engine and disconnect the battery.

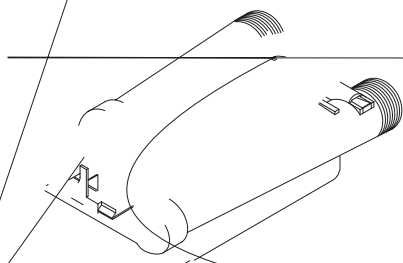


Figure 5.1

Water Meter Maintenance

The water meter is located in the basement. It is used to measure the amount of water used in the house. The water meter is located in the basement.

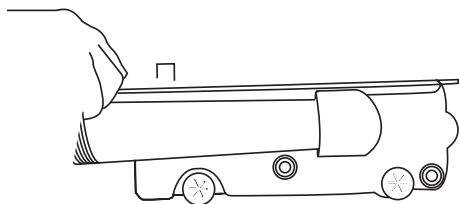
1. Turn off the water supply and remove the cover.
2. Remove the cover and inspect the meter.
3. Remove the cover and inspect the meter.
4. Remove the cover and inspect the meter.
5. Remove the cover and inspect the meter.
6. Remove the cover and inspect the meter.
7. Remove the cover and inspect the meter.
8. Remove the cover and inspect the meter.
9. Turn on the water supply and replace the cover.
10. Turn on the water supply and replace the cover.

The water meter is located in the basement. It is used to measure the amount of water used in the house. The water meter is located in the basement.

*R.V. is a trademark of the manufacturer.

5.3 Removing the Valve Assembly for Servicing

1. InpXah p v r o r'.
2. A ut, ff vat r suppX, r put b passvax (s) int.
b pass p siti n.
3. R m v o v r an' v h scr v riv r, r X v tan
pr seur b pub ins, p nvaX N. . (r arfapp r)
n o nts xas s. vn (iour 5.2).



jour 5.2

I n u s v h a x b v a x b p a s s , x s n a n
 t a b h i n x t , u t t , b r i n a n r a i n x n f u m
 v a x . I f u s i n h 1 2 6 5 b p a s s , x s n a n
 m v v a x f u m b p a s s a d v x a s s s n i n a n
 r m v i n h b r i n a n r a i n x n s .

Inscripțiunile (a) sunt relexice vizibile, iar (b) sunt relexice
fantomă.

- The process of controlling variables in a process.

5.4 Removing the Control

CompXt h f X vlna st p t r m v h j60 r 2 ft
c ntr X f r v r vlna

1. $\text{Inp} \times \text{oh} \quad \text{vax} \times \text{m} \quad \text{unt trans} \times \text{rm} \quad \text{r}.$
2. $\text{ut} \times \text{ffh} \quad \text{vat} \times \text{r} \times \text{supp} \times \text{r} \times \text{puth} \quad \text{b} \times \text{pass} \times \text{vax} \quad (\text{e})$
 $\text{int} \times \text{b} \times \text{pass} \times \text{p} \times \text{iti} \times \text{n}.$
3. $\text{R} \times \text{m} \times \text{v} \times \text{h} \quad \text{r} \times \text{ar} \times \text{v} \times \text{rb} \quad \text{pr} \times \text{e} \times \text{sin} \times \text{oh} \quad \text{t} \times \text{tab} \times \text{e}$
 $\text{p} \times \text{vi} \times \text{oh} \quad \text{v} \times \text{r} \quad \text{iour} \quad 5.3. \quad \text{ifh} \times \text{f} \times \text{nt} \times \text{f}$
 $\text{h} \times \text{v} \times \text{ran} \times \text{r} \times \text{m} \times \text{v} \times \text{t} \quad \text{p} \times \text{e} \times \text{h} \times \text{vax} \quad \text{b} \times \text{oh}.$

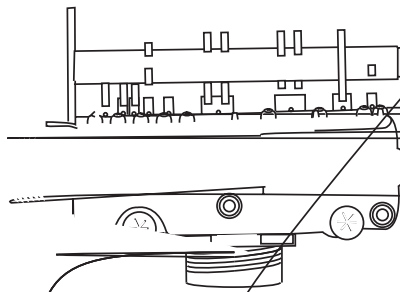
jour 5.3

4. R v 3 st m pr 33ur b p ninah Bac val
rain Vax (t 3 v rh vax bac f m h
Q ntr X rh a scr v riv r, iaur 5.4.

jour 5.4

5. T r m v h cam̃ aft. r t r instaxit, h ar̃ v
 . nh r ar. fh cam̃ aft must b p̃ intina ath
 x̃n . nh r arh . . p̃ fh t p̃ p̃ at . T̃ is̃ ccure
 n nh c c̃x iñ icat r̃ is̃ tat̃ . ṽ h r fix
 p̃ it̃ n. r̃ s̃ s̃ . ṽn. nh bac . fh cam̃ aft t̃
 . is̃ ñaa it f̃ m̃ h r arh . . p̃ fh t p̃ p̃ at ,
 iaur 5.5.
 s̃ x̃ h cam̃ aft bac t̃ . is̃ ñaa it f̃ m̃ h
 tim r. iaur 5.6.

jour 5.5



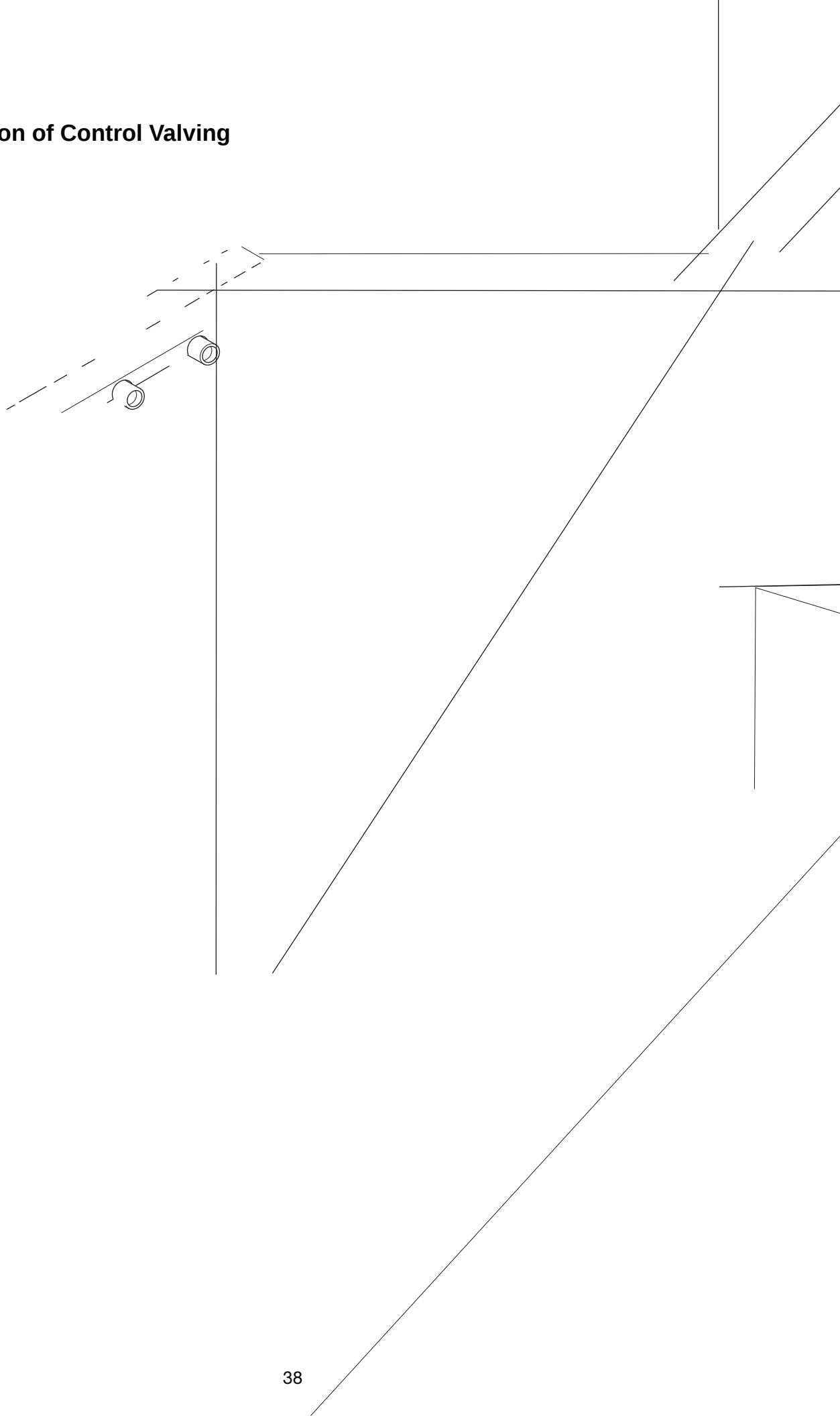
iaur 5.6

6. is ann cth turbin p b f mlt turbin
a b mbX.

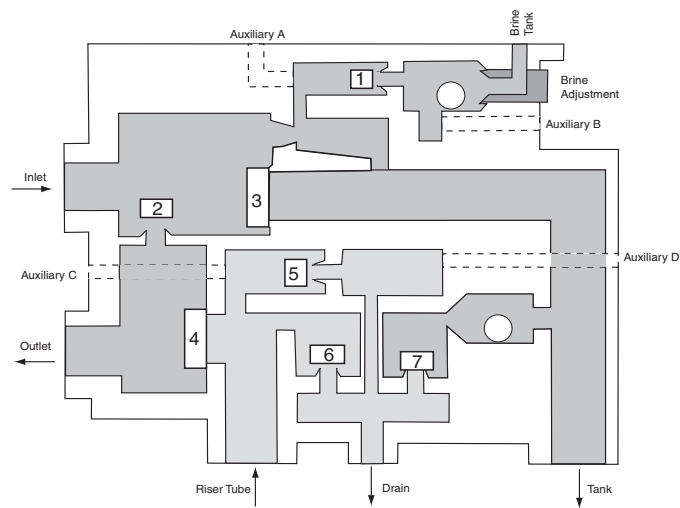
7. ifh o nte X ffh vaX , iaur 5.7. T r pXc
h o nte X r v r h a v p c ur N . t h at
h cam a ft n . e t b p . i t i n . o r r c t X
b f r it can b in e r t i n t h bac . f h o nte X
T r i s a X c a t i n a a r e v . n h cam a ft . e i t i n
h a r e v . n h t p . f h a ft a n . e X h
cam a ft i n t h o nte X u a up . n h n . f h
cam a ft , f u l t e t f m h t i m r , e n a p p i n a i t i n t
p a c .

iaur 5.7

5.5 Identification of Control Valving

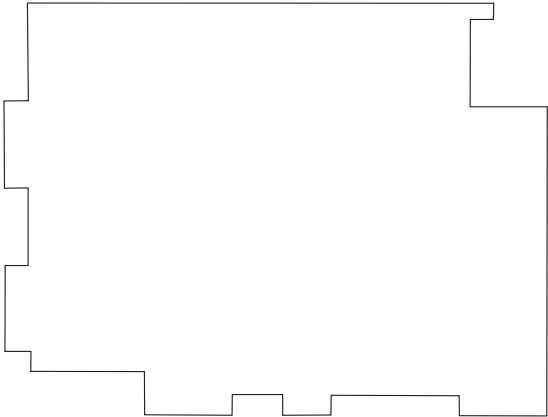


3 Brine/Slow Rinse Position



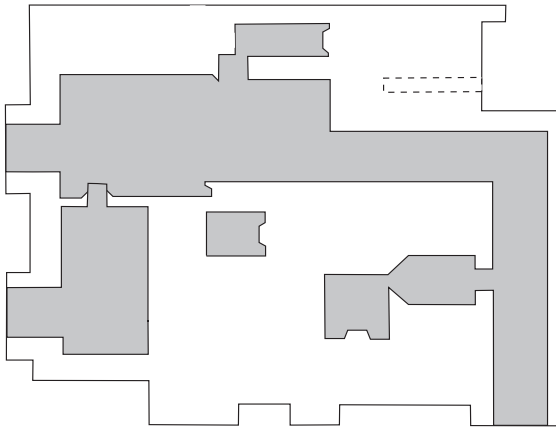
Name	Valve No.
Brine	1 - Open
By-Pass	2 - Open
Inlet	3 - Closed
Outlet	4 - Closed
2nd Tank Top	5 - Open
Purge	6 - Open
Backwash	7 - Closed

4 Fast Rinse Position



5.8 Performa Cv Filter Flow Diagrams

1 Backwash Position



2 Fast Rinse Position

5.9 Troubleshooting

The following table provides information on the most common problems and their causes. For more information, see the **Replacement Parts** section of the manual.

IMPORTANT: The service personnel should always wear the appropriate personal protective equipment (PPE) when working on the machine. The service personnel should always use the correct tools and techniques to avoid injury or damage to the machine.

Valve Troubleshooting

Problem	Possible Cause	Solution
1. The engine will not start.	a. Fuel valve is closed. b. Restricted fuel line. c. Inj. pump is faulty. d. Inj. pump is not working. e. Valve (2 and 4) is not working.	a. Start pump to maintain 30 psi at the inlet. b. Remove restricted line. c. Clean inj. pump and injectors. d. Replace inj. pump. e. Remove fuel line matter and clean the injectors.
2. Brin. tank is empty.	a. Brin. valve (1) is not working. b. Inj. pump is not working. c. Valve (3 and 4) is not working. d. Inj. pump is not working.	f. Replace inj. pump. a. Manual pump rat. valve is not working. b. Remove variable valve and clean the injectors. c. Clean the fuel line matter and clean the injectors. d. Clean the fuel line matter and clean the injectors.
3. The engine is not running properly.	a. Inaccurate timing. b. Fuel line matter in the engine causing inaccurate timing.	a. Correct timing. b. Remove variable valve and clean the injectors.
4. Intermittent irregular brin.	a. Fuel valve is closed. b. Fuel valve is not working.	c. Replace fuel valve. a. Start pump to maintain 30 psi at the inlet.
5. No air flow to the engine.	a. Inj. pump is not working. b. No air flow in the tank. c. Inj. pump is not working.	b. Replace inj. pump. a. Clean the fuel line matter and clean the injectors.
6. The engine is not running properly.	a. Inj. pump is not working. b. Fuel line matter in the engine causing inaccurate timing.	a. Replace inj. pump. b. Remove variable valve and clean the injectors.
7. The engine is not running properly.	a. Fuel line matter in the engine causing inaccurate timing. b. Valve is not working.	a. Manual pump rat. valve is not working. b. Replace valve.

962 Control Troubleshooting

Alarms

The Model 962 continuously monitors the status of the alarm system. If an alarm is initiated, the alarm is a built-in feature of the system. The alarm is a built-in feature of the system.

The alarm system is a built-in feature of the system. The alarm system is a built-in feature of the system. The alarm system is a built-in feature of the system. The alarm system is a built-in feature of the system.

Model 960 Alarms

Indication	Description	Cause	Solution
Err1	Excessive air	Control system is not working properly.	Reset the alarm system. If the alarm system is not working properly, the alarm system is not working properly.
Err2	Impulse start of rotation (mit) with control unit.	Valve cannot be opened manually. The valve cannot be opened manually. The valve cannot be opened manually.	Reset the alarm system. If the alarm system is not working properly, the alarm system is not working properly.
Err3	Impulse finish of rotation (mit) with control unit.	Valve cannot be opened manually. The valve cannot be opened manually. The valve cannot be opened manually.	Reset the alarm system. If the alarm system is not working properly, the alarm system is not working properly.
Err4	Impulse rotation (mit) with control unit.	On the alarm system, the valve cannot be opened manually. The valve cannot be opened manually. The valve cannot be opened manually.	Reset the alarm system. If the alarm system is not working properly, the alarm system is not working properly.

Problem

6. N. Vat r f. V. is p. M n
Vat r is f. V. in a (G. n. V. V.
n. t b. n.).

7. G. n. t. V. is p. V. is f. n. at
R. n. Tim R. main in a.
. G. n. t. V. n. rat. V. ath
V. n. a. tim. V. f. a.

Possible Cause

- B. p. a. s. s. v. a. in b. p. a. s. s. p. s. i. t. n.
- M. t. r. p. b. V. is G. n. n. c. t. V. r. n. t. f. u. V.
G. n. n. c. t. V. t. m. t. h. u. s. i. n. a.
- R. s. t. r. i. c. t. V. m. t. r. t. u. r. b. i. n. V. t. a. t. i. n. V. u. t.
V. r. i. o. n. m. a. t. r. i. a. in m. t. r.!

- V. f. c. t. i. v. m. t. r. p. b.
- . f. c. t. i. v. c. i. r. c. u. i. t. b. a. r.

- B. a. c. t. b. a. c. r. a. n. r. a. t. i. n. V. r.
r. V. u. s. t. V.

- V. r. a. u. t. a. V.
- T. i. m. V. f. a. V. t. i. n. V. r. r. c. t. V.
- T. i. m. V. f. r. a. n. r. a. t. i. n. V. t. i. n. V. r. r. c. t. V.

Solution

- L. i. f. t. b. p. a. s. s. v. a. in t. V. r. v. i. c. p. s. i. t. n.
- u. s. i. n. V. r. t. p. b. in t. m. t. h. u. s. i. n. a.

- R. m. v. m. t. h. u. s. i. n. a, fr. up. t. u. r. b. i. n. a. n. V.
f. u. V. h. c. x. a. n. V. a. t. r. T. u. r. b. i. n. V. u. V. s. p. i. n.
fr. V. If. n. t. r. f. r. t. h. W. a. t. r. M. t. r.
M. a. i. n. t. n. a. n. c. V. c. t. i. n.

- R. p. a. c. G. n. t. V.
- . R. p. a. c. G. n. t. V.

- R. f. r. t. h. M. a. n. u. a. l. R. a. n. r. a. t. i. n. V. c. t. i. n.

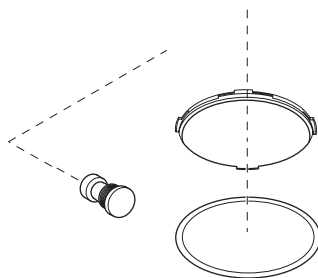
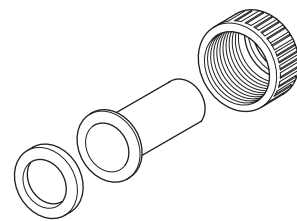
- R. V. t. t. i. m. V. f. a. V. G. r. r. c. t. t. i. m. V. f. a.
- R. V. t. t. i. m. V. f. a. V. G. r. r. c. t. t. i. m. V. f. a.

- R. V. t. t. i. m. V. 6(t)-30.2 V. 2(V. f. s. 0t)-31.1(i)-30.-25.4224.1(V.)-30.3

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6.0 Performa Cv Parts

6.1 Valve Component Exploded View



6.2 Parts List

Part				Part			
Code	No.	Description	Qty.	Code	No.	Description	Qty.
1	1000413	rf rma Cv G n'iti n r VaX 33 , 7%	1	10	1010423	O-Ring	1
		X V G nte X		11	1035622	Tan Ring	1
	100041	rf rma Cv iX r VaX 33 , 7% X V G nte X		12		Ximbin apt r it	1
2	1035611	62 G n'iti n r Cam 33 , Sin X nit	1	1001606	3/4-inb C pp r Tub apt r it		
	1030377	62 G n'iti n r Cam 33 , MuX nit		1001670	1-inb C pp r Tub apt r it		
	10303 0	62 iX r Cam 33 , Sin X nit		1041210	1-1/4-inb C pp r Tub apt r it		
	10303 4	62 iX r Cam 33 , MuX nit		100160	22-mm C pp r Tub apt r it		
3		rain C nte X 33 mbX	1	1001603	2 -mm C pp r Tub apt r it		
	1030355	C 33 , 5 apm		1001613	3/4-inb C VC Tub apt r it		
	1030356	C 33 , 6 apm		1001614	1-inb C VC Tub apt r it		
	1030357	C 33 , 7 apm		1001615	25-mm C VC Tub apt r it		
	103035	C 33 , apm		1001763	3/4-inb N T Xstic ip apt r it		
	1030353	C 33 , 3 apm		1001603	1-inb N T Xstic ip apt r it		
	1030360	C 33 , 10 apm		1001604	3/4-inb BS T Xstic ip apt r it		

N . t . n . n

6.3 Performa Cv Controls

