

TITLE SHEET

SPECIFICATION FOR

Clean-Out Conveyor Drive with Gear reducer

(For Gravimetric/Volumetric Feeder)

Specification No. : GI-187
PGMA : 65-XXX

Revision No.:05

05	18-11-2003	Annexure-1 LT motor data sheet added	
04	24.01.2002	Sheet 10/10. Pt.2 "After Functional testing" deleted; Cl.3.1 added in sheet no.3/10& specification prepared in "word".	-Sd-
03	16.01.2001	Hub & Shear Pin As Spares Added.	-sd-
02	08.07.1997	Sl.No.12 was Gear Reduction Ratio Of the Geared Motor = 5:1 (Total Reduction 1041:1)	-sd-
01	08.07.1997	Point No. 5 & 6 Altered.	-sd-
00	-	First Release	-sd-
Rev. No.	Date	Revision Statement	Checked & Approved

	Name	Signature	Date
Prepared	S.Manivannan	-Sd-	25-01-2002
Checked	S.Selvaraju	-Sd-	25-01-2002
Approved	S.V.Sivaramulu	-Sd-	25-01-2002





Specification for
**Clean-Out Conveyor Drive With
Gear Reducer**

Spec. No.
GF-187/05

Page
2/12

Scope of work

This specification covers the requirement for design, supply, manufacture, testing, marking and identification, packing for shipment and delivery of the items listed

Below.

- Clean-out conveyor drive AC geared motor with gear box.
- One torque hub
- Two shear pins

The extent of supply stated here in is not necessarily exhaustive and shall not relieve the vendor from his responsibility to provide goods and services necessary to satisfy the performance criteria and guarantees specified.

Application : Used for running 36" & 24" gravimetric feeder clean-out conveyor at constant speed.

Duty Class : Continuous and intermittent.
(Minimum 50 Starts Per Day)

Consisting Of :

- 1.0 Clean-out conveyor
Ac geared motor : Please refer sheet no. 05/12 & 06/12 of this specification.
- 2.0 Gear box.....: Please refer sheet no. 07/12, 08/12 & 09/12 of this specification for over all dimensions.
- 2.1 Gear box reduction : 1041:1 (Please refer table in sheet no. 07/12) ratio
- 2.2 Gear arrangement : Helical and worm gear arrangement.
Approx. centre distance of worm gearing is 3.5 inches.
- 2.3 Output shaft and mating flange dimensions are strictly to be maintained as per the sketch shown on this specification so as to match with the mating components which are getting manufactured at BHEL- Trichy.
- 2.4 Please refer section-VV shown no. 09/12 of this specification. The shear pin should fail if the torque exceeds the value provided in the table corresponding to the size of feeder. The failure of shear pin should simultaneously actuate the micro switch which is to be used in customer annunciator circuit. The arrangement shown is suggestive only. The supplier shall suitably design the arrangement.



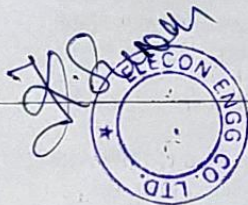


Specification for
**Clean-Out Conveyor Drive With
Gear Reducer**

Spec. No.
GF-187/05

Page
3/12

- 2.5 Dimensions with Asterisk (*) marks should be strictly maintained. Other dimensions may be altered to suit the gearbox design but got approved by B.H.E.L, prior to proceeding with manufacture.
- 2.6 Only glass type oil level indicator must be provided. Dipstick type of arrangement is not acceptable.
- 3.0 **Along with the offer, the supplier shall submit the following documents for evaluation in triplicate.**
- A. Dimensional general arrangement drawing showing AC geared motor and gear box with bill of materials.
- B. Cross sectional drawings of AC geared motor and gearbox showing all the internals and spare parts with overall dimensions and with bill of materials.
- C. A life guarantee certificate for 40,000 hours for gears and shaft.
- D. A list of bearings used in the total system. The list shall indicate the make, size and type (whether sealed or non-sealed) of bearing.
- E. A list showing all the oil seals, o-rings and circlips used in the total system. The list shall indicate the description, quantity, make, size, type, etc.
- F. 3 Years O & M spare parts list along with pricing required for the total system. The list shall indicate the description, quantity, part no. & Ref. Drawings of the components.
- G. Quality assurance plan shall be submitted by the supplier for raw material; in process & final Assy. QP shall be submitted for AC geared motor and gear box individually.
- H. The documents as mentioned in sheet No. 05/12 & 06/12 of this specification for AC geared motor.
- I. Calculation for shear key diameter with sketch; Material of construction with relevant Indian standard & clause no.





Specification for
**Clean-Out Conveyor Drive With
Gear Reducer**

Spec. No.
GF-187/05

Page
4 / 12

4.0 The successful bidder shall submit the following documents in triplicate.

- A. Dimensional general arrangement drawing and cross sectional drawing as called for in 3A & 3B submitted by the bidder shall be modified in line with BHEL's comments and got approved before going for production.
- B. Quality assurance plan as called for in 3.C submitted by the bidder shall be modified in line with BHEL's comments for raw materials, in process and final Assy. Modified QP shall be for AC geared motor and gear box individually and got approved by BHEL.
- C. Test certificate for no load and full load for each Assy. (The motor should be designed for 50 starts per day.)
- 5.0. Catalogues, preservation (storage) procedure and O&M manuals for AC geared motor and gearbox shall form part of the supply. Number of copies required will be specified in the purchase order. The catalogues and manuals shall be printed (Black & White) and supplied in bound volumes. Three copies shall be sent to BHEL for advance information and one copy must accompany along with each shipment. Balance copies shall be sent thro' regular despatch.
- 6.0. Other Information's Required :-
 - A. Weight of AC geared motor.
 - B. Weight of gearbox.
 - C. Lubrication details.
 - D. Painting details.
 - E. Coupling details in between AC geared motor & gearbox.
 - F. Recommended storage and preservation procedure prior to Assy, after Assy, but prior to regular running.

7.0 Packing:-

The total drive assembly should be properly covered with thick tear-proof polythene sheets and despatched in suitable moisture-proof and tamper-proof wooden cratings.





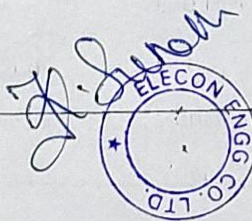
Specification for
**Clean-Out Conveyor Drive With
Gear Reducer**

Spec. No.
GF-187/05

Page
5/12

Clean-Out Conveyor Drive (AC Geared Motor)

1. Application : To drive the clean-out conveyor chain.
2. Motor rating : 0.25 KW
3. Power supply for the drive : 415 V \pm 10%, 50 HZ \pm 5%, 3 ϕ
4. Ambient temperature : 50° C
5. Duty cycle : Continuous & intermittent (minimum 50 starts per day)
6. Speed of drive at full load : 950 RPM
7. Method of starting : DOL
8. Mounting & position : Horizontal flange mounting.
9. Type of enclosure : TENV
10. Degree of protection : IP 55
11. Class of insulation : B or F
12. Total gear reduction Ratio : 1041 \pm 5 : 1
13. Temperature rise over 50°c Ambient : Shall be limited to that of class 'B' by resistance method.





Specification for
**Clean-Out Conveyor Drive With
Gear Reducer**

Spec. No.
GF-187/05

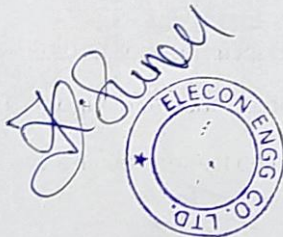
Page
6/12

General

1. Geared motor will be assembled to a gear box assy. for a total reduction ratio as per table shown in sheet no. 07/12
2. Motors to be supplied with lifting eye bolts.
3. Motor supplier shall fully comply with the enclosed Lt motor specification in addition to the above points.

Documents required from vendor along with offer :-

1. Certified dimension drawing.
2. Certified connection diagram.

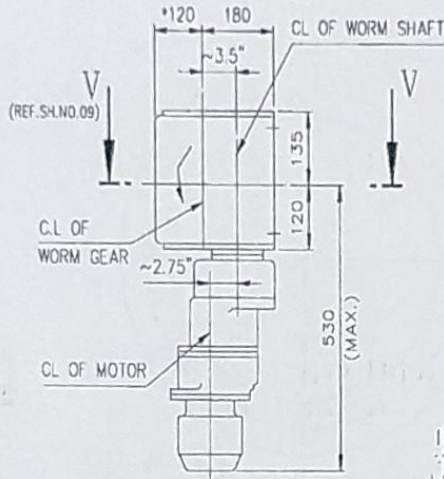




Specification for Clean-Out Conveyor Drive With Gear Reducer

Spec. No.
GF-187/05

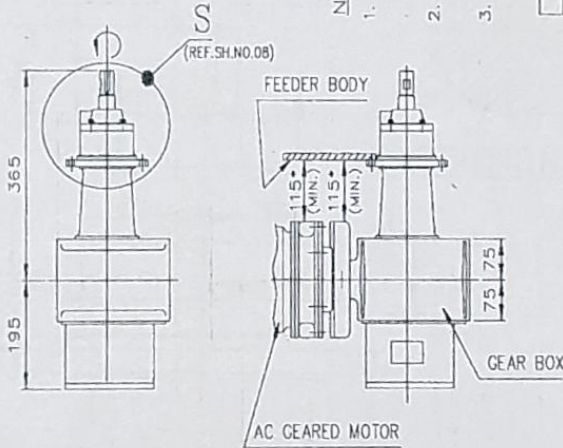
Page
7/12



NOTE:—

1. AC GEARED MOTOR & GEAR BOX FLANGE MATING DIMENSIONS TO BE SUITABLY DECIDED BY THE SUPPLIER.
2. TERMINAL BOX GLAND OPENING SHALL HAVE 1/2" NPT(F) THREAD PROVISION.
3. CONDUIT CONNECTOR 1/2" NPT(M) X 1/2" CONDUIT ENTRY TO BE PROVIDED WITH LOCKNUT.

SERIAL NO.	TOTAL REDUCTION RATIO	REMARKS
01	1041:1	9642413400



ALL DIMENSIONS ARE IN MM

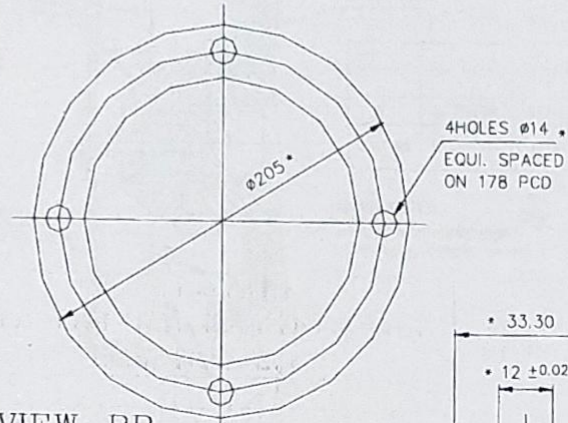




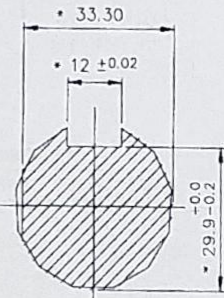
Specification for
Clean-Out Conveyor Drive With
Gear Reducer

Spec. No.
GF-187/05

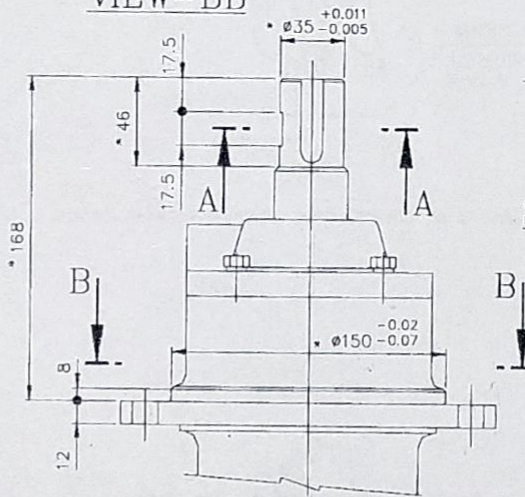
Page
8/12



VIEW - BB

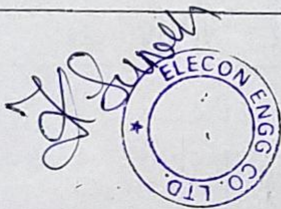


SECTION - AA



DETAIL - S

ALL DIMENSIONS ARE IN MM



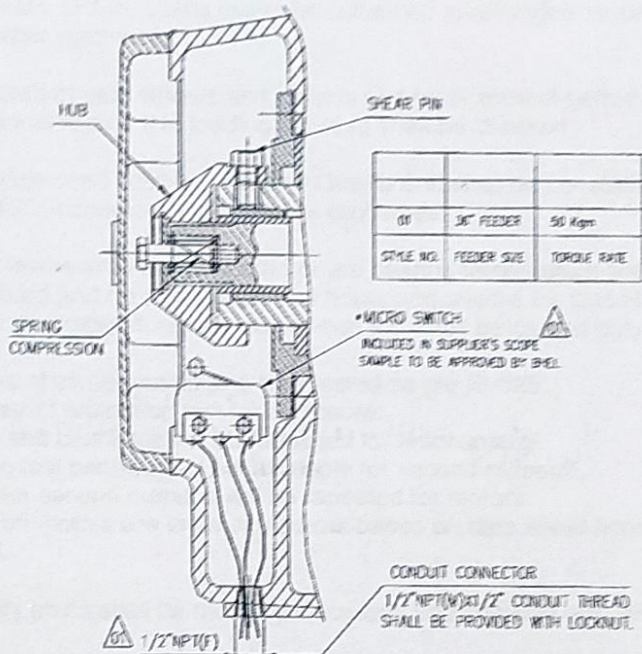


Specification for Clean-Out Conveyor Drive With Gear Reducer

Spec. No.
GF-187105

Page
9/12

THE SHEAR PIN & MICRO-SWITCH ARRANGEMENT SHOWN IS SUGGESTIVE ONLY.
SHEAR PIN SHOULD SHEAR OFF IF THE TORQUE EXCEEDS THE VALUE PROVIDED
IN THE TABLE CORRESPONDING TO THE SIZE OF FEEDER.

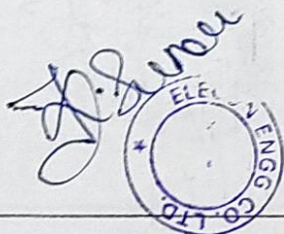


SECTION - VV (PARTIAL)

*NOTE :-

CONTACT RATING OF SHEAR PIN MICRO-SWITCH :- 5A AT 240V AC OR 0.5A AT 220V DC.

ALL DIMENSIONS ARE IN MM





Specification for
**Clean-Out Conveyor Drive With
Gear Reducer**

Spec. No.
GF-187/05

Page
10/12

Annexure to purchase Specn. GF-187
(C.O. Conveyor Drive with Reducer)

1. All Gears, pinion, shafts are to be subjected to ultrasonic testing and MPI after machining.
2. Backlash of gear wheels and pinions and teeth contact before functional testing (No loading run test) shall be checked.
3. Materials used shall be of tested Quality and shall be co-related with TCs for mechanical and chemical properties.
4. Gear boxes shall be run tested till the bearing temperature are stabilised and for a minimum of 4 hours and checks for smooth running, temperature rise, noise level etc. shall be carried out.
5. Motors shall be routine and type tested as per IS-325.
Degree of protection test for enclosure:
Type test certificate will be furnished for first numeral.
If type test certificate is not available for second numeral,
Test for second numeral will be repeated for motors.
Test on motors are to be carried out based on data sheet approved by BHEL.
6. Quality plans shall be mutually discussed and finalised with BHEL.

J. S. Srinivasan



Specification for
**Clean-Out Conveyor Drive With
Gear Reducer**

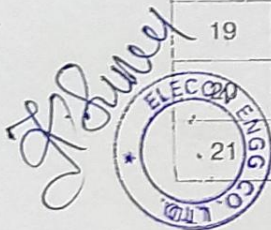
Spec. No.
GF-187/05

Page
11 / 12

Annexure-I
LT motor data sheet

Supplier to fill up & submit along with the offer for evaluation

Sl.No.	Characteristics	Vendor's Confirmation
01	Application	
02	Manufacturer	
03	Type & Frame size and Degree of protection	
04	Rated out put in KW & speed	
05	Rated Voltage, Frequency & Phase	
06	Full load current	
07	Full Laod efficiency and power factor	
08	Duty cycle	
09	Rated torque	
10	Starting current	
11	Starting torque in %age of full load torque	
12	Pull up torque in %age of full load torque	
13	Pull out torque in %age of full load torque	
14	No load starting time	
15	Locked rotor withstand time at rated voltage	a)Hot b)Cold
16	Locked rotor withstand time at minimum starting voltage	a)Hot b)Cold
17	Locked rotor withstand time at 110% of rated voltage	a)Hot b)Cold
18	Starting time at minimum starting voltage with mechanism coupled	
19	Starting time at rated voltage with mechanism coupled	
	Minimum permissible starting time	
	Stator thermal time constant	





Specification for
**Clean-Out Conveyor Drive With
Gear Reducer**

Spec. No.
GF-187/05

Page
12 / 12

Sl.No.	Characteristics	Vendor's Confirmation
22	Stator winding connection	
23	Class of insulation & temperature rise	
24	Type & number of terminals brought out	
25	Resistance per phase	
26	Quantity & Power consumption of space heater	
27	Direction of rotation	
28	Bearing make and type	Drive End: Non Drive end:
29	Lubricant quantity, Grade & Recommended interval of Lubrication	
30	Type of mounting & shaft orientation	
31.0	Terminal box	
31.1	Location & angle of rotation	
31.2	Gland size for stator winding	
31.3	Gland size for space heater	
31.4	Cable Entry	
32	GD ² of motor (in Kg-M ²)	
33	Total weight of motor (in kg)	
34	Anticipated bearing life	
35	Method of connection to driven equipment	
36	Limiting rotor temperature for determining safe stall time	
Vendor's Signature with office seal		






Specification for
Main Drive with Gear Reducer for 36" Gravimetric Feeder
MPC System with Two Tacho generators and VFD motor

GF-351
Rev. 06

BHARAT HEAVY ELECTRICALS LIMITED

TIRUCHIRAPPALLI-620 014

Fuel Systems/PE (FB)

06	26/08/2016	Updated for indicating reference to annexure-1 for project specific Energy Efficiency Class requirements	Arul Prabhu.R
05	31/12/2014	Updated for standard IS-12615/ IEC 60034-30, motor efficiency & Vibration clauses, location of earthing points, TTR requirements	Arul Prabhu.R
04	02/04/2011	In page No.04/15 CI.No.5.4.0 Reduction ratio 80:1 (Style-04) added.	J.V.V.A.K
03	05/10/2010	In page No.04/15 CI.No.5.4.0 Reduction ratio 100:1 added.	J.V.V.A.K
02	24/08/2007	In page No.04/15 CI.No.5.4.0 Reduction ratio 203:1 added	S.Selva
01	23/10/2006	In page 15/15, note 1 altered.	J.V.V.A.K.
Rev. No.	Rev. Date	Description	Chd. & Appd.

	Name	Signature	Date
Prepared	JVVA / DVK / DMB		
Checked	JVVA / DVK / DMB		
Approved	SDB / KAK		



Specification for
Main Drive with Gear Reducer for 36" Gravimetric Feeder
MPC System with Two Tacho generators and VFD motor

GF-351
Rev. 06

CONTENTS:

Section	Description	Remarks
1.0	Scope of work	
2.0	Application	
3.0	VFD Motor	
4.0	Tacho generator	
5.0	Gear reducer	
6.0	Testing	
7.0	Documents	
8.0	Other information required	
9.0	Packing	
10.0	Annexures	



Specification for
**Main Drive with Gear Reducer for 36" Gravimetric Feeder
MPC System with Two Tacho generators and VFD motor**

**GF-351
Rev. 06**

1.0 SCOPE OF WORK

1.1 This specification covers the requirements for the design, supply, manufacture, testing, marking and identification, packing for shipment and delivery of the items listed below.

- Feeder main drive AC motor with tacho generators.
- Gear box

1.2. The extent of supply stated herein is not necessarily exhaustive and shall not relieve the vendor from his responsibility to provide goods and services necessary to satisfy the performance criteria and guarantees specified.

2.0 APPLICATION

2.1 Feeder main drive AC motor and gear box used for driving the conveyor belt (loaded with coal) of 36" Gravimetric feeders at varied speeds.

3.0 AC INDUCTION MOTOR – (Suitable for variable frequency control application)

- 3.1 Motor rating : 7.5 KW
- 3.2 Applicable standard : IS-12615/ IEC 60034-30 (All routine & type test as per relevant standards shall be performed)
- 3.3 Type of mounting : Vertical flange mounting
- 3.4 Type of motor : Squirrel cage induction motor – Inverter duty
- 3.5 Enclosure protection : IP-55
- 3.6 Power supply : Refer to Annexure-A
- 3.7 Speed range required : 0-1400 RPM corresponding to demand signal of 4-20 mA.
- 3.8 Allowable variation in speed : ± 5 RPM
- 3.9 Duty cycle : Continuous (S1)
- 3.10 Type of enclosure : Totally enclosed fan cooled
- 3.11 Method of starting : Direct on line
- 3.12 Class of insulation : Class-F, Temperature rise limited to Class-B
- 3.13 Full load torque : 3.8 Kg-m (minimum)



Specification for
**Main Drive with Gear Reducer for 36" Gravimetric Feeder
MPC System with Two Tacho generators and VFD motor**

**GF-351
Rev. 06**

- 3.14 Starting torque : 200% full load torque (minimum)
- 3.15 Efficiency Clause : Motor shall be Energy Efficient motors, For applicable Efficiency class refer Annexure-1 for project specific requirements.
- 3.16 Vibration shall be limited within the limits prescribed in IS:12075 / IEC 60034-14.
- 3.17 Motor body shall have two earthing points on opposite sides.
- 3.18 Motor winding shall be VPI (vacuum pressure impregnation) treated.
- 3.19 Motors shall be suitable for variable frequency control and shall match with the drive in respect of over voltage / spikes generated by the controller.
- 3.20 The windings shall be VPI treated and two coat enamelled. These motors shall be sized to operate satisfactorily under lowest speed conditions.

4.0 TACHOGENERATOR:

- 4.1 Two numbers of Tacho generator shall be in-built at the drive end of AC motor to give redundant isolated output as given below :
- 4.2 Output into 10K Ohm load : 45 V AC \pm 5% at 1000 RPM
- 4.3 Number of poles : 24
- 4.4 Output waveform : Sinusoidal

5.0 GEAR REDUCER:

- 5.1.0 Type : Large speed reduction, flange mounted compact gear reducer with one or two stages of spur or helical gears and last stage of worm gear reduction. The approximate centre distance of worm gearing is 184 mm (7 1/4").
- 5.2.0 Duty class : Continuous
- 5.3.0 Direction of rotation : Should be able to rotate in both directions
- 5.4.0 Reduction ratio :
- 5.4.1 Style 01 : 128:1
- 5.4.2 Style 02 : 203:1
- 5.4.3 Style 03 : 100:1
- 5.4.4 Style 04 : 80:1
- 5.5.0 Arrangement & Dims: Refer Sketch nos. 1, 2, 3 & 4.
- 5.6.0 Function : The gear reducer is used to drive the conveyor belt of gravimetric feeders.



Specification for
**Main Drive with Gear Reducer for 36" Gravimetric Feeder
MPC System with Two Tacho generators and VFD motor**

**GF-351
Rev. 06**

Since gravimetric feeder is a variable slow speed equipment, VFD motor will be connected to the input side of gear reducer and the output shaft of the gear reducer will be coupled to the drive pulley of the feeder conveyor belt. The gravimetric feeder is a constant torque equipment.

.TECHNICAL REQUIREMENTS:

- 5.7.1 Output shaft and mating flange dimensions are strictly to be maintained as shown in the sketches 1, 2, 3 & 4 (page 11, 12, 13 & 14 of this specn.).
- 5.7.2 Dimensions with asterisk marks (*) should be strictly maintained. Other dimensions may be altered to suit the gear box design with the approval of BHEL.
- 5.7.3 In addition to dipstick arrangement, glass type oil level indicator must also be provided.
- 5.7.4 All gears, pinion, shafts are to be subjected to ultrasonic testing and MPI after machining.
- 5.7.5 Backlash of gear wheels and pinion and teeth contact before functional testing (no load run test) shall be checked.
- 5.7.6 Materials used shall be of tested quality and shall be correlated with test certificates for the mechanical and chemical properties.
- 5.7.7 Gear box shall be run tested till the bearing temperatures are stabilised and for a minimum of 4 hours and checks for smooth running, temperature rise, noise level etc. shall be carried out.

6.0 TESTING:

- 6.1.0 The total drive assembly with gear box should be trial run for minimum 8 hours continuously and observed for its smooth, noiseless and vibration-free running.
- 6.2.0 Test certificate for no load test for each assembly shall be furnished
- 6.3.0 Applicable QP for feeder drive Assy. QA:CI:STD:QP:21 (Latest revision)

7.0 DOCUMENTS:

- 7.1.0 The following documents shall be submitted in triplicate along with the offer.
- 7.1.1 Compliance for each clause of this specification & applicable Quality Plan.



Specification for
**Main Drive with Gear Reducer for 36" Gravimetric Feeder
MPC System with Two Tacho generators and VFD motor**

**GF-351
Rev. 06**

- 7.1.2 Compliance for flange dimensions in the enclosed Sketch no.-05.
- 7.1.3 Catalogues for the offered drives.
- 7.1.4 Dimensional general arrangement drawing with bill of materials and total weight.
- 7.1.5 Exploded view of the gear box showing all the internals and spare parts with overall dimensions and bill of materials. The bill of materials shall also contain details of bought-out items like bearings, oil seals, circlips etc.
- 7.1.6 A list of spare parts for 3 years operation with details for ordering like part number, quantity and price.
- 7.2.0 The following documents shall be submitted in triplicate by the Successful Bidder, within 15 days from PO, for BHEL's review / approval.
- 7.2.1 Motor data sheet and characteristic curves in Annexure - A .
- 7.2.2 Tachogenerator data sheet and characteristic curves in Annexure - C.
- 7.2.3 Dimensional drawing for motor & Tachogenerator.
- 7.2.4 Type test certificate for applicable motor frame size. Type test certificates not earlier than 5 years from date of enquiry.
- 7.2.5 Dimensional general arrangement of total assembly drawing and cross sectional drawing with detailed bill of material as called for in clauses 7.1.4 and 7.1.5 and submitted by the bidder shall be modified inline with BHEL's comments and BHEL's approval shall be obtained before manufacture.
- 7.2.6 Twenty numbers of Operation and maintenance manuals covering all aspects of storage, preservation, installation, operation and maintenance shall form part of the supply.

8.0 OTHER INFORMATION REQUIRED:

- 8.1.0 Weight of motor.
- 8.2.0 Weight of gear box.
- 8.3.0 Lubrication details.
- 8.4.0 Painting details.
- 8.5.0 Mounting arrangement of tachogenerator on the output shaft of AC motor.



Specification for
**Main Drive with Gear Reducer for 36" Gravimetric Feeder
MPC System with Two Tacho generators and VFD motor**

**GF-351
Rev. 06**

8.6.0 Recommended storage and preservation procedure prior to assembly and after assembly but prior to regular running.

9.0 PACKING:

The total drive assembly should be packed in such a way that it should not get damaged during transport. The total assembly should be properly covered with thick tear-proof polythene sheet and despatched in suitable moisture-proof and tamper proof wooden crates.



Specification for
**Main Drive with Gear Reducer for 36" Gravimetric Feeder
MPC System with Two Tacho generators and VFD motor**

**GF-351
Rev. 06**

10.0 DATA SHEETS

PURCHASE ORDER No. & DATE :

10.1 ANNEXURE - A

10.1.0 Technical Data Sheet for AC motor suitable for VFD application

10.1.1 Application : Gravimetric Feeder main drive motor

10.1.2 Manufacturer :

10.1.3 Type, Frame size, Duty cycle :

10.1.4 Type of mounting : Vertical Flange Mounting

10.1.5 Degree of protection and
method of cooling : IP-55 TEFC

10.1.6 Rated output in KW and
speed in RPM :

10.1.7 Ambient Temperature : 50°C

10.1.8 Rated Voltage & Frequency : 415V, 3 Phase, 50HZ

10.1.9 Allowed variation in
Voltage : ± 10%
Frequency & : ± 5%
Combined variation : 10% Absolute sum

10.1.10 Full load current :

10.1.11 Rated torque :

10.1.12 Starting torque in % of FLT :
(FLT - Full Load Torque)

10.1.13 Pull-up torque in % of FLT :

10.1.14 Pull-out torque in % of FLT :

10.1.15 No Load starting time :

10.1.16 Minimum permissible starting : 80% of Rated Voltage
voltage



Specification for
**Main Drive with Gear Reducer for 36" Gravimetric Feeder
MPC System with Two Tacho generators and VFD motor**

**GF-351
Rev. 06**

full load at 75% R.V

10.1.29 Permissible vibration limits :

10.1.30 Class of insulation :

10.1.31 Material and treatment of insulation :

10.1.32 Temperature rise by resistance method :

10.1.33 Stator winding connection :

10.1.34 No.of terminals brought out :

10.1.35 Terminal box location and angle of rotation :

10.1.36 Fault withstanding capability:

10.1.37 Bearings Drive end Non-drive end

a) Type of bearing :

b) Manufacturer :

c) Model number :

d) Life in hours :

e) Recommended lubricant :

10.1.38 Method of coupling with driven equipment :

10.1.39 Weight of motor :

10.1.40 Documents enclosed (After P.O)

a) Speed - Torque curve at 110%, 100%, 90% & 80% Rated Voltage

b) Starting time Vs Speed curve

c) Current Vs Time curve

d) Speed Vs Current curve

e) Thermal withstand curve for hot and cold condition

f) Efficiency, power factor Vs Load curve

g) Dimensional drawing and terminal wiring drawing.

Signature of Vendor Representative



Specification for
Main Drive with Gear Reducer for 36" Gravimetric Feeder
MPC System with Two Tacho generators and VFD motor

GF-351
Rev. 06

PURCHASE ORDER No. & DATE :

10.2 ANNEXURE - B

9.3.0 Technical Data Sheet for Tachogenerators

9.3.1 Make & type of Tachogenerator :

9.3.2 Model number :

9.3.3 Class of insulation :

9.3.4 Output voltage with variation :
in output voltage

9.3.5 Output voltage waveform :

9.3.6 Frequency of output voltage :

9.3.7 Max. load resistance at output :

9.3.8 Stator resistance :

9.3.9 Linearity :

9.3.10 Documents (After P.O)

- a) Dimensional drawing for the tachogenerator
- b) Output voltage & frequency Vs Speed.

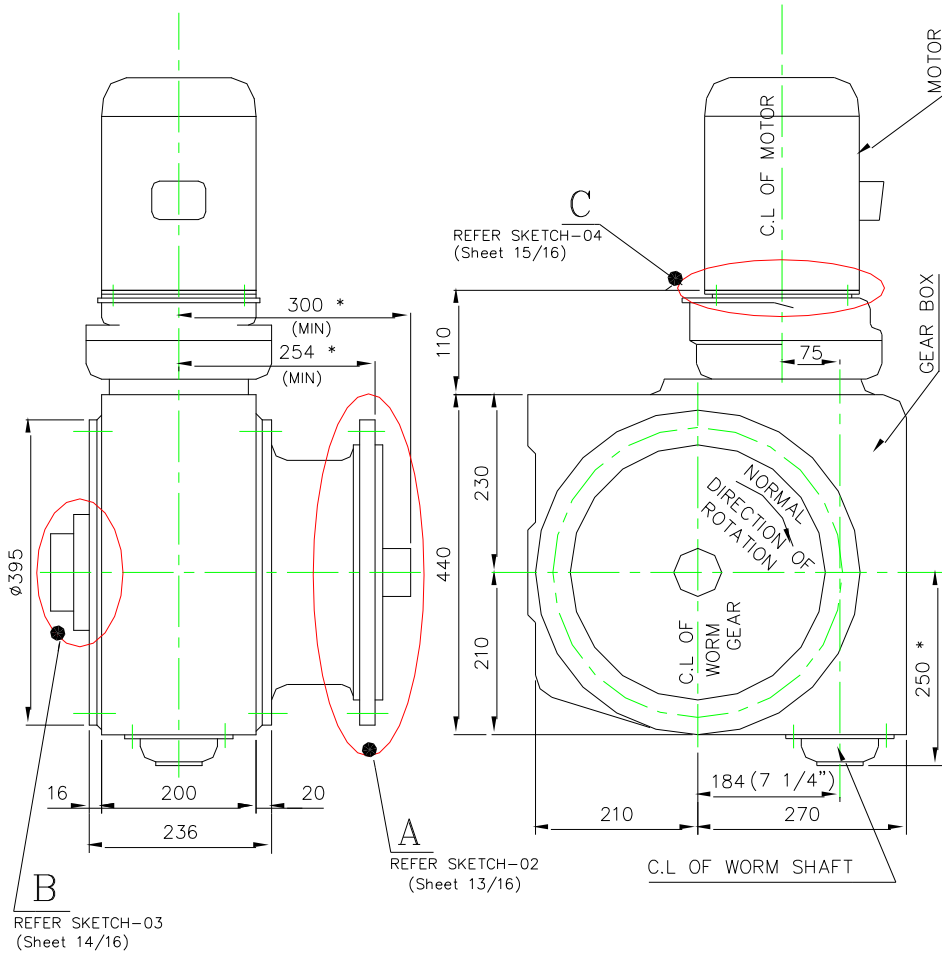
Signature of Vendor Representative with seal



Specification for
Main Drive with Gear Reducer for 36" Gravimetric Feeder
MPC System with Two Tacho generators and VFD motor

GF-351
Rev. 06

SKETCH NO: - 01



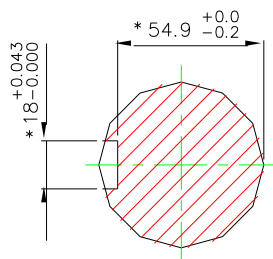
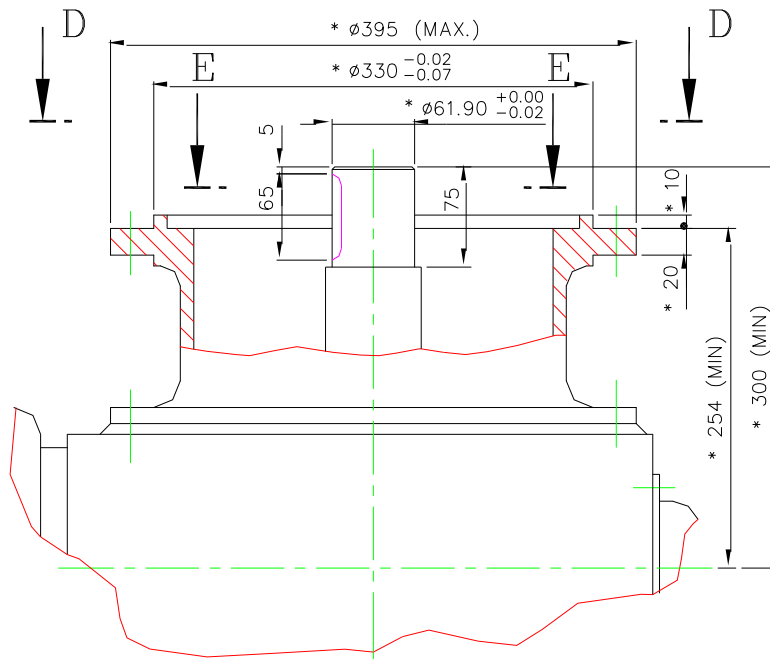
ALL DIMENSIONS ARE IN MM



Specification for
Main Drive with Gear Reducer for 36" Gravimetric Feeder
MPC System with Two Tacho generators and VFD motor

GF-351
Rev. 06

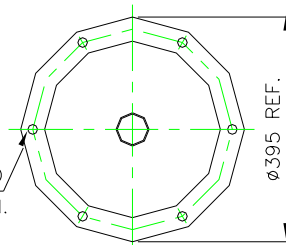
SKETCH NO: -02



SECTION-EE

DETAIL-A

*
6HOLES $\phi 18$ ON 362 PCD
EQUI SPACED AS SHOWN.



VIEW-DD

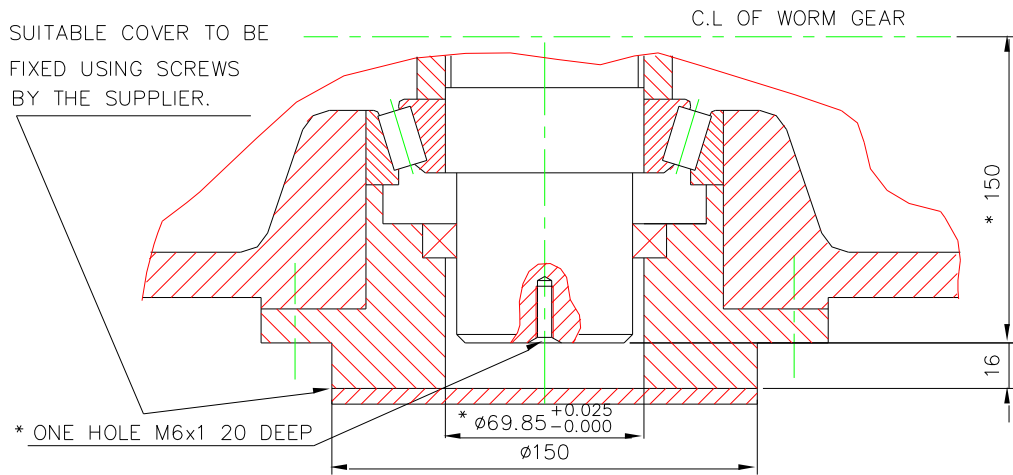
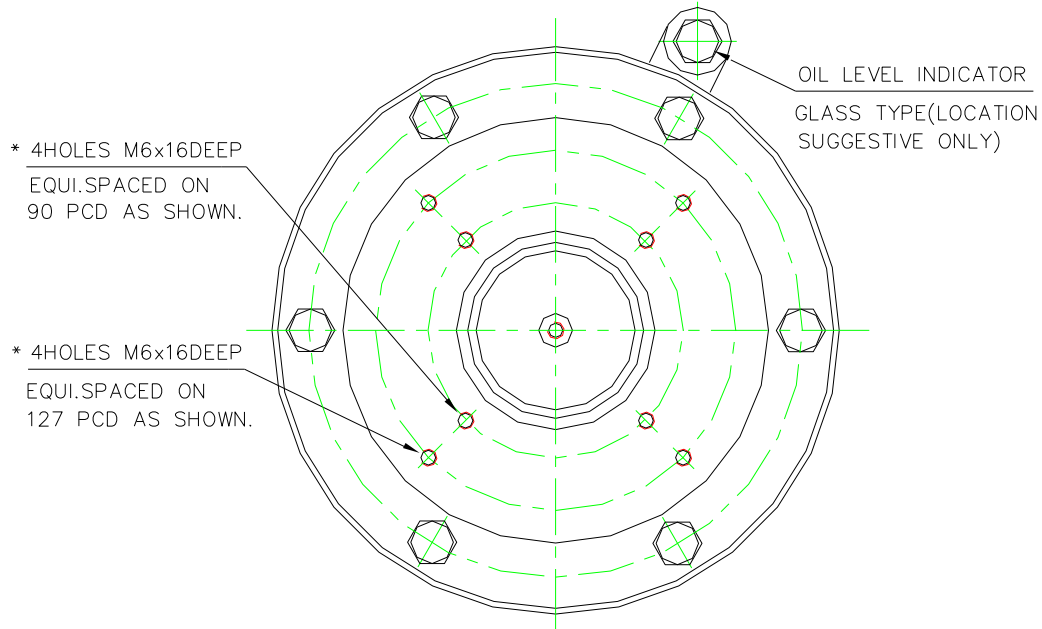
ALL DIMENSIONS ARE IN MM



Specification for
Main Drive with Gear Reducer for 36" Gravimetric Feeder
MPC System with Two Tacho generators and VFD motor

GF-351
Rev. 06

SKETCH NO.-03

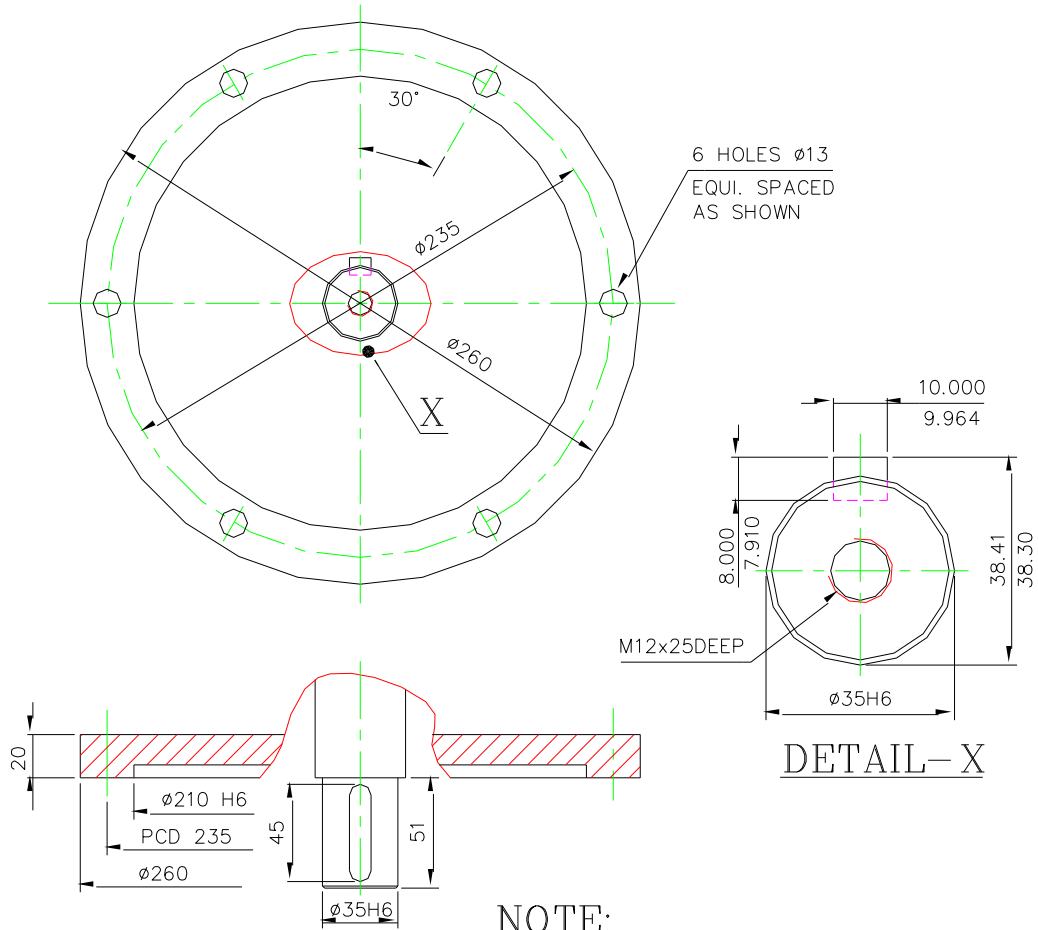


DETAIL-B

ALL DIMENSIONS ARE IN MM

SKETCH NO. - 04

MATING FLANGE AND SHAFT DETAIL (GEAR BOX INPUT SIDE)



DETAIL - C

NOTE:

THE DIMENSIONS OF THE INPUT SIDE FLANGE AND PINION OF THE GEAR BOX SHALL MATCH WITH THE MATING DIMENSIONS OF VFD MOTOR AS SHOWN ABOVE.

ALL DIMENSIONS ARE IN MM

