



CIR 3300 & CIR 3400

Steam Conditioning | Turbine Bypass

Effective. Efficient





CIRCOR is a market - leading, global provider of integrated flow control solutions specializing in the manufacture of highly engineered valves, pumps, fittings, pipeline products & services and associated products, for critical and severe service applications in the oil and gas power generation and process industries.

Comprised of best-in - class, historically significant product brands, we consistently satisfy our customers mission - critical application needs by utilizing advanced technologies that can with stand extreme temperature and pressure from land - based to sub- sea and in between.

CIR 3300 & CIR 3400 valve range are precisely design as per process to serve global markets dealing with superheated steam and process gases



Midstream
Oil and Gas



Power
Generation



Downstream
Oil and Gas



General Industry



Renewables



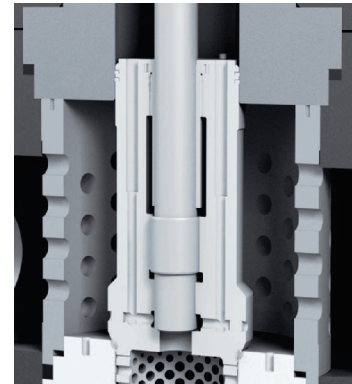
Processing

For OEM's, EPC firms, Power, Industrial Energy Producers, Process industries, who need a cost effective, reliably performing Steam Conditioning & Turbine Bypass valve solution, the CIR 3300 & CIR 3400 series of Severe Service Control Valve System can best suit their process needs with minimized maintenance and installed cost. The CIR 3300 & CIR 3400 products offers excellent control using various trim/ desuperheating options and multiple actuation options in a competitive package. Decades of demonstrated performance across various industries & sectors has made these valves stand on top amongst its competitors in the market.

FEATURES

PILOT BALANCED PLUG

The Pilot Balanced trim design offers the excellent shutoff properties of an unbalanced design and requires less actuator thrust as a balanced design



PiB Plug

CONTROLLABILITY

CIR 3300 & 3400 offers excellent controllability with high rangeability which is a vital requirement for severe service valves. It's ability to control wide range of crucial flow from cold startup through full flow aids in improving plant's efficiency and longer life of valve assets.

NOISE / VIBRATION CONTROL AT START UP

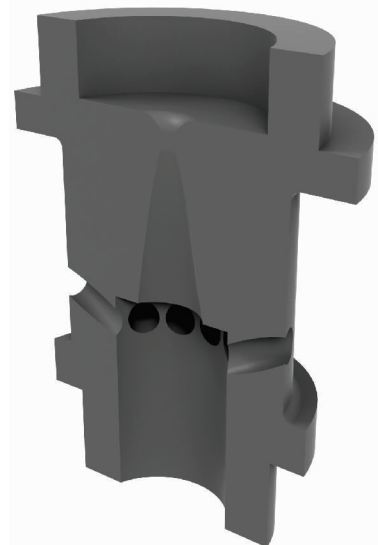
These are specially design with characterized trims to reduce and desirable vibrations and noise at startup mode, thereby improving plant's life.

QUICK, EASY MAINTENANCE

Reducing downtime and maintenance is critical in any facility. With proper training the CIR 3300 & CIR 3400 valves can be disassembled and reassembled on the same day.

STEAM ASSIST ATOMIZATION

The CIR 3400 valves can be offered with steam assist De-Laval nozzle option which requires shorter downstream pipe length to attain full atomization. Our steam atomization technology aids in lowering downstream piping cost

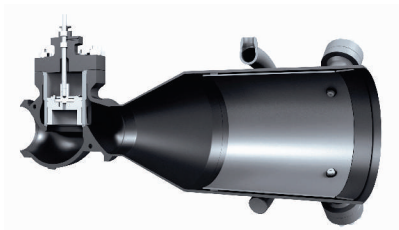


De-Laval Nozzle

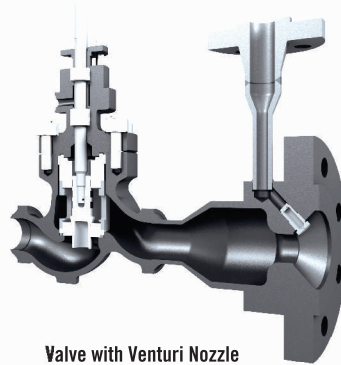
The CIR 3300 utilizes combined performance of our CIR 3100 series of control valves & CIR 3200 series of nozzle/desuperheater options.

SPECIFICATIONS

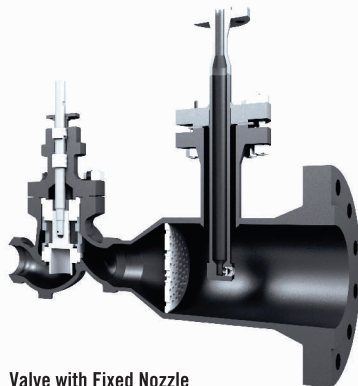
Body Type	Globe, Angle
Valve Size	1" (DN 25) to 16" (DN 400)
ANSI Class	1" to 8" - 150# to 1500# & 10" to 16" - 150# to 600#
End Connections	SWE, BWE, RF, RTJ
Plug Type	Contour Plug (UB), Drilled Cone Plug (UB/PiB), Standard Plug (PiB/PB)
Cage Type	Standard Ported Cage, Les Sonic I & II, Zick Twist ¹
Flow Characteristic	Linear, Equal Percent, Modified
Packing Type	Single/Double PTFE, Single/Double Graphite, Low Emission PTFE/Graphite
Nozzle Types	CIR 3200 Desuperheater Nozzles (Venturi, Fixed Nozzle, Probe/Wall Mounted SL Nozzle, IC DSH with DC/ZT/MZ trims ¹ , SA Nozzle)
Body Material	A216 Gr WCC, A352 Gr LCC, A217 Gr WC6, A217 Gr WC9, A351 Gr CF8M
Trim Material	Refer Table 1.1, 1.2, 1.3
Cv Range	Refer Table 2
Leakage Class	Class IV and Class V
Actuation	Pneumatic, Electric, Electro-Hydraulic, Hydraulic
Certifications/Compliance	IBR, PED/CE



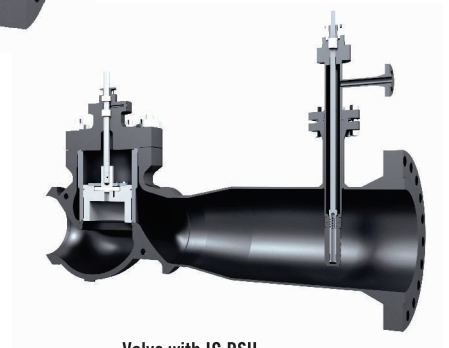
Valve with SL Nozzle



Valve with Venturi Nozzle



Valve with Fixed Nozzle



Valve with IC DSH

TRIM MATERIALS

Trim Type	Trim	Max Service Temp	Cage/Seat Retainer	Plug & Seat Ring	Stem	Shutoff
Post Guided(UB)	SS410	427°C/ 800°F	SS410	SS410 Hardened	A479 TY316	IV & V
	DIN 1.4122	593°C/ 1100°F	DIN 1.4122	DIN 1.4122 Nitrided	DIN 1.4122 Nitrided	IV & V
Unbalanced Cage Guided(UB)	SS410	427°C/ 800°F	CA15/SS410 Nitrided	CA15/SS410 Nitrided	A479 TY316	IV & V
	SS316	427°C/ 800°F	A351 CF8M Nitrided	A351 CF8M Nitrided	A479 TY316	IV & V
	SS316 ST	427°C/ 800°F	A351 CF8M Cr. Plated	A351 CF8M Stellite	A479 TY316	IV & V
	CA6NM Hi-Temp	538°C/ 1000°F	ASTM A487 CA6NM Nitrided	ASTM A487 CA6NM Nitrided	ASTM A638 Gr 660 / Inconel X750	IV & V

Table 1.1

Trim Type	Trim	Max Service Temp	Plug	Seat Ring	Stem	Plug Seal	Shutoff
Plug Balanced Cage Guided (PB)	SS410	427°C/ 800°F	CA15/ SS 410 Hardened	CA15/ SS 410 Hardened	A479 TY316	C300 Spring Loaded Seal 300°C/527°F	V
						Flex Graphite 427°C / 800°F Max	IV
	SS316	427°C/ 800°F	A351 CF8M Nitrided	A351 CF8M Nitrided	A479 TY316	C300 Spring Loaded Seal 300°C / 527°F Max	V
						Flex Graphite 427°C / 800°F Max	IV
	SS316 ST	427°C/ 800°F	A351 CF8M Cr. Plated	A351 CF8M Stellite	A479 TY316	C300 Spring Loaded Seal 300°C / 527°F Max	V
						Flex Graphite 427°C / 800°F Max	IV
	CA6NM Hi-Temp	538°C/ 1000°F	ASTM A487 CA6NM Nitrided	ASTM A487 CA6NM Nitrided	ASTM A638 Gr 660 / Inconel X750	Flex Graphite 538°C / 1000°F	IV

Table 1.2

Trim Type	Trim	Max Service Temp	Cage	Plug & Seat Ring	Stem	Piston Ring	Shutoff
Pilot Plug Balanced – Cage Guided (PiB)	SS410	427°C/ 800°F	CA15 / SS410 Nitrided	CA15 / SS410 Nitrided	A479 TY316	Nitronic 60	IV & V
	SS316	427°C/ 800°F	A351 CF8M Nitrided	A351 CF8M Nitrided	A479 TY316	Nitronic 60	IV & V
	SS316 ST	427°C/ 800°F	A351 CF8M Cr. Plated	A351 CF8M Stellited	A479 TY316	Nitronic 60	IV & V
	CA6NM Hi-Temp	538°C/ 1000°F	ASTM A487 CA6NM Nitrided	ASTM A487 CA6NM Nitrided	ASTM A638 Gr 660 / Inconel X750	Nitronic 60	IV & V
	DIN 1.4122	593°C/ 1100°F	DIN 1.4122	DIN 1.4122 Nitrided	DIN 1.4122 Nitrided	DIN 1.4122 Nitrided	IV & V

Table 1.3

CV TABLES

Valve Size	Stroke	Rating	Low Flow Plug - Linear
1 Inch (DN 25)	20 mm	150~1500	0.12, 0.25, 0.5, 0.75, 1.25
1.5 Inch (DN 40)	20 mm	150~1500	0.25, 0.5, 0.75, 1.25

Table 2.1 - Unbalanced, Post Guided

Valve Size	Stroke	Rating	Contour Plug Linear	Contour Plug Equal	Contour Plug Modified	Drilled Cone Linear	Drilled Cone Equal	Drilled Cone Modified
1 Inch (DN 25)	20 mm	150~1500	3.5, 6, 9, 11			3.5, 6		
	30 mm	150~1500	-			9, 11	-	
1.5 Inch (DN 40)	20 mm	150~1500	3.5, 6			3.5, 6		
	30 mm	150~1500	14, 23, 32			14, 23, 32	10	12
2 Inch (DN 50)	20 mm	150~1500	3.5, 6, 9	3.5, 6		3.5, 6		
	30 mm	150~1500	14, 23, 35 45, 49	14, 23, 35		14, 23, 32	10	12
	40 mm	150~1500	-	45,49		45,49	20,27	20,30
3 Inch (DN 80)	30 mm	150~1500	35			32	-	
	40 mm	150~1500	49,75,95			49, 75	27	30
	50 mm	150~1500	-			95	45	55
4 Inch (DN 100)	40 mm	150~1500	49, 75			49	-	
	50 mm	150~1500	110, 175			95	45	55

Table 2.2 - Unbalanced, Post Guided

Valve Size	Stroke	Rating	Ported Cage - Linear	Ported Cage - Equal	Les Sonic-I Linear	Les Sonic-II Linear
2 Inch (DN 50)	40 mm	150~1500	30,45,65,75	27,41,54,68	26,43,51,68	18,30
3 Inch (DN 80)	50 mm	150~1500	62,93,124,155	56,84,112,140	55,86,110,135	75,90
4 Inch (DN 100)	50 mm	150~1500	96, 144, 192, 240	86, 130, 173, 216	86, 122, 171, 208	100,125
6 Inch (DN 150)	65 mm	150~1500	180, 270, 360, 450	160, 240, 320, 400	159, 223, 303, 366	140,180
8 Inch (DN 200)	75 mm	150~600	320, 480, 640, 800	302, 454, 605, 756	276, 423, 551, 698	220,280
		900~1500	288, 432, 576, 720	272, 408, 544, 680	293, 440, 566, 712	200,245
10 Inch (DN 250)	100 mm	150~600	520, 780, 1040, 1300	440, 660, 880, 1100	411, 616, 792, 997	360,450
12 Inch (DN 300)	100 mm	150~600	720, 1080, 1440, 1800	576, 864, 1152, 1440	469, 675, 909, 1114	450,550
16 Inch (DN 400)	125 mm	150~600	1240, 1840, 2300, 3100	920, 1380, 1860, 2800	871, 1271, 1707, 2322	675,810

Table 2.3 - Plug Balanced & Pilot Balanced - Cage Guided

ACTUATION & ACCESSORIES

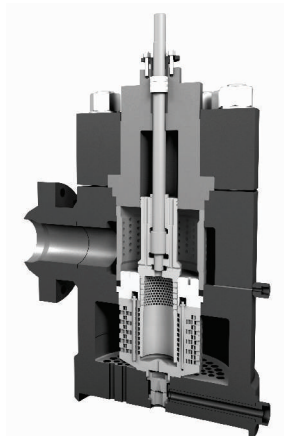
The CIR 3300 & 3400 valves are offered with pneumatic actuator as standard but can also be offered with wide range of actuator options namely electric, hydraulic, electro hydraulic and standalone manual actuation too. The actuators are selected & bundled with appropriate accessories like Air filter regulator, Positioner, Solenoid valves, Volume booster etc. based on the minimum operating site conditions & also any speed or control requirement with respect to each valve.



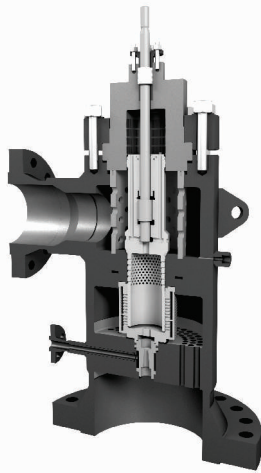
The CIR 3400 is built with cascading control of pressure and temperature in a forged body featuring various trim & integral nozzle options to best fit the process data.

SPECIFICATIONS

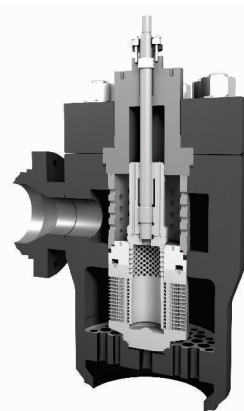
Body Type	Globe, Angle, Z-Form
Inlet Sizes	1" (DN25) to 20" (DN500) ²
Outlet Sizes	1" (DN25) to 30" (DN750) ²
Plug Sizes	25mm to 300mm
ANSI Class	150# to 4500#, Dual Rated, Custom Rating
End Connections	BWE, RF, RTJ
Plug Type	Contour Plug (UB), Drilled Cone (UB/ PiB)
Cage Type	Drilled Hole (1-3 Stages), Zick Twist (2-20 Stages)
Flow Characteristic	Linear, Equal Percent, Modified
Packing Type	Single/Double PTFE, Single/Double Graphite, Low Emission PTFE/Graphite
Nozzle Types	De-Laval Nozzle, Wall Mounted - SL Nozzle, SA Nozzle
Body Material	A105, A182 Gr F11, A182 Gr F22, A182 Gr F91, A182 Gr F316
Trim Material	SS410 Hardened (upto 425°C), DIN 1.4122 Nitrided (426°C TO 593°C)
Cv Range	Custom – Made to order
Leakage Class	Class IV and Class V
Actuation	Pneumatic, Electric, Electro-Hydraulic, Hydraulic
Drain Connection	¼" or ½" NPT
Certifications / Compliance	IBR, PED/CE



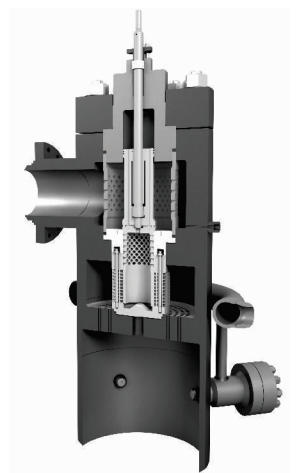
Valve with Zick Twist & De-Laval Nozzle



Valve with Drilled Hole Cage & De-Laval Nozzle



Valve with Zick Twist Cage



Valve with Zick Twist Cage and SL Nozzle

TRIM OPTIONS CIR 3300 & 3400

CONTOURED PLUG (UB):

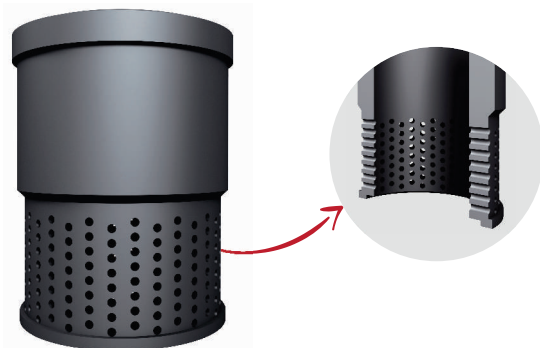
Contour plug is a top guided design provides valve plug stability with less chance of a sticking valve plug due to non-lubricating fluids which reduce vibration, mechanical noise, and trim wear and suitable for all general services



Contour Plug

LES-SONIC

Les sonic trims control aerodynamic noise that is effective for vapour, gas or steam flow applications. The Les-Sonic cage is designed to reduce fluid generated noise up to 15 - 20 dBA, using single or dual stages for any compressible fluid service. When used in conjunction with a Les-Sonic silencing orifice plate, noise attenuation of greater than 20 dBA can be achieved. Available stages are up to two stages, Les Sonic I and Les Sonic II.



Les Sonic

DRILLED CONE (UB/PiB)

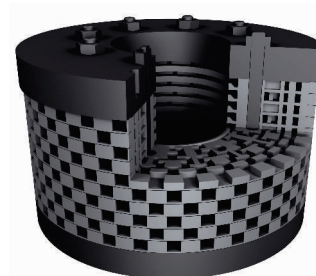
Drilled cone plug is a top guided design which has a significant impact on the overall pressure recovery of the valve. The hole pattern drilled onto the plug determines the trim characteristics and hence can be customized based on flow data.



Drilled Cone

ZICK TWIST

Zick Twist Trim is a multi-stage multi-path pressure reduction technology which is specifically designed to control the potentially destructive effects of high velocity fluids experienced in the valve. It splits the larger pressure drop across the valve trim into a series of smaller pressure drops by forcing the fluid through a number of tortuous flow paths which results in reduced vibration and noise.



Zick Twist

NOZZLE TYPES CIR 3300 & 3400

VENTURI NOZZLE

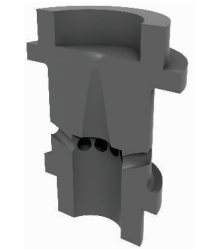
Circor Venturi Nozzle(VN) is offered with benefits of low cost, no moving parts and less maintenance. Venturi Nozzle offers multiple desuperheater choices which are well suited for conjugation and combined heat power plant.



Venturi Nozzle

DE-LAVAL NOZZLE

Circor De-Laval Nozzle atomizes attemperating spray water by using steam assist technology. The performance benefits are excellent controllability and rangeability with target temperature met immediately downstream of the CIR 3400 valve. The installation cost is lower due to short run of downstream straight length.



De-Laval Nozzle

SL NOZZLE

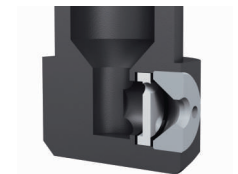
Circor SL nozzle type is of variable area with spring loading in which the nozzle opening varies with the differential pressure. Spring loading and the varying flow area ensures that the spray velocity is sufficiently high to produce a good atomized spray even at low flow rates.



SL Nozzle

FIXED NOZZLE

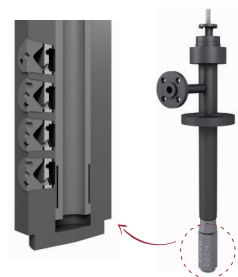
Fixed Nozzle(FN) is offered with single or in combination of fixed Cv nozzles of the valve outlet. The number of nozzles are limited depending on the pipeline diameter.



Fixed Nozzle

IC DESUPERHEATER

Circor IC desuperheater regulates the amount of injected water by varying the number of orifices during operation. This ensures that the spray water pressure remains constant at all loads and an excellent and almost uniform spray quality is achieved over the full operating range, thereby minimizing the tendency of spray water to accumulate in the line.



IC Desuperheater

SA NOZZLE

Steam Assist(SA) Nozzle allows designated quantity of high pressure steam (about 1-2 mass% of the main steam flow) into the nozzle along with cooling water. The high pressure steam aids to atomize the cooling water for effective desuperheating downstream.

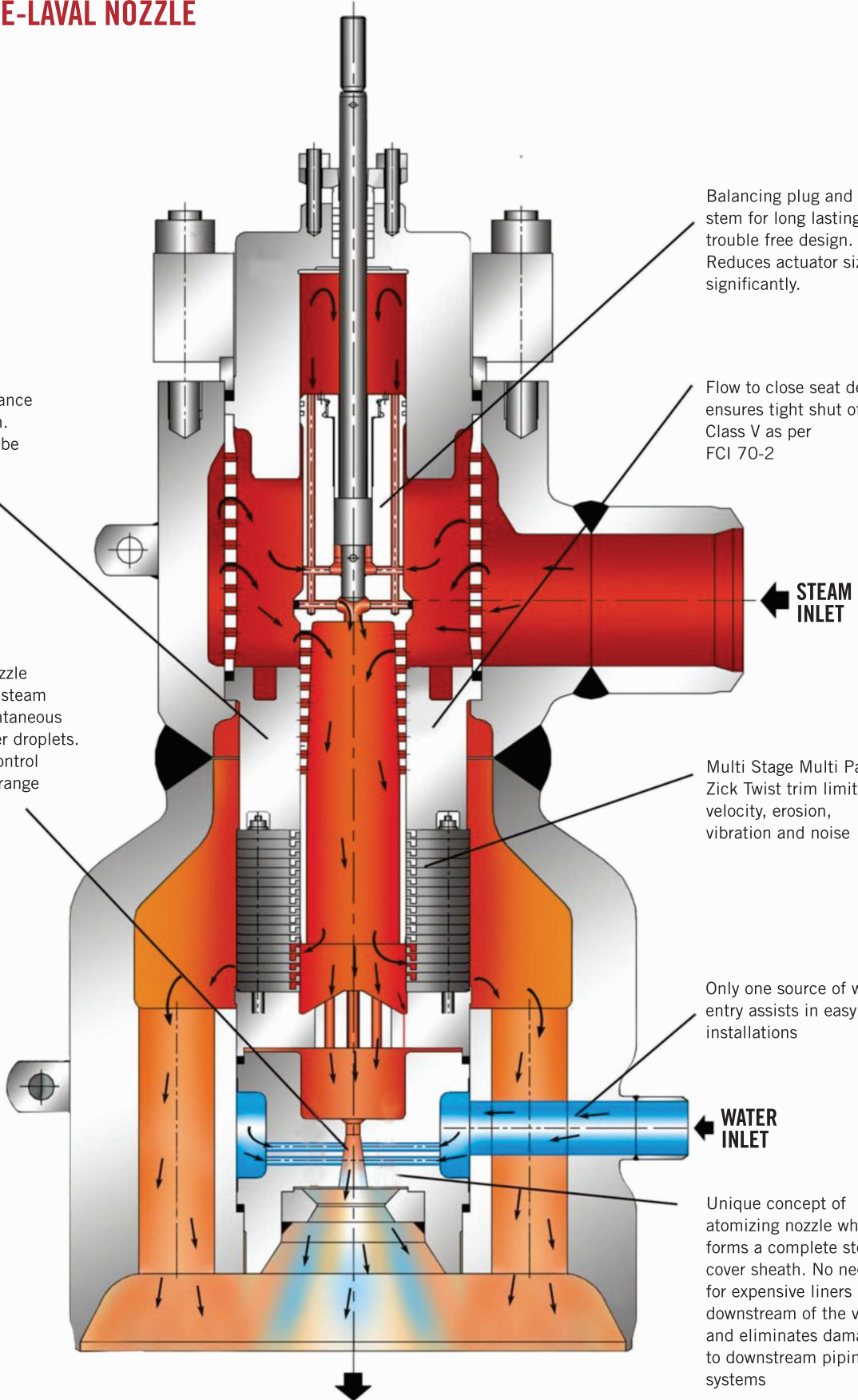


SA Desuperheater

DETAILED VIEW OF CIR 3400 VALVE ZICK TWIST & DE-LAVAL NOZZLE

Extremely maintenance friendly seat design. Complete trim can be replaced with ease

Steam De-Laval nozzle creates supersonic steam velocities for instantaneous evaporation of water droplets. Maintain precise control over full operating range



Balancing plug and pilot stem for long lasting and trouble free design. Reduces actuator sizes significantly.

Flow to close seat design ensures tight shut off. Class V as per FCI 70-2

STEAM INLET

Multi Stage Multi Path Zick Twist trim limits velocity, erosion, vibration and noise

Only one source of water entry assists in easy installations

WATER INLET

Unique concept of atomizing nozzle which forms a complete steam cover sheath. No need for expensive liners downstream of the valve and eliminates damages to downstream piping systems

CIR3300 – Ordering Code

1&2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Model	Trim Type	Nozzle Type	Valve Size	Valve Rated Cv %	Inlet Size	Inlet Rating	Outlet Size	Outlet Rating	Valve End Conn	Body Mat'l	Trim Mat'l	Compliance	Special	Actuator Type	Actuator Model	Accessories
33	1	1	3	A	3	A	3	A	A	A	A	1	X	A	1	1

Position - 1&2 | Model
33

Position - 3 | Trim Type

- 1 - UBC - MZ Plug - Linear
- 2 - UBC - Cont. Plug - Linear
- 3 - UBC - Cont. Plug - EQ %
- 4 - UBC - Cont. Plug - Modified
- 5 - UBC - Drilled Cone Linear
- 6 - UBC - Drilled Cone Eq%
- 7 - UBC - Drilled Cone Modified
- 8 - PiB - Drilled Cone Linear
- 9 - PiB - Drilled Cone Eq%
- A - PiB - Drilled Cone Modified
- B - PB-CG - Standard - Linear
- C - PB-CG - Standard - EQ%
- D - PB-CG - LES-SONIC I - Linear
- E - PB-CG - LES-SONIC II - Linear
- F - PiB-CG - Standard - Linear
- G - PiB-CG - Standard - EQ%
- H - PiB-CG - LES-SONIC I - Linear
- J - PiB-CG - LES-SONIC II - Linear
- K - Zick Twist
- Z - Special

Position - 4 | Nozzle Type

- 1 - Venturi
- 2 - Probe Type - FN
- 3 - Probe Type - SL
- 4 - Wall Mounted - SL
- 5 - IC DSH with Acuator - DC Trim
- 6 - IC DSH with Acuator - ZT Trim
- 7 - IC DSH with Acuator - MZ Trim
- 8 - Probe - SA
- Z - Special

Position - 5 | Valve Size

- 3 - 1" 7 - 4" B - 12"
- 4 - 1.5" 8 - 6" C - 14"
- 5 - 2" 9 - 8" D - 16"
- 6 - 3" A - 10" Z - Other

Position - 6 | Valve Rated Cv%

- A - 10% E - 50% J - 90%
- B - 20% F - 60% K - 100%
- C - 30% G - 70%
- D - 40% H - 80%

Position - 7 | Inlet Size

- 3 - 1" 8 - 6" D - 16" J - 26"
- 4 - 1.5" 9 - 8" E - 18" Z - Other
- 5 - 2" A - 10" F - 20"
- 6 - 3" B - 12" G - 22"
- 7 - 4" C - 14" H - 24"

Position - 8 | Inlet Rating

- A - 150#
- B - 300#
- C - 600#

- D - 900# K - 600# SPL
- E - 1500# L - 900# SPL
- F - 2500# M - 1500# SPL
- G - 4500# N - 2500# SPL
- H - 150# SPL P - ASME Sec VIII
- J - 300# SPL Z - Special/Other

Position - 9 | Outlet Size

- 3 - 1" C - 14" M - 32"
- 4 - 1.5" D - 16" N - 34"
- 5 - 2" E - 18" P - 36"
- 6 - 3" F - 20" Q - 40"
- 7 - 4" G - 22" R - 42"
- 8 - 6" H - 24" S - 44"
- 9 - 8" J - 26" T - 46"
- A - 10" K - 28" Z - Other
- B - 12" L - 30"

Position - 10 | Outlet Rating

- A - 150# F - 2500# L - 900# SPL
- B - 300# G - 4500# M - 1500# SPL
- C - 600# H - 150# SPL N - 2500# SPL
- D - 900# J - 300# SPL P - ASME Sec VIII
- E - 1500# K - 600# SPL Z - Special/Other

Position - 11 | Valve End Conn

- A - RF G - SWE Z - Special/Other
- B - RTJ J - BWE

Position - 12 | Body Mat'l

- A - A216 Gr WCC - Globe
- B - A352 Gr LCC - Globe
- C - A217 Gr WC6 - Globe
- D - A217 Gr WC9 - Globe
- E - A217 Gr C12A - Globe
- F - A351 Gr CF8M - Globe
- G - A216 Gr WCC - Angle
- H - A352 Gr LCC - Angle
- J - A217 Gr WC6 - Angle
- K - A217 Gr WC9 - Angle
- L - A217 Gr C12A - Angle
- M - A351 Gr CF8M - Angle
- N - A 105 - Globe
- P - A182 Gr F11 - Globe
- Q - A182 Gr F22 - Globe
- R - A182 Gr F91 - Globe
- S - A182 Gr F316 - Globe
- T - A 105 - Angle
- U - A182 Gr F11 - Angle
- V - A182 Gr F22 - Angle
- W - A182 Gr F91 - Angle
- Y - A182 Gr F316 - Angle
- Z - Special

Position - 13 | Trim Mat'l

- A - SS 410 Hardened
- D - SS316 Stellite
- E - STD. (410 SST) w/Omni-Seal
- F - 316 SST w/Omni-Seal

- G - 316/STELL. w/Omni-Seal
- H - STD. (410 SST) w/Graph-Seal
- J - 316 SST w/Graph-Seal
- K - 316/STELL. w/Graph-Seal
- L - CA6NM w/Graph-Seal (HT)
- M - DIN 1.4122 Nitrided
- Z - Special/Other

Position - 14 | Compliance

- 1 - IBR X - NA
- 2 - PED / CE Z - Special/Other

Position - 15 | Special

- X - NA
- Z - Special/Other

Position - 16 | Actuator Type

- A - Multi Spring & Diaphragm w/o HW
- B - Multi Spring & Diaphragm w/ TMH
- C - Multi Spring & Diaphragm w/ SMH
- D - Single Spring & Diaphragm w/o HW
- E - Single Spring & Diaphragm w/ TMH
- F - Single Spring & Diaphragm w/ SMH
- G - Piston - SASR w/o HW
- H - Piston - SASR w/ SMH
- J - Piston - DASR w/o HW
- K - Piston - DASR w/ SMH
- L - Piston - DA w/o HW
- M - Piston - DA w/ SMH
- N - Electric
- P - Hydraulic
- Q - Electro - Hydraulic
- R - Manual Handwheel
- X - None
- Z - Special

Position - 17 | Actuator Model

- 1 - ST-6115 G - PA250
- 2 - ST-6135 H - PA330
- 3 - ST-6160 J - PA400
- 4 - ST-6175 K - PA500
- 5 - M-230 L - SMH 250
- 6 - M-385 M - SMH 330
- 7 - M-700 N - SMH 400
- 8 - M-1400 P - SMH 500
- 9 - S-225 Q - 12"
- A - S-320 R - 14"
- B - S-550 S - 16"
- C - S-700 T - 20"
- D - S-960 U - 24"
- E - S-1400 X - NA
- F - PA150 Z - Special/Other

Position - 18 | Accessories

- 1 - 1 5 - 5 9 - 9
- 2 - 2 6 - 6 X - NA
- 3 - 3 7 - 7 Z - Special/
- 4 - 4 8 - 8 Other

CIR3400 – Ordering Code

1&2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Model	Trim Type	Nozzle Type	Plug Size	Valve Travel	Inlet Size	Inlet Rating	Outlet Size	Outlet Rating	Valve End Conn	Body Mat'l	Trim Mat'l	Compliance	Special	Actuator Type	Actuator Model	Accessories
34	1	1	1	1	3	A	3	A	A	T	A	1	X	A	1	1

Position - 1&2 | Model

34

Position - 3 | Trim Type

- 1 - UB-Contour Plug
- 2 - UB-Drilled cone - 1 Stage
- 3 - PiB-Drilled cone - 1 Stage
- 4 - PiB-Drilled cone - 2 Stage
- 5 - PiB-Drilled cone - 3 Stage
- 6 - UB-Zick twist - 4 Stage
- 7 - UB-Zick twist - 8 Stage
- 8 - UB-Zick twist - 12 Stage
- 9 - UB-Zick twist - 16 Stage
- A - UB-Zick twist - 20 Stage
- B - PiB-Zick twist - 4 Stage
- C - PiB-Zick twist - 8 Stage
- D - PiB-Zick twist - 12 Stage
- E - PiB-Zick twist - 16 Stage
- F - PiB-Zick twist - 20 Stage
- Z - Special

Position - 4 | Nozzle Type

- 1 - De-Laval - Steam Assist
- 2 - Venturi
- 3 - Probe Type - FN
- 4 - Probe Type - SL
- 5 - IC DSH with Acuator - DC Trim
- 6 - IC DSH with Acuator - ZT Trim
- 7 - IC DSH with Acuator - MZ Trim
- 8 - Probe - SA
- X - N.A
- Z - Special

Position - 5 | Plug Size

- 1 - 72 mm
- 2 - 90 mm
- 3 - 100 mm
- 4 - 112 mm
- 5 - 125 mm
- 6 - 140 mm
- 7 - 160 mm
- 8 - 180 mm
- 9 - 200 mm
- A - 225 mm
- B - 250 mm
- C - 300 mm
- Z - Special

Position - 6 | Valve Travel

- 1 - 50 mm
- 2 - 75 mm
- 3 - 100 mm
- 4 - 125 mm
- 5 - 150 mm
- 6 - 175 mm
- Z - Special

Position - 7 | Inlet Size

- | | | |
|----------|---------|-------------------|
| 3 - 1" | 9 - 8" | F - 20" |
| 4 - 1.5" | A - 10" | G - 22" |
| 5 - 2" | B - 12" | H - 24" |
| 6 - 3" | C - 14" | J - 26" |
| 7 - 4" | D - 16" | Z - Special/Other |
| 8 - 6" | E - 18" | |

Position - 8 | Inlet Rating

- | | |
|--------------|-------------------|
| A - 150# | J - 300# SPL |
| B - 300# | K - 600# SPL |
| C - 600# | L - 900# SPL |
| D - 900# | M - 1500# SPL |
| E - 1500# | N - 2500# SPL |
| F - 2500# | P - ASME Sec VIII |
| G - 4500# | Z - Special/Other |
| H - 150# SPL | |

Position - 9 | Outlet Size

- | | | |
|----------|---------|-------------------|
| 3 - 1" | C - 14" | M - 32" |
| 4 - 1.5" | D - 16" | N - 34" |
| 5 - 2" | E - 18" | Q - 40" |
| 6 - 3" | F - 20" | R - 42" |
| 7 - 4" | G - 22" | S - 44" |
| 8 - 6" | H - 24" | T - 46" |
| 9 - 8" | J - 26" | Z - Special/Other |
| A - 10" | K - 28" | |
| B - 12" | L - 30" | |

Position - 10 | Outlet Rating

- | | |
|--------------|-------------------|
| A - 150# | J - 300# SPL |
| B - 300# | K - 600# SPL |
| C - 600# | L - 900# SPL |
| D - 900# | M - 1500# SPL |
| E - 1500# | N - 2500# SPL |
| F - 2500# | Q - ASME Sec VIII |
| G - 4500# | Z - Special/Other |
| H - 150# SPL | |

Position - 11 | Valve End Conn

- A - RF
- B - RTJ
- G - SWE
- J - BWE
- Z - Special/Other

Position - 12 | Body Mat'l

- T - A 105 - Angle
- U - A182 Gr F11 - Angle
- V - A182 Gr F22 - Angle
- W - A182 Gr F91 - Angle
- Y - A182 Gr F316 - Angle
- Z - Special

Position - 13 | Trim Mat'l

- A - SS 410 Hardened
- B - DIN 1.4122 Nitrided
- Z - Special/Other

Position - 14 | Compliance

- 1 - IBR
- 2 - PED / CE
- X - NA
- Z - Special/Other

Position - 15 | Special

- X - NA
- Z - Special/Other

Position - 16 | Actuator Type

- A - Multi Spring & Diaphragm w/o HW
- B - Multi Spring & Diaphragm w/ TMH
- C - Multi Spring & Diaphragm w/ SMH
- D - Single Spring & Diaphragm w/o HW
- E - Single Spring & Diaphragm w/ TMH
- F - Single Spring & Diaphragm w/ SMH
- G - Piston - SASR w/o HW
- H - Piston - SASR w/ SMH
- J - Piston - DASR w/o HW
- K - Piston - DASR w/ SMH
- L - Piston - DA w/o HW
- M - Piston - DA w/ SMH
- N - Electric
- P - Hydraulic
- Q - Electro-Hydraulic
- R - Manual Handwheel
- X - None
- Z - Special

Position - 17 | Actuator Model

- | | |
|-------------|-------------------|
| 1 - ST-6115 | G - PA250 |
| 2 - ST-6135 | H - PA330 |
| 3 - ST-6160 | J - PA400 |
| 4 - ST-6175 | K - PA500 |
| 5 - M-230 | L - SMH 250 |
| 6 - M-385 | M - SMH 330 |
| 7 - M-700 | N - SMH 400 |
| 8 - M-1400 | P - SMH 500 |
| 9 - S-225 | Q - 12" |
| A - S-320 | R - 14" |
| B - S-550 | S - 16" |
| C - S-700 | T - 20" |
| D - S-960 | U - 24" |
| E - S-1400 | X - NA |
| F - PA150 | Z - Special/Other |

Position - 18 | Accessories

- | | | |
|-------|-------|-------------|
| 1 - 1 | 5 - 5 | 9 - 9 |
| 2 - 2 | 6 - 6 | X - NA |
| 3 - 3 | 7 - 7 | Z - Special |
| 4 - 4 | 8 - 8 | /Other |

SPECIFICATION - CIR 3300 & 3400

Plant Name : _____ Project Name : _____ End User : _____ Application : _____

Tag No: _____ Qty: _____ Fluid : _____

Sizing Parameters	Units	Min Flow	Norm Flow	Max Flow	Shut-Off
SERVICE/CONDITIONS	Inlet Flow Rate				—
	Inlet Pressure				
	Inlet Temperature				
	Outlet Flow Rate				—
	Outlet Pressure				—
	Outlet Temperature				—
	Spray Water Flow Rate				—
	Spray Water Pressure				
	Spray Water Temperature				

LINE

Steam Inlet Pipe Size & Sch.
 Steam Outlet Pipe Size & Sch.
 Spray Water Pipe Size & Sch.
 Pipe Insulation

VALVE BODY/BONNET

Body Type
 Valve Size In & Out
 Pressure Class In & Out
 Design Press. & Temp In & Out
 Body/Bonnet Mat'l
 End Connection In & Out
 Flow Direction
 Type of Bonnet
 Packing Mat'l

TRIM

Trim Type
 Cage Type
 Characteristic
 Trim Material

LOC.

Equip. Location
 Amb. Temp. Min/Max
 Area Classification
 PED Category

ACTUATOR

Type
 Service
 Air Fail Action
 Min & Max. Allow. Press.
 Orientation
 Handwheel
 Tubing & Fittings

POSITIONER

Input Signal
 Type/Protocol
 Gauges
 By-Pass
 Position Feedback
 Certification / Compliance

AIR SET

Range
 Filter
 Gauge
 Set Pressure

SOL

Type
 Quantity
 Voltage
 Certification / Compliance

SWITCHES

Type
 Contacts/Rating
 Actuation Points
 Certification / Compliance

TEST

Hydrotest
 Seat Leakage
 Special Testing

Special Notes

OUR CREDENTIALS

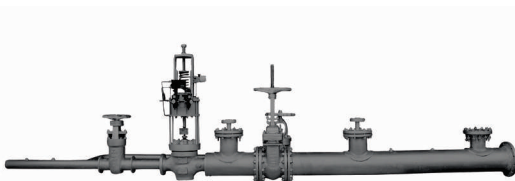
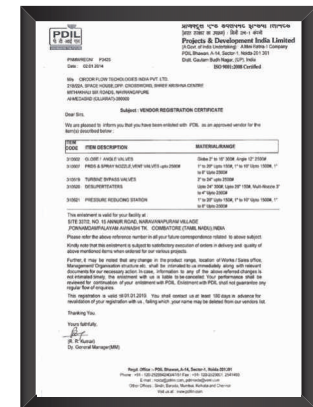
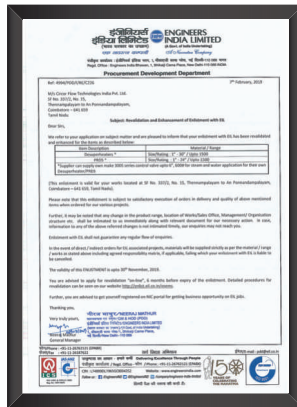
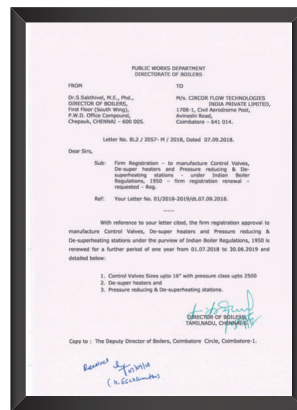
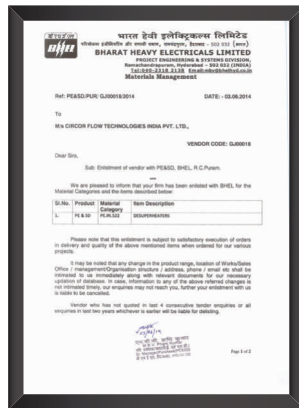
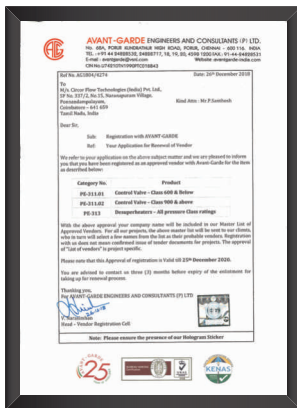
ISO 9001:2015

IMS: ISO 14001:2015 & ISO 45001:2018

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Pibiviesse	Dopak	Nicholson	Atlas Productions	Warren
Pipeline Engineering		CIRCOR	Aerodyne Controls	Zenith
DeltaValve		R.G. Laurence	Hale Hamilton	
TapcoEnpro		Rockwood Swendeman		
		CPC-Cryolab		

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