

## For Textile Industry



**Applications :** Compressed air is a vital part in textile industry in all phases of spinning, weaving, loom and knitting. The quality of compressed air required to be on various specification based on the industry, are:

### Why do we need Air Dryers ?

Blow room to ring frame consist of pneumatic system with solenoid valves and cylinders which are operated with compressed air. It is necessary that the air has to be clean and dry, in order to keep it away from rust formation and condensation which could corrode the smooth surfaces of the cylinder. Alternatively the foreign particles could lock the solenoid valves orifice which may delay the movement of the cylinder which causes the alignment problem of the machine.

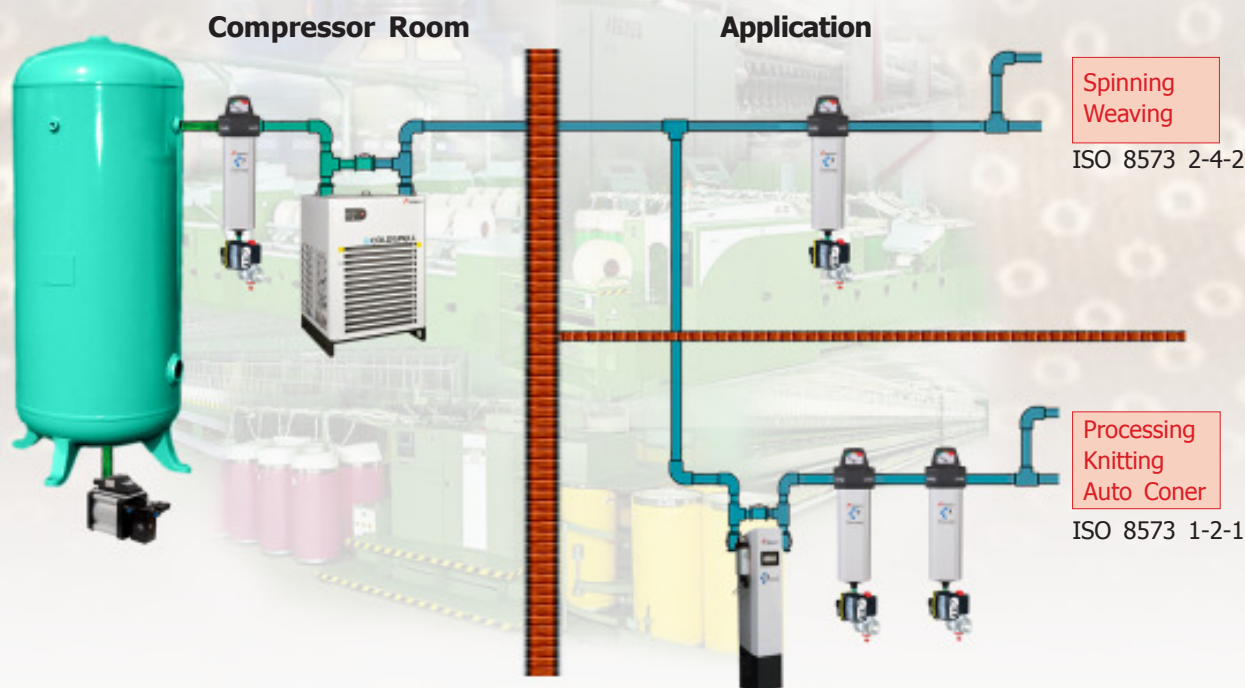
One more important machine in spinning process is auto coner which has lots of solenoid valves and

cylinders which are high speed through precisions. Hence the need to have high degree of cleanliness in the air, could be met only with desiccant dryer and sub micron filters.

**In Airjet Weaving / Spinning :** Compressed air blown through fine nozzles to transport the weft. Moisture and oil in the air blocks the nozzles. Nozzle replacements, production losses, fabric staining will also result in causing product rejections.

Production of manmade raw materials for use in textiles also uses compressed air. One of the application in the pneumatic transport of PVC, PTA or DMT chips.

For texturing process, yarn is intermingled using a jet of air through nozzle. Blockage due to oil, moisture will cause uneven intermingling and destroy the yarn and staining.



### For Optimum Airtreatment Solutions

Application	Auto Drain	Filters	Refrigeration Dryers	Dessicant Dryer
Spinning	✓	✓	✓	×
Weaving	✓	✓	✓	×
Processing	✓	✓	✓	✓
Knitting	✓	✓	✓	✓
Auto Coners	✓	✓	✓	✓

### ISO 8573.1 Quality Classes

Quality Class	Dirt Particle size in Micron	Water Dewpoint °C (ppm. vol.) at 7 bar g	Oil (Including vapour) mg/m1
1	0.1	−70 (0.3)	0.01
2	1	−40 (16)	0.1
3	5	−20 (128)	1.0
4	15	+3 (940)	5
5	40	+7 (1240)	25
6	—	+10 (1500)	—



## SELECTION CHART

Capacity		Trident Product details (Model #)					
Comp HP	Flow (cfm)	1 Drain valve	2 Pre-Filter	3 Oil Filter	4 Refrigeration Dryer	5 Desiccant Dryer	6 After Filter
25	100	CTD 11B / LDV 1000	T 250 P EA	T 250 X EA	COLDSPELL 100	DRYSPELL PLUS 100	T 250 Y EA
30	130	CTD 11 B / LDV 1000	T 250 P EA	T 250 X EA	COLDSPELL 150	DRYSPELL PLUS 150	T 250 Y EA
50	210	LDV 2000	T 600 P EA	T 600 X EA	COLDSPELL 250	DRYSPELL PLUS 250	T 600 Y EA
75	335	LDV 2000	T 600 P EA	T 600 X EA	COLDSPELL 400	DRYSPELL PLUS 375	T 600 Y EA
100	450	LDV 2000	T 851 P EA	T 851 X EA	COLDSPELL 500	DP 962	T 851 Y EA

Note:- Refer the Layout drawing to understand the corresponding product numbers and its application areas. Refer product catalogue for Higher flow and pressure.

### Dryspell Plus

The latest technology in Desiccant Air Dryers offers total cleaning and drying solution for lubricated as well as non-lubricated Compressors. Coalescing filters (boro silicate micro glass fibres) assure maximum removal of oil and liquid moisture upto 0.3 microns. Compressed air at -40°C dew point.

#### Salient features :

- Designed For - ISO:7183-1986 (E) • Dryer Quality Class - ISO:8573-1:2010 (E) class 2 • Pre-Filter Quality Class - ISO:8573-1:2010 (E) class 1 • Consistent Dew Point performance • Noise Level <70 dBA • Pressure Drop < 0.3 kg/cm2(g) • Aluminum Construction • Free From Corrosion & Scale Formation at Inner and Outer sides • Uses High Crush Strength Adsorbent Materials



Model	Item Code	Flow (m³/hour)**	End Connection BSP	Dimensions (mm)			Weight Kgs	Recommended Accessories	
				H	W	D		Pre filter	Post filter
Dryspell Plus 10	PD237	17	½"	1038	330	150	21	T 100 YEA	T 100 XIA
Dryspell Plus 20	PD238	34	½"	963	371	213	29	T 100 YEA	T 100 XIA
Dryspell Plus 30	PD239	51	½"	1227	371	213	39	T 100 YEA	T 100 XIA
Dryspell Plus 45	PD240	76	½"	999	497	313	49	T 100 YEA	T 100 XIA
Dryspell Plus 60	PD241	102	1"	1192	523	313	61	T 250 YEA	T 250 XIA
Dryspell Plus 100	PD242	170	1"	1603	439	372	106	T 250 YEA	T 250 XIA
Dryspell Plus 125	PD243	212	1"	1913	439	372	119	T 250 YEA	T 250 XIA
Dryspell Plus 200	PD244	340	1½"	1615	449	582	214	T 600 YEA	T 600 XIA
Dryspell Plus 250	PD245	424	1½"	1925	449	582	238	T 600 YEA	T 600 XIA
Dryspell Plus 300	PD246	510	2"	1615	457	764	256	T 600 YEA	T 600 XIA
Dryspell Plus 375	PD247	637	2"	1925	457	764	286	T 600 YEA	T 600 XIA

\*\* As per ISO 7183 option B rated condition

### DP Series

Designed and tested to provide 100% clean, dry, oil free compressed air at -40°C atmospheric dew point, to safeguard your valuable pneumatic equipment. Available in 19 models to suit specific requirements. For pressures upto 70 bar and flow upto 10,000 cfm.



**Salient features :** • Extensive Mimic display with Electronic Controller • Energy saving purge economiser • Stainless Steel Filters Cartridges • Fabrication Code : IS 2825 • Dewpoint better than -40°C

**Optional :** • Fabrication Code : ASME SEC VIII DIV I • Dewpoint based changeover

Model	Item Code	Inlet Flow cfm	End Connection	Dimensions (mm)			Weight Kg
				Height	Width	Depth	
DP-768 M	PD020	400	2" NB	1810	1200	1300	850
DP-768	PD019	458	2" NB	1810	1200	1300	850
DP-960M	PD022	500	2" NB	1830	1300	1300	950
DP-960	PD021	572	2" NB	1830	1300	1300	950
DP-1440M	PD055	750	3" NB	1975	1500	1500	1265
DP-1440	PD023	860	3" NB	1975	1500	1500	1265
DP-1920M	PD026	1000	3" NB	2100	1500	1500	1575
DP-1920	PD025	1144	3" NB	2100	1500	1500	1575

- Operating voltage - 230 V AC 50 Hz 1 Ph.
- For any other capacity contact factory.
- Specifications are subject to change without notification.

## Coldspell

Designed and tested to provide 100% clean, dry, oil free compressed air at -23°C atmospheric dew point, to safeguard your valuable pneumatic equipment. Available in 17 models to suit specific requirements. For pressures upto 70 bar and flow upto 5000 cfm.

### Salient features :

- Large condenser for high ambient temperatures
- Microprocessor based controller
- Anti-recycle feature for compressor protection
- Low pressure drop across advanced heat exchangers saves energy
- The dryers have been designed for nominal standard inlet conditions as per ISO 7183 - 2007
- Dryer Quality class - ISO 8573 - 1 : 2010 (E) class -5-



## Specification of Dryer

Model	Item Code	Flow in scfm	Power consumption (KW) R134a/R407c	End connection	Dimension (mm)			Weight (kg)	Recommended Pre Filter** 5 Micron	Recommended Post Filter**	
					H	W	D			1 Micron	0.01 Micron
Coldspell 20	PH191	20	0.32/—	¾" BSP	420	400	430	38	T100PEA	T100XIA	T100YIA
Coldspell 40	PH192	40	0.34/—	1" BSP	525	450	475	48	T100PEA	T100XIA	T100YIA
Coldspell 50	PH193	50	0.36/—	1" BSP	525	450	475	48	T100PEA	T100XIA	T100YIA
Coldspell 60	PH194	60	0.36/—	1" BSP	525	450	475	48	T100PEA	T100XIA	T100YIA
Coldspell 80	PH195	80	0.85/—	1" BSP	675	485	525	65	T250PEA	T250XIA	T250YIA
Coldspell 100	PH196	100	0.85/—	1" BSP	675	485	525	65	T250PEA	T250XIA	T250YIA
Coldspell 150	PH197	150	1.02/—	1½" BSP	860	670	700	123	T250PEA	T250XIA	T250YIA
Coldspell 200	PH198	200	—/1.7	1½" BSP	860	670	700	129	T600PEA	T600XIA	T600YIA
Coldspell 250	PH199	250	—/1.7	1½" BSP	860	670	700	129	T600PEA	T600XIA	T600YIA
Coldspell 300	PH169	300	2.3/—	2" BSP	1275	850	800	240	T600PEA	T600XIA	T600YIA
Coldspell 400	PH170	400	2.5/—	2" BSP	1275	850	800	260	T851PEA	T851XIA	T851YIA
Coldspell 500	PH171	500	3.0/—	2" BSP	1275	850	800	290	T851PEA	T851XIA	T851YIA
Coldspell 650	PH186	650	—/3.4	2" NB	1700	1100	1425	350	T1210PEA	T1210XIA	T1210YIA
Coldspell 800	PH187	800	—/4.4	3" NB	1700	1100	1425	490	T1810PEA	T1810XIA	T1810YIA
Coldspell 1000	PH188	1000	—/4.9	3" NB	1700	1100	1425	580	T1810PEA	T1810XIA	T1810YIA
Coldspell 1250	PH189	1250	—/5.6	4" NB	1700	1100	1425	620	T2200PEA	T2200XIA	T2200YIA
Coldspell 1500	PH190	1500	—/7.9	4" NB	1700	1100	1425	900	T2600PEA	T2600XIA	T2600YIA
Coldspell 2000	PH203	2000	—/10.5	6" NB	1700	1100	1450	1020	T3400PEA	T3400XIA	T3400YIA

For any other capacity, please contact us. Specifications are subject to change without notification.

Notes :

1) All models have air-cooled condenser as the default option. Water cooled option available on request.

2) Maximum working pressure: 16 bar

3) Refrigerants :

R134a: Coldspell 20 to 150 and Coldspell 300 to 500;

R407C: Coldspell 200 to 250 and Coldspell 650 to 2000

4) \*\* To be ordered separately.

## How to Order

Requirement :	Inlet flow	100 scfm
	working pressure	5 Kg / cm <sup>2</sup>
	Inlet temperature	45° C
	Ambient temperature	38° C
Referring tables :	Factor Pi	= 0.84
	Factor Ti	= 1
	Factor Ta	= 1
Dryer capacity	Flow	= 100
required :	Pi x Ti x Ta	0.84 x 1 x 1
		= 119 scfm
Choose the nearest higher model :		= Coldspell 150

## Correction Factor

Air Inlet Temperature °C	30	38	45	50	55	60
Correction Factor (Ti)	1.14	1.08	1.0	0.75	0.63	0.5
Ambient Temperature °C	25	30	38	43		
Correction Factor (Ta)	1.36	1.18	1.0	0.86		
Inlet Pressure Kg/cm <sup>2</sup>	3	5	7	9	12	
Correction Factor (Pi)	0.6	0.84	1.0	1.11	1.21	

Rated nearest option B as per standard ISO 7183 - 2007

## Cleansweep

Coalescing is a continuous natural process in which oil and water particles that pass through the filter element come into contact with a fibre strand and unite with other collected aerosole to form droplets. The droplets fall to the bottom of the housing and are drained away.

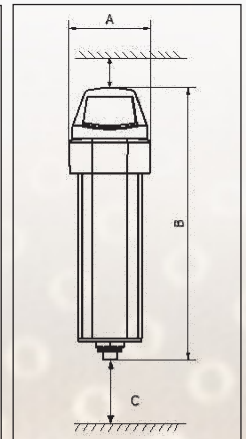
### Salient features :

- Very low installation clearance - Install anywhere
- Oil Removal (Coalescing) and Particulate
- Flow from 100 cfm to 1810 m<sup>3</sup>/hour
- Particle Removal 0.01 (µm)
- Max. Oil carryover 0.003 (mg/m<sup>3</sup>)



### Technical Data

Model	Element Grade	Item Code		Pipe Size BSP	Flow Rate (m <sup>3</sup> /hour)	Max Working Pressure (kg/cm <sup>2</sup> )	Housing Dimensions (mm)		
		(EA) Drain Type	(IA) Drain Type				A	B	C
T 100	P	PF149	PF150	1/2"	100	16	87	294	50
	X	PF149A	PF150A						
	Y	PF149B	PF150B						
	A	PF149C	PF150C						
T 250	P	PF129	PF128	1"	250	16	114	399	50
	X	PF129A	PF128A						
	Y	PF129B	PF128B						
	A	PF129C	PF128C						
T600	P	PF131	PF130	1 1/2"	600	16	114	474	50
	X	PF131A	PF130A						
	Y	PF131B	PF130B						
	A	PF131C	PF130C						
T851	P	PF167	PF163	2"	851	16	148	666	50
	X	PF167A	PF163A						
	Y	PF167B	PF163B						
	A	PF167C	PF163C						
T1210	P	PF177	PF164	2"	1210	16	148	736	50
	X	PF177A	PF164A						
	Y	PF177B	PF164B						
	A	PF177C	PF164C						
T1810	P	PF170	PF165	3"	1810	12	211	761	50
	X	PF170A	PF165A						
	Y	PF170B	PF165B						
	A	PF170C	PF165C						



### Replacement Element



**Ordering Code : Example :** Model T100 X EA (or) T100 X IA      X - Element Grade ; IA - Internal Automatic float drain.

### Specification

Description	Element Grade			
	P	X	Y	A
Filter Element	Borosilicate	Borosilicate	Borosilicate	Activated Carbon
Construction Material (T100 - T1810)	Extruded Aluminium Alloy	Extruded Aluminium Alloy	Extruded Aluminium Alloy	Extruded Aluminium Alloy
Coating - External	Epoxy Powder Coating	Epoxy Powder Coating	Epoxy Powder Coating	Epoxy Powder Coating
Particle Removal	5 (µm)	1 (µm)	0.01 (µm)	0.01 (µm)
Max. Oil carryover	5 (mg/m <sup>3</sup> )	0.5 (mg/m <sup>3</sup> )	0.01 (mg/m <sup>3</sup> )	0.003 (mg/m <sup>3</sup> )
Max. Working Temp.	80°C	80°C	80°C	80°C
Initial Pressure Loss	0.03 (kg/cm <sup>2</sup> )	0.06 (kg/cm <sup>2</sup> )	0.1 (kg/cm <sup>2</sup> )	0.06 (kg/cm <sup>2</sup> )
Pressure Drop for Element Change	0.4 (kg/cm <sup>2</sup> )	0.4 (kg/cm <sup>2</sup> )	0.4 (kg/cm <sup>2</sup> )	0.4 (kg/cm <sup>2</sup> )
Element End Cap Colour	Green	Red	Yellow	Black



## Compact Timer Drain - CTD Series

CTD is the culmination of years of manufacturing drains. It takes care of all problems normally associated with drains. The controller is now built of ultra reliable micro controller and feature dual adjustment of both cycle and drain. The valve has a large orifice and special solenoid operator section to discharge dust.

Should the valve still get clogged you can service it without removing from the installation. Press the knob at the bottom of the valve to mechanically clear all the sludge. Electronically flush a few times and now it is fully serviced and ready for use.



**Salient features :** • Easy to mount at all locations • Condensate discharging is no more a problem • On / Off timing adjustable • Large orifice for effective drain of dust and condensate • Maintains and cleans drain valve without removing from service • Design Patented



## Level Sensing Drains - LDV Series

Trident's condensate sensing type automatic drain valve is the latest advancement in drain valve technology. These valves sense the condensate level for activation, ensuring absolutely no loss of compressed air and hence results in enormous energy saving. Trident condensate sensing type drain valves are highly efficient and reliable. Fault tolerant system is switching over into timer mode automatically while LDV fails to operate due to sensor failure. Timing cycle is every 2 mins for a period of 2 seconds.

**Salient features :** • Condensate Sensing Type • Zero Air Loss • Design Patented • Noise Free • Fault tolerant system

**Our Mission :** To deliver quality compressed air.

**What we can offer :** A range of solutions to remove impurities from compressed air. Appropriate solutions to manage and reduce energy cost of compressed air.

**Quality :** More than 20 years of global operation, Trident has established a strong market presence through its quality and reliable products. In addition to acquiring ISO 9001 : 2000 status, Trident has approved CE marking for its products. Company has adapted the six sigma process in developing products.

**Technology :** A dedicated team of R&D engineers strive to incorporate latest technology with special emphasis on making products energy efficient.

**Service :** World wide network of business associates and service outlets render prompt service.



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