

- I: S373-8 H07>: T60 =.0442.0 >20 3* 360 50-?63 *, 360 ,92-> 7<*B0 360 =*-+3 *, / 0742.0 / 0+3: I+ 7 89*40> 4;430 / 4373-8 607> -4 01279 *+ <*36 4->04 *, 360 =2 / =:
- J: S283-*+ H07>: T60 60-?63 *, ,92-> 42.,780 7<*B0 360 80+30.9+0 *, 360 =2 / = *+ 360 4283-*+ 4->0:
- I: S;430 / E,,083: A =60+* / 0+*+ 3673 87+ 8.0730 2+>04.0> *. 2+=.0>-830> 8*+>-3-*+4 3673 87240 .0>280> 87=78-3-04 + 799 *. =7.3 *, 7 4;430 / :
- !: S;430 / E,,083 F783*.4: A99* 57+804 240> 3* 879829730 7 .0>283-*+ *, 360 =0.,* . / 7+80 .73+?4 *, 7 ,7+ 560+ +437990> 2+>0. 8*+>-3-*+4 >.,0.0+3 ,. * / 36*40 =.040+30> 560+ 360 ,7+ 574 =0.,* . / 7+80 30430>:
- M: TAB: T043+? 7>|243+? 7+> <797+8+?:
- N: TAB S=08-79-43: A+ 0+3-3; 0+?7?0> 3* =0.,* . / TAB W*.C:
- O: T043+? A>|243+? 7+> B797+8+? "TAB# A?0+3: T60 0+3-3; .04=*+4-<90 ,* . =0.,* . / -+? 7+> .0=* .3+? 360 TAB =.*80>2.04:
- P: T0. / -+79: A =*-+3 560.0 360 8*+3. *990> / 0>-2 / ",92-> *. 0+0.0?;# 0+30.4 *. 907B04 360 >43.-<23-*+ 4;430 / :

1:\$ PREINSTA! !ATION MEETINGS

- A: TAB C*+,0.0+80: I, .0120430> <; 360 O5+0. 8*+>283 7 TAB 8*+,0.0+80 73 =.*!083 4-30 7,30. 7==.*B79 *, 360 TAB 43.730?-04 7+> =.*80>2.04 =97+ 3* >0B09*= 7 / 23279 2+>0.437+>-+? *, 360 >037-94: P.*B->0 7 / -+ / 2 / *, 1' >7;4| 7>B7+80 +*3-80 *, 4860>290> / 003+? 3- / 0 7+> 9*873-*+:
- 1: M+- / 2 / A?0+>7 l30 / 4:
 - 7: T60 C*+3.783 D*82 / 0+34 0E7 / -+73-*+ .0=* .3:
 - <: T60 TAB =97+:
 - 8: N00>4 ,* . 8** .->+73-*+ 7+> 8**=0.73-*+ *, 3.7>04 7+> 42<8*+3.783*.4:

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1:7 FIELD CONDITIONS

A: F200 O5+0. O882=7+8;: O5+0. 5-00 *882=; 360 4-30 7+> 0E-43+? <2-9>-+? >2.-+? 0+3-.0 TAB =0.-*>:

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D: W->*54 7+> >*.4 87+ <0 80*40> 4* -+>8730> 8*+>3-*+4 , *. 4;430 / *=0.73-*+4 87+ <0 / 03:

\$\$ GENERAL PROCEDURES FOR TESTING AND BALANCING

A: PO., *. / 3043+? 7+> <707+8+? =. *80>2.04 *+ 0786 4;430 / 788* .>+? 3* 360 =. *80>2.04 8*+37+0> + AABC;4 LN73-*+70 S37+>7.>4 , *. T*370 S;430 / B707+80L *. NEBB;4 LP.*80>2.70 S37+>7.>4 , *. T043+? A>1243+? 7+> B707+8+? *, E+B.*+ / 0+370 S;430 / 4L 7+> + 36-4 S083-*+:

1: C* / =0; 5-36 .012-.0 / 0+34 + ASHRAE 62:1(2007 S083-*+ 7:2:2 LA-. B707+8+?:L

B: C23 +42073-*+ >2834 ==04 7+> 012=/ 0+3 87<-+034 , *. +4370073-*+ *, 3043 6*04 7+> =.* <04 3* 360 0E30+3 +080447.; , *. TAB =.*80>2.04 7+> >283 3043 6*00 , -33+?4 46700 <0 =.*B->0> 560.0

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7: A>h243 360 ,7+ 7+> <797+80 360 .032.+(7-. >2834 7+> -+9034 360 47 / 0 74 >048.-<0> , * .
8*+437+3(B*92 / 0 7-. 4;430 / 4:

7: M0742.0 4373-8 =.0442.0 73 360 / *43 8.-3-879 30. / -+79 2+3 7+> 7>h243 360 4373-8(=.0442.0
8*+3.*90. 73 360 / 7+ 42==9;(7-. 40+4+? 4373-*+ 3* 0+42.0 3673 7>012730 4373-8 =.0442.0 -4
/ 7-+37+0> 73 360 / *43 8.-3-879 2+3:

D: R08*.> ,+79 ,7+(=0., *. / 7+80 >737:

C: P.0442.0(D0=0+>0+3 V7.-7<90(A.(V*92 / 0 S;430 / 4 5-36 D-B0.4-3;: A,30. 360 ,7+ 4;430 / 4 67B0
<00+ 7>h2430> 7>h243 360 B7.-7<90(7-. (B*92 / 0 4;430 / 4 74 , *99* 54:

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\$.D PROCEDURES FOR CONSTANT FLOW HYDRONIC SYSTEMS

A: $A = 2 / (4 \cdot B) \cdot C > 0.4 \cdot D + E / :$

1: $M = 0.5730 \cdot C^5 :$

7: $P = 4 \cdot B + 7 \cdot B^4 \cdot C^5 \cdot 2 \cdot 6 \cdot 8^4 :$

<: $M = 0.5 < ; / 7 + C^5 / 0.30 \cdot - + 4370 > :$

8: $I, / 7 + C^5 / 0.30 \cdot -4 + 3 \cdot 4370 > > 0.30 / +0 \cdot C^5 < ; = 2 / = TDH \cdot 0.867 + ?0. = .0442.0 > \cdot = :$

2: $M = 0.5730 \cdot C^5 = TDH \cdot 74 \cdot C^5 :$

7: $M = 0.5730 \cdot C^5 > 4867.70 = .0442.0 > .0830 ; 73 \cdot 360 = 2 / = \cdot 2 \cdot 0.3 \cdot C^5 + ?0 \cdot - + > 4867.70 = -0$

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- 1: R0(/ 0742.0 7+> 8*+,-. / 3673 3*379 5730. ,9*5 -4 5-36+ >04-?+:
2: R0(/ 0742.0 ,+79 =2 / =4J *=0.73+? >737 TDH B*934 7 / =4 7+> 4373-8 =. *, -90:
\$: M7.C ,+79 4033+74:
' : V0.-,; 3673 / 0 / *. ; 43*=4 67B0 <00+ 403:

\$.& PROCEDURES FOR VARIAB!E(F!OW HYDRONIC SYSTEMS

- A: B797+80 4;430 / 4 5-36 723* / 73-8 35*(7+> 36.00(57; 8*+3.*9 B79B04 <; 4033+? 4;430 / 4 73 / 7E- / 2 / ,9*5 36.*2?6 6073(0E867+?0 30. / -+794 7+> =.*800> 74 4=08,-,0> 7<*B0 + 4083-*+ \$:7 ,*. 6;>.*+8 4;430 / 4:

- \$.10 S;430 / 4 -+437990> 5-36 =.0442.0 -+>0=0+>0+3 8*+3.*9 B79B04 46799 +*3 .012-.0 ,299 6;>.*+8 4;430 / <797+8-+?: F9*5 46799 <0 B0.-,0> ,*. 360 =.0442.0 -+>0=0+>0+3 B79B0 7440 / <9; "B79B0 7+> 783273*. 8* / <-+73-*+## ,*. ,09> 8*+>-3-*+4 24+? 360 =.0442.0 -+>0=0+>0+3 8*+3.*9 B79B0 / 7+2,7832.0.44 >*82 / 0+30> =.*80>2.0 ,*. (063 7063 0063 *, 360 3*379 -+437990> =.*>283: EE783 9*873-*+4 *, 30430> =.*>283 3* <0 8**.>-+730> 5-36 360 >.75+?4:

\$.11 PROCEDURES FOR PRIMARY(SECONDARY HYDRONIC SYSTEMS

- A: B797+80 360 =.- / 7. ; 8-.82-3 ,9*5 ,-.43:

- B: B797+80 360 408*+>7. ; 8-.82-34 7,30. 360 =.- / 7. ; 8-.82-34 7.0 8* / =9030:

- C: A>4243 =2 / =4 3* >09B0. 3*379 >04-?+ ?= / :

- 1: M0742.0 3*379 5730. ,9*5:

7: P*4-3-*+ B79B04 ,*. ,299 ,9*5 36.*2?6 8*-94:

<: M0742.0 ,9*5 <; / 7+ ,9*5 / 030. -, -+437990>:

8: I, / 7+ ,9*5 / 030. -4 +*3 -+437990> >030. / +0 ,9*5 <; =2 / = TDH *. 0E867+?0. =.0442.0 >.*=:

- 2: M0742.0 =2 / = TDH 74 ,*99*54:

7: *200742+00-43DH+6-686742-0=0.083

=.-*. 3 7#B-#F!#F> PpUq_X9G_ " ` pE_ t pO9RVOM^UaAME_ p5cN#19 i%w q2Epq2EG q2EPN)N_X

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\$:1' PROCEDURES FOR MOTORS

A: M*3*.4 1/2 HP 7+> !7.?0.: T043 73 ,+79 <797+80> 8*+>-3*+4 7+> .08* .> 360 , *99* 5-+? >737:

- 1: M7+2,7832.0.14 +7 / 0 / *>09 +2 / <0. 7+> 40.-79 +2 / <0.:
- 2: M*3*. 6*.40=* 50. .73-+?:
- \$: M*3*. . = / :
- ': P6740 7+> 60.3G:
- %: N7 / 0=9730 7+> / 0742.0> B*937?0 0786 =6740:
- 6: N7 / 0=9730 7+> / 0742.0> 7 / =0.7?0 0786 =6740:
- 7: S37.30. 4-G0 7+> 360. / 79(=. *3083-*+(090 / 0+3 .73-+?:
- D: S0.B-80 ,783*. 7+> ,.7 / 0 4-G0:

B: M*3*.4 D.-B0+ <; V7.-7<90(F.0120+8; C*+3. *990.4: T043 / 7+279 <;=744 *, 8*+3. *990. 3* =. *B0
=. * =0. * =0.73-*+:

\$:1% PROCEDURES FOR COOLING TOWERS

A: B797+80 3*379 8*+>0+40.(5730. ,9* 54 3* 3* 50.4: M0742.0 7+> .08* .> 360 , *99* 5-+? >737:

- 1: C*+>0+40.(5730. ,9* 5 3* 0786 8099 *, 360 8**9-+? 3* 50.:
- 2: E+30.-+?(7+> 907B-+?(5730. 30 / =0.732.04:

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B: S074*+7% P0.*>4: I, -+3-7% TAB =.*80>2.04 50.0 +*3 =0., * / 0> >2.-+? +07.(=07C 42 / / 0. 7+>
5-+30. 8*+>-3-*+4 =0., * / 7>>-3-*+7% TAB >2.-+? +07.(=07C 42 / / 0. 7+> 5-+30. 8*+>-3-*+4:

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