

AIR FILTER ELEMENTS FOR GAS TURBINE

Sl. No	Item	Part No.	Fitted on	Annual Requirement No. of Tur. x Qty/Tur. x No. of Changes	Computer Code No.		
1.	Pulse Cleaning Cylindrical 26" long	P-15-6334	Fr-5-AJ01 AJ02 AJ03 UQ02 UQ03	7x384x.66=	1775	1150007900	
		Dai-12.75"	NK03 NK04				
		Length-26"					
		P-19-1037	NQ01 to NQ04, AJ05	5x352x0.66=	1161		
		CFI04GT0796	Frame -5 Alternator NQ01 to NQ04	4x48x 0.40 =	76		
			Frame-6 All Air Intake	8x 448x0.66=	2365		
			Frame-6 All Alternator	7x112x0.40=	315		
			Frame-6 AJ08, AJ09	2x144x0.66=	190		
			FR-6 GE (5 Nos.)	5x168x0.66=	554		
			Cylindrical FR-6 Alt. AJ08, AJ09	2x32x0.40=	25		
			Conical FR-6 GE (5 Nos.)	5x64x0.40=	128		
				FR-9 GE (5 Nos.)	5x440x.66=	1452	
		2.	Pulse Cleaning Conical 26" long	KYX-77-0202/710	Frame-6 AJ08, AJ09	2x144x0.66=	190
P-191281							
P-19-1039	Frame-6 GE (5Nos.)			5x168x0.66=	554		
CFI02GT0796	Frame-9 GE (5Nos.)			5x440x.66=	1452		
				Total=	2,196		
3.	Pulse Cleaning Panel Type	U11913604601C	Frame-5 DH03, DH04, DH05, AJ04	4x256x0.66=	675	1150102600	
				Total=	675		

Technical Specification of Cylindrical Type Pulse Cleaning Air Filter Elements for Gas Turbine.

Application

The Air Filters are required for the Pulse Cleaning Type Main Air Intake Filtration System of GE Frame-5 and Frame-6 Gas Turbines of various FEWA Power Stations.

Item : Cylindrical Pulse Cleaning Air Filter for Gas Turbines
(without crank rod)

Make : Donaldson or Equivalent.

Size : Diameter : 324mm. Length : 660.5mm.
Other physical dimensions should be as per Donaldson P/No. P19-1037

Construction

The cover, liner, casing etc. should be made of hot dip galvanized heavy gauge metal for strength and better corrosion protection.

The filter element is fitted to the filter housing floor by means of crank rod. The top end cover should have suitable gasket glued at the top, and the bottom hole in cover should be supplied with suitable stepped rubber/steel gasket to ensure leak free sealing of unfiltered air for the full life of air filter elements. The diameter of hole in the bottom filter cover should be 30mm for ease in fixing crank rod. The pleat tips should be glued and bonded to the inner and outer liners for a minimum of 6 rows.

Specification.

Flow Rate Nominal : 1000 M³/Hr./Element.
Guaranteed Initial Resistance : 30 mm Wg. Maximum
Final Resistance : 1000 mm Wg. Maximum
Maximum Design Pressure : 1000 mm Wg.
Filtration Efficiency : 99.6% standard fine AC dust
Media Area : 21 Sq. Mtrs. Minimum
Paper Media Thickness : 0.35 mm.

Media Type : The filter media should consist of resin impregnated cellulose media with percentage of synthetic media content mentioned in the specification. The media should be suitable for dusty and high humidity weather condition in UAE.

Shelf life : Minimum 2 years.

Guaranteed life : The filters will be guaranteed for 16,000 operating hours or 2 years after installation on the units whichever occurs earlier) for UAE weather condition for delta P not to exceed the alarm limit of 140mm water gauge and against puncturing/failure of filter material.

ANNEXURE-1

Pulse Cleaning Air Filters Element (Cylindrical)

Sl. No.	Requirement as per FEWA Specification	As Offered	Deviations if any with explanation
1	Size Cylindrical (Dia 324 mm) Length (660.5 mm)		
2	Flow Rate Nominal (1000 M ³ /Hr./Element)		
3	Guaranteed Initial Resistance (30 mm Wg Maximum)		
4	Maximum Design Pressure Bursting Stage (1000 mm Wg)		
5	Filtration Efficiency (99.6% standard fine AC dust)		
6	Media Area (21 M ² Minimum)		
7	Media type (Cellulose resin impregnated)		
8	Paper Media Thickness (0.35mm)		
9	Shelf life. (Minimum 2 years.)		
10	Guaranteed life (The filters will be guaranteed for minimum life of 16,000 operating hours or 2 years after installation on the units (whichever occurs earlier) for UAE weather condition, for delta P not to exceed the alarm limit of 140mm water gauge and against puncturing/failure of filter material)		

Important Note:

Giving cross reference of supplied documentation or catalogue is not acceptable.

Signature :
Stamped :

**TECHNICAL SPECIFICATION OF PULSE CLEANING
FILTER ELEMENT KIT FOR DOWN FLOW GDX AIR INTAKE SYSTEM**

Description of Item
Cylindrical & Conical Filter Element Kit of for Donaldson make down flow GDX system for Air Intake of GE Frame-6 & Fr-9 Gas Turbines of FEWA Power Stations

Make & P/No.

Donaldson Make P/No.: P19-1037 & P19-1039 or Equivalent
(without crank rod)

Nominal Size:

Conical : Dia = (445.5 mm x 324 mm) and L = 660.5 mm
Cylindrical : Dia = 324 mm, L = 660.5 mm

Construction:

The cover, liner, casing should be made of hot dip galvanized heavy gauge metal for strength and superior protection against corrosion.

The end covers should have suitable weather resistant gaskets glued to ensure effective sealing against unfiltered air leakage. The bottom hole in the cylindrical element should be dia 30 mm and should be provided with suitable rubber/steel gasket washers. The pleat tips should be glued and bonded to the inner and outer liners for minimum of six rows.

Media Type:

The filter media should consist of resin impregnated cellulose media with percentage of synthetic media content mentioned in the specification. The media should be suitable for dusty and high humidity weather conditions of U.A.E.

General Specifications:

Flow rate Nominal	:	47m ³ /min/pair
Guaranteed Initial delta P	:	25 mm W.G. Maximum.
Maximum design delta P	:	Maximum resistance paper: 1000mm WG
Media Area	:	W/O rupture.
Paper Media Thickness	:	47M ² /Pair
Filtration efficiency	:	(0.35mm)
Shelf life	:	SAE J 726 - Over 99.9% ACF - test dust
Guaranteed life	:	Ashrae 52-76 - Areastance approx. 100%
	:	dust spot eff. At 4" W.G. 98%
	:	Minimum 2 years
	:	The filters will be guaranteed for minimum life of 16,000
	:	operating hours or 2 years after installation on the units
	:	whichever occurs earlier for UAE weather condition, for
	:	delta P not to exceed the alarm limit of 140mm water gauge
	:	and against puncturing/failure of filter material

Pulse Cleaning Air Filters Elements (Cylindrical and Conical)

ANNEXURE-2

57

Sl. No.	Requirement as per FEWA Specification	As Offered	Deviations if any. With explanation
1	Size:		
	Conical (Dia 445.5 mm x 324 mm) Length (660 mm) Cylindrical (Dia 324 mm) Length 660.5 mm)		
2	Flow Rate Nominal (47 M ³ /Min/Pair)		
3	Guaranteed Initial Resistance (25 mm Wg Maximum)		
4	Maximum Design Pressure Bursting stage (1000 mm Wg) For each element)		
5	Filtration Efficiency (SAE J726- Over 99.9% ACF test dust Ashrae 52-76-Arrestance Approx.- 100% Dust Spot efficiency at 4" WG-98%		
6	Media Area (47 M ² /Pair)		
7	Paper Media Thickness (0.35 mm.)		
8	Media type (Cellulose resin impregnated)		
9	Shelf life. (Minimum 2 years.)		
10	Guaranteed life (The filters will be guaranteed for minimum life of 16,000 operating hours or 2 years after installation on the units whichever occurs earlier for UAE weather condition, for delta P not to exceed the alarm limit of 140mm water gauge and against puncturing/failure of filter material)		

Important Note:

Giving cross reference of supplied documentation or catalogue is not acceptable.

Signature : _____
Stamped : _____

General Technical Conditions

1. The Following details in respect of offered item should be supplied along with the offer: -
 - i) Printed leaflet and drawing.
 - ii) Specification of filter element and media used including its origin and make.
 - iii) Shelf life, from the date of shipment, predicted life and guaranteed life taking into consideration the environmental conditions in FEWA Power Stations.
 - iv) Test results as per relevant test specification performed by an authorized laboratory.
 - v) All deviations from FEWA specifications should be comprehensively stated in the attached annexures. Any item not mentioned in this list of deviation will be assumed to be exactly as per FEWA specifications.
2. The tenderer should supply one number free sample of each item quoted along with the offer and these samples will be retained for comparison with actual supply.
3. The filter element should have been manufactured recently within 6 months from the date of delivery of filters and date of manufacture stamped on each filters.
4. Proof of performance should be submitted along with the details such as list of gas turbines end users in Middle East where similar make filters have been successfully used with date and maximum running hours obtained.
5. The tenderer should provide proof of approval of the product by the original equipment manufacturer, if any.
6. FEWA reserves the right to witness the test performance and inspect manufacturing facilities and quality control checks at place of manufacture. The manufacturer should inform 3 weeks in advance before shipment of filters in order that two Engineers can go for inspection on FEWA account.
7. The filters should be packed in water proof cardboard boxes and the cardboard boxes shrink wrapped in convenient numbers with polythene sheet and palletized for ease in transportation.
8. Prices for filters of alternate media, if quoted, should be separately indicated.
9. Copies of FEWA Technical Specifications and technical conditions duly signed, dated and stamped should be submitted along with the offer.
10. No overwriting/unattested cuttings will be accepted in the technical specification/the bid