

World Class Systems & Solutions



■ Sales & Service Network of Fuji Electric Group in India



■ FGEM has over 1000+ systems operating Worldwide



- | | |
|-----------------|-----------------|
| 1. NIGERIA | 17. IRAN |
| 2. MALAYSIA | 18. BANGLADESH |
| 3. NEPAL | 19. ITALY |
| 4. JORDAN | 20. PRAGUE |
| 5. SYRIA | 21. VIETNAM |
| 6. DUBAI | 22. KOREA |
| 7. SAUDI ARABIA | 23. CAMEROON |
| 8. SAUDI ARABIA | 24. IVORY COAST |
| 9. USBEKISTAN | 25. ZAMBIA |
| 10. GUINEA | 26. SRILANKA |
| 11. INDONESIA | 27. ANGOLA |
| 12. GREECE | 28. ARGENTINA |
| 13. KUWAIT | 29. PAKISTAN |
| 14. CHINA | 30. AFGHANISTAN |
| 15. KENYA | 31. IRAQ |
| 16. RUSSIA | 32. UGANDA |

FUJI GEMCO PRIVATE LIMITED, INDIA

JVC OF FUJI ELECTRIC CO. LTD, JAPAN



FUJI GEMCO PRIVATE LIMITED, INDIA

Fuji Electric Company Ltd., Japan and Gemco Controls Ltd. have formed a Joint Venture in India to enhance capabilities of Gemco to introduce new technologies and Systems in the Indian market.

Fuji Gemco with its headquarter in Faridabad and Fuji Electric's offices all across the country and now geared to offer latest Automation & Drive Systems to its customers all across the country.



Innovating Energy Technology

Our Mission

- Development and Acquisition of innovative Technology.
- Good concepts and knowledge about the actual Industrial application to which this technology is to be applied.
- Effective and reliable service and assistance from Project conceiving upto commissioning and life time operation of the system.

Management Policies

- Through our innovation in energy technologies, we contribute to the creation of responsible and sustainable societies.
- Achieve further growth through our global business expansion.
- Maximize our strengths as a team, respecting our employee's diverse ambition.

The Objective of this Joint Venture between two successful companies is to use and enhance the capabilities of Gemco to introduce new technologies and system in Indian Market. Fuji Gemco is well Placed to serve and meet the evergrowing needs of the vast and loyal customer base of Gemco with renewed vigour and commitment.

Mahesh Sachdeva
CEO



FUJI ELECTRIC CO., LTD, JAPAN

Business Fields

Semiconductors



Power Generation



Power Electronics



Food & Beverage



Long Product Rolling Mill Control System

A Share in JAPAN

50+%



Converter Furnace Exhaust Gas Treatment System

A Share in JAPAN

90+%



Energy Management System

A Share in JAPAN

90+%



Established

1923

Number of Employees (Consolidated)

26,757

Domestic 17,493

Overseas 9,264

as of March 31, 2022

Net Sales (Consolidated)

910.2 billion JPY

Overseas 254.4 billion JPY

Japan 655.8 billion JPY

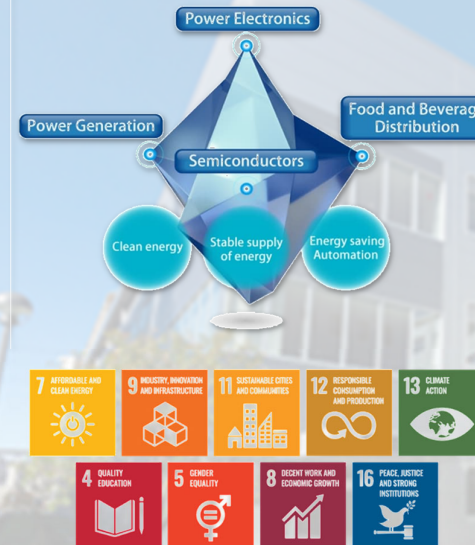
as of March 31, 2022



Sales and Services Manufacturing Bases

207 bases

as of March 31, 2022



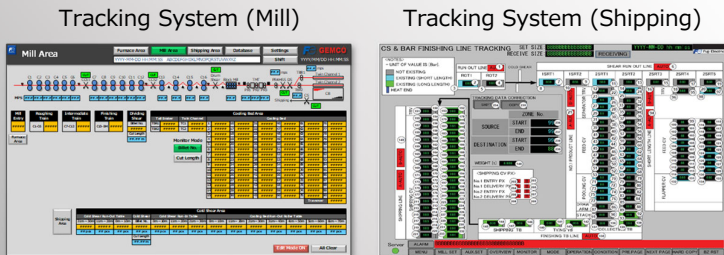
Fuji Electric's Energy and Environment Businesses

Fuji Electric has been supporting industrial and social infrastructure by extensively developing power semiconductor and power electronics solutions as core technologies. Fuji Electric's strength is its ability to independently develop and manufacture power semiconductors as key energy-saving devices. By leveraging our strengths, we are contributing to the realization of the worldwide goal of a decarbonized society.



Systems & Key Components

Level 2
(Process Computing)



Level 1 / Level 1.5
(Automation Control)



Level 1.5 SCADA System (Server & Client)

PLC & RIO Panels



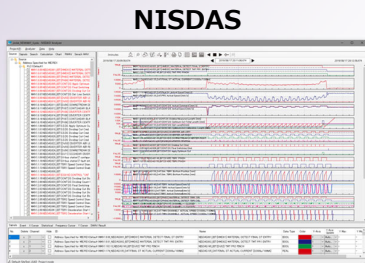
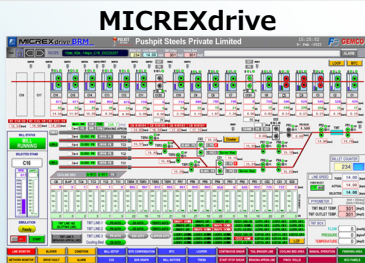
PLC : Programmable Logic Controller
RIO : Remote Input / Output Module
SCADA : Supervisory Control And Data Acquisition



High Speed PDA System (Server & Client)

PDA : Process Data Acquisition

Control Desks & Local Control Posts



Industrial Ethernet Network / Open Field Bus Network

Level 0
(Drives & Field Components)

AC Drive Panels
MULTISPEED MS-VG



DC Drive Panels
MULTISPEED MS-18

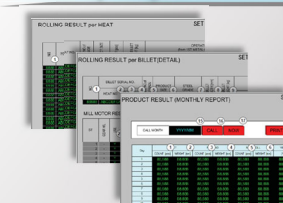


Other Panels

- Power Control Center (PCCs & DBs)
- Power Distribution and Control Systems
- Motor Control Center (MCCs)
- Power Factor Correction
- Harmonic Filters
- Battery Chargers
- HT & LT Substations

Features & Technologies

Traceability & Optimization by Fuji's Standard Level 2 System



Production can be managed and traced as per...

- Each raw material
- Daily
- Monthly

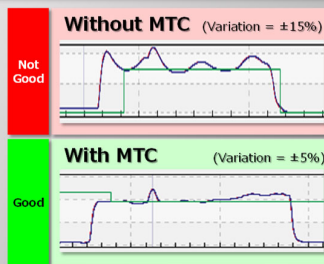
High Performance & High Stability by Fuji's Advanced Control Algorithms



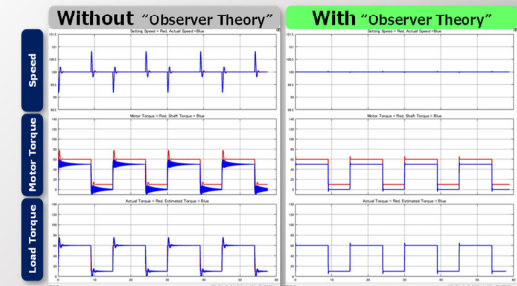
▲ Stabilized Loop Control & Rolling

Results of MTC ▶

MTC : Minimum Tension Control



Fast Response & High Accuracy by FUJI OBSERVER THEORY (FOSC)



● Fuji's System Packages

MICREX drive BRM
Fuji Bar Rolling Mill Control System

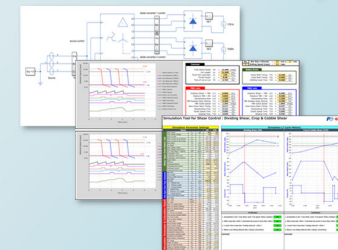
MICREX drive HDS
Fuji High-Speed Dividing Shear Control System

MICREX drive WRM
Fuji Individual Wire Rod Mill Control System

f(s)NISDAS 7

Supporting package software for data acquisition and analysis.

● Simulations & Tech. Analysis



● Technical Training at factory



● Quality Managements



Engineering & Technology enhanced by Fuji Electric, JAPAN

Systems
BAR & WIRE ROD MILLS



A Share in JAPAN
+50%
Fuji's Long Product Rolling Mill Control System

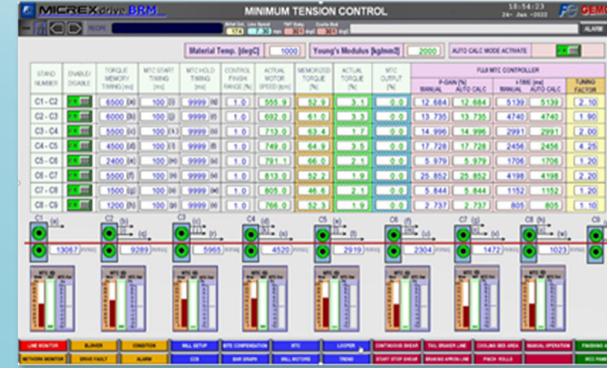


Japanese Tech.

MICREX drive BRM
Fuji Bar Rolling Mill Control System

MICREX drive HDS
Fuji High-Speed Dividing Shear Control System

MICREX drive WRM
Fuji Individual Wire Rod Mill Control System

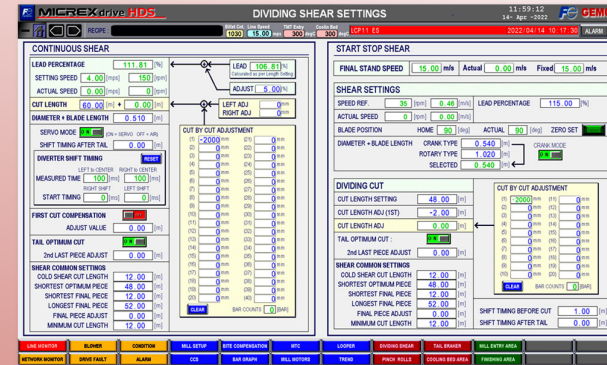


High Quality
by Fuji's Advanced Technology

- FOSC based Control**
- Minimum Tension Control
 - Bite Compensation

- Model Based Calculation**
- Loop Control

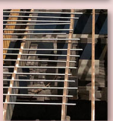
- FOSC**
Fuji Observer theory Speed drop Compensation



High Accuracy
by Fuji's High Speed PLC

- 1ms High Speed Control**
- MICREX-SX SPH series

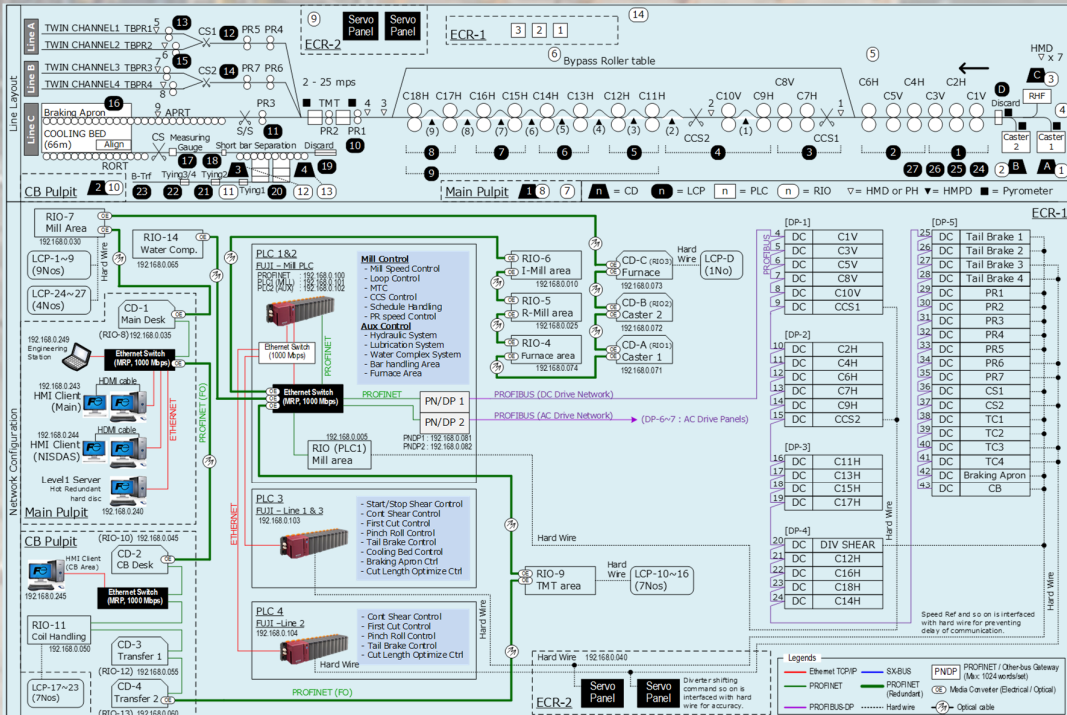
- Algorithm for Accuracy**
- Material Tracking Logic
 - 1st Cut Compensation
 - Work Diameter Estimation



High Flexibility
by Fuji's Intelligent Drive

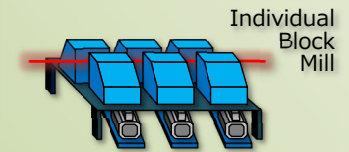
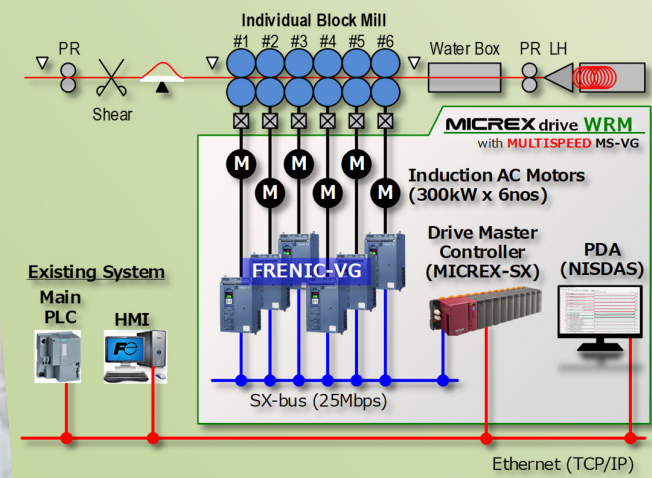
- FRENIC VGM**
- Inbuilt FOSC based Ctrl

- FOSC based Control**
- TLC (Tuning Less Ctrl)
 - Bite Compensation (1ms)



High Performance & High Redundant Systems

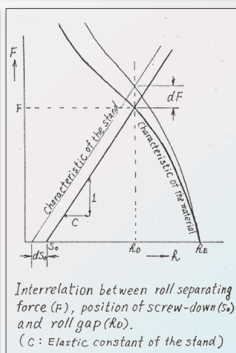
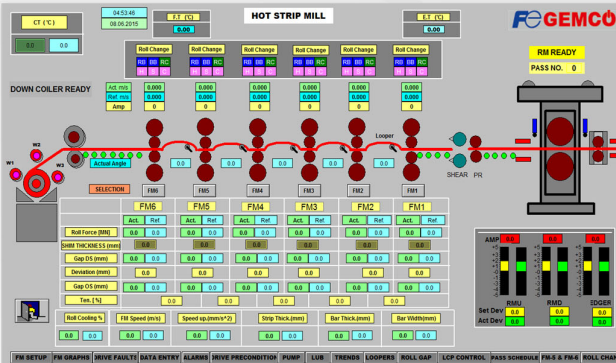
- Fuji's Standard Software Library
- High-Speed PLC (1ms Control)
- High-Speed PDA (1ms Sampling)
- Server and Client System on SCADA
- PROFINET with Fiber Optical Cables
- Loop Topology with MRP for Redundancy



HOT STRIP MILLS & PLATE MILLS

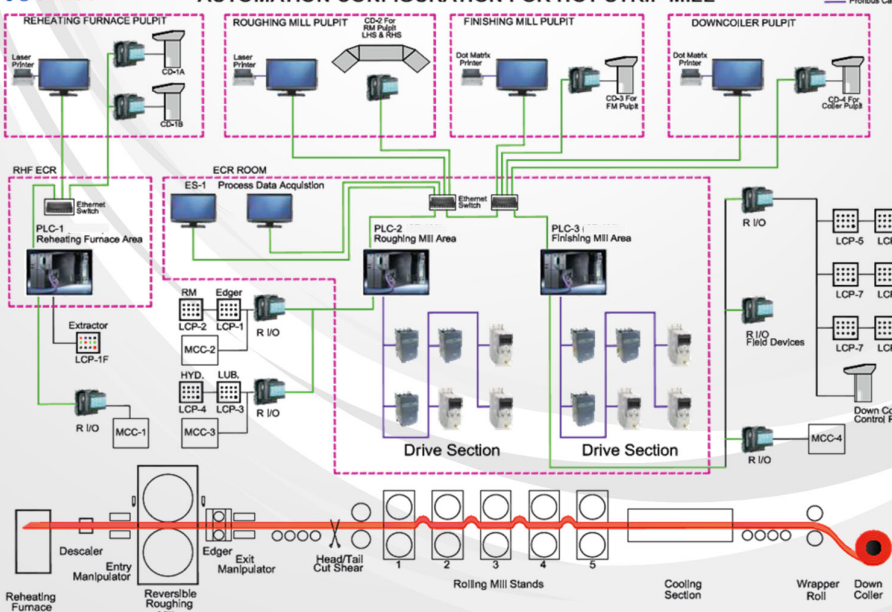
Automations & Systems

- Pass Scheduling Sys. & Database
- Mass Flow Synchronization
- Impact Drop Compensation
- Automatic Gap Scheduling
- Automatic Gauge Control
- Material Tracking System
- Roughing Mill Reverse Rolling
- Loop Control at Finishing Mills
- Coil Dia Compensation
- Automation for Coil Delivery
- Automatic Roll Changerover



Interrelation between roll separating force (F), position of screw-down (s) and roll gap (Rg). (C: Elastic constant of the stand)

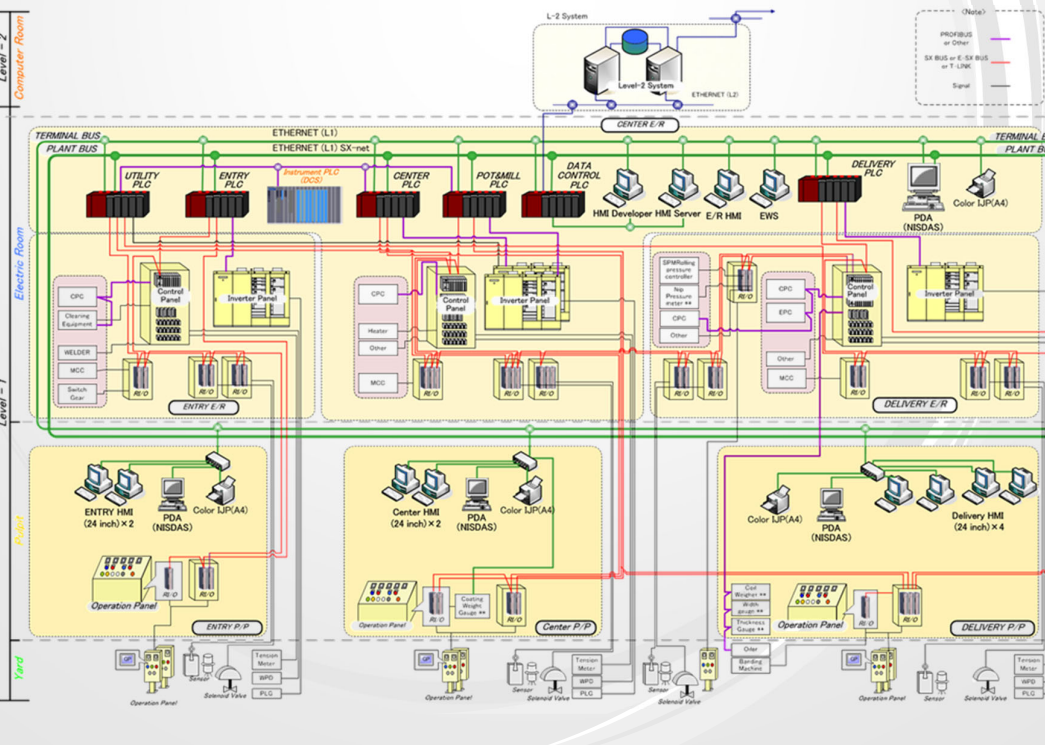
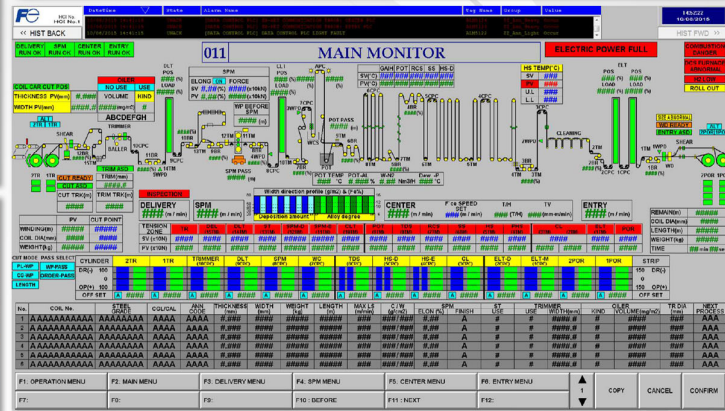
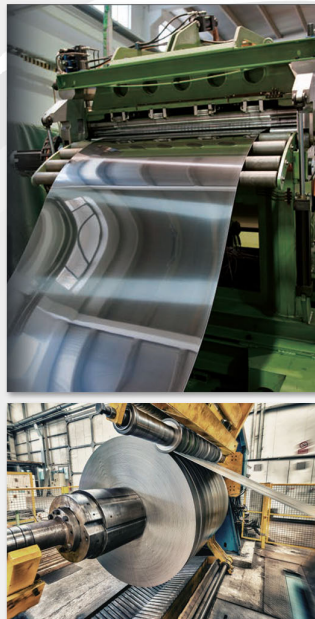
AUTOMATION CONFIGURATION FOR HOT STRIP MILL



COLD ROLLING MILLS & PROCESSING LINE

Automations & Systems

- Coil Schedule System & Database
- Tension Reference Distribution
- Inertia & Loss Compensation
- Loop tower Position Control
- Welding Point Tracking Control
- Shock less Speed Control
- Elongation Control
- Roll Management System
- Automation for Entry
- Automation for Delivery



DC DRIVES

MULTISPEED MS-18 HEAVY DUTY DC DRIVE PANELS

Fuji Gemco is one of the oldest manufacturer of DC Drives in India with specialization in Assembly of Heavy Duty High Current Power Stacks and Thyristor Bridges upto 10000 Amps. With a Rich Experience and Proven Performance of over 35 Years. FujiGemco offers DC Drive Panels

Range : 5 KW to 5000 KW | Output : 220V DC to 1000V DC | Current : Upto 10000 Amps

DEPENDABILITY | RELIABILITY | PERFORMANCE

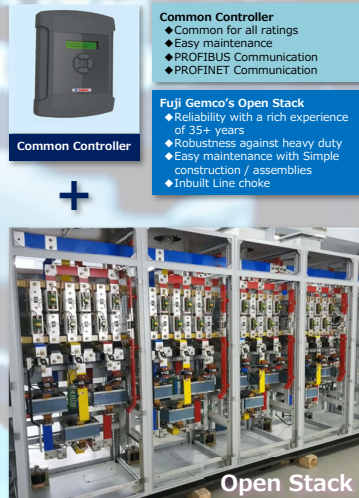
Increase your productivity, save energy and reduce downtime.

With an extensive range of Dependable DC motor control products, Fuji Electric has an answer to your industrial automation questions.

Unit Type



Open Stack Type



MS-18	Armature Current	Continuous Armature Current	Input AC Voltage
MS-18-01	440V	90A	400-500V
MS-18-02	440V	155A	400-500V
MS-18-03	440V	275A	400-500V
MS-18-04	440V	430A	400-500V
MS-18-05	440V	765A	400-500V
MS-18-06	440V	1000A	400-500V
MS-18-07	440V	1500A	400-500V
MS-18-08	440V	2000A	400-500V
MS-18-09	440V	2500A	400-500V
MS-18-10	440V	3500A	400-500V
MS-18-11	440V	4500A	400-500V
MS-18-12	440V	7000A	400-500V
MS-18-13	440V	9000A	400-500V

Ordering Codes :-
MS18 - XX - X - XD

- Converter Type
2 - 2 Quadrant
4 - 4 Quadrant
- DC Armature Voltage
A - 400-500 V
B - 600-690 V
C - 750-1000V
- Bridge Frame

Contact Factory For Higher Ratings

Your Industry Our Experience

Using our renowned industrial automation experience to design a range of DC motor controllers which provide you with solutions to the most demanding motor control applications.

It's now easier than ever to design new DC motor control systems or improve the performance of an existing application by retrofitting with the latest DC technology.

Compact Designs Ex-Stock Delivery

You can save cabinet space in new control systems, or easily upgrade an existing DC motor application. Compact design comes as standard.

Reduce your downtime by relying on our ex-stock delivery. With a global network of partners and all products built for stock, you can quickly get your business moving again.

AC DRIVES

Fuji High Performance Multifunctional Drives

Intelligence Advanced Control Fuji Observer Theory	High Accuracy Min $\pm 0.005\%$ Speed Control Accuracy	High Response Min 0.4 ms Speed Control Response Time	Wide Range upto 26 MVA Maximum Rating	High Efficiency Hybrid SiC Module ※FRENIC-VG series
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MULTISPEED MS-VG Heavy duty & High performance AC drive panels

Advantages

- High Performance & High Accuracy by FRENIC-VG
- Low Harmonics with 12 or 24 pulse system
- Simple construction & Assemblies
- High Traceability & Easy Operation
- High Operating Temperature upto 50°C
- High Efficiency with DC Linkage
- Customizable Configuration (Single/Parallel, Voltage)
- Inbuilt DC Reactor

Comparison (Fuji Drive vs Other)

Speed Response Time (10% - 90%)

Fuji: B: 8ms, A: 20ms

FRENIC-VG: 0.4 ms
Much Faster than Other !!

Other: 8 ~ 20 ms

Lineups / Ranges of FRENIC series

Application	Series / Feature	Capacity Range [kVA]
Rolling Mill ~1200kW	FRENIC VM - 3 Level PWM Inverter - Cabinet Type - Fuji Observer Theory	FRENIC4400VM: 6600 ~ 26400kVA (Output: 3300V) FRENIC4800VM: 690 ~ 8400kVA (Output: 800V)
Rolling Mill ~1200kW	FRENIC-VG - 2 Level PWM Inverter - Stack & Unit Type - Fuji Observer Theory	FRENIC-VG: 120 ~ 1566kVA (Output: 690V Stack/Unit) 6.8 ~ 3214kVA (Output: 400V Stack Type / Unit Type)
Rolling Mill ~500kW	FRENIC-MEGA - 2 Level PWM Inverter - Unit Type	FRENIC MEGA: 1.1 ~ 891kVA (Output: 400V Unit Type)
Auxiliary Machines	FRENIC-Ace - 2 Level PWM Inverter - Unit Type	FRENIC Ace: 1.6 ~ 450kVA (Output: 400V Unit Type)

KVA: 10k, 50k, 100k, 500k, 1000k, 5000k, 10M, 20M

Fuji AC Drive Global Page



Plant Data Acquisition (PDA) System

Supporting package software for data acquisition and analysis.

f(s)NISDAS

- Enables advanced system monitoring with high-speed, large-volume data acquisition
- Extensive system analysis support functions
- Excellent operability

NISDAS's Features

High Speed

Minimum **1ms** Sampling
 "NISDAS Protocol" mode (100Mbps) or "SX-Net" mode (1Gbps)

Large Volume

Storage **4months** or more
 7months in case of HDD=500GB, 4PLCs and Tag=5kwords

Flexible

30,715 signals as Standard License
 (2048words + 4095words) x 5PLCs

Simple

Without Any Special Devices
 Unnecessary to have any Special Hardware modules or PC

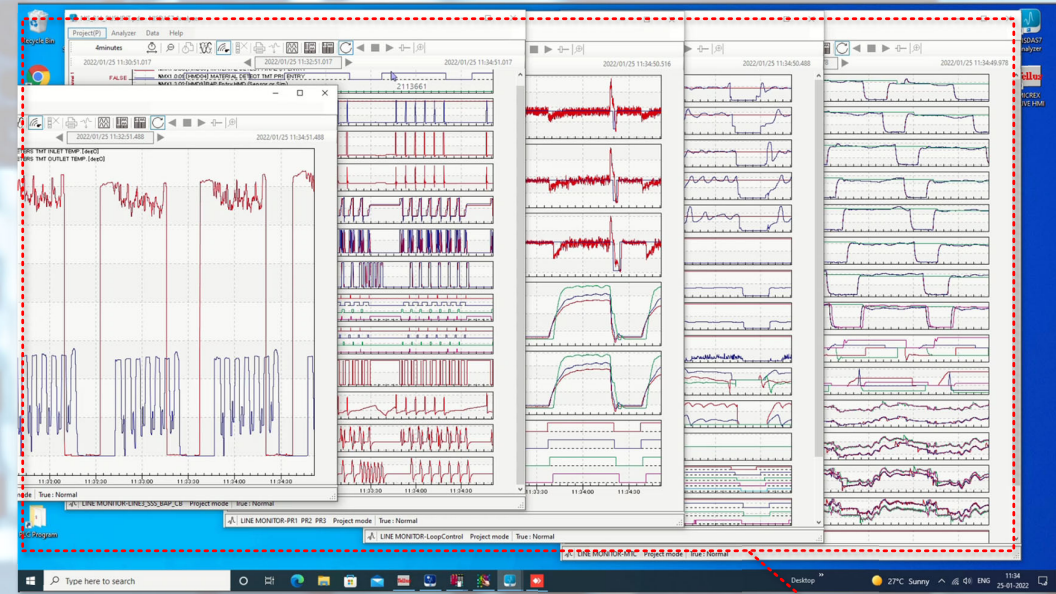
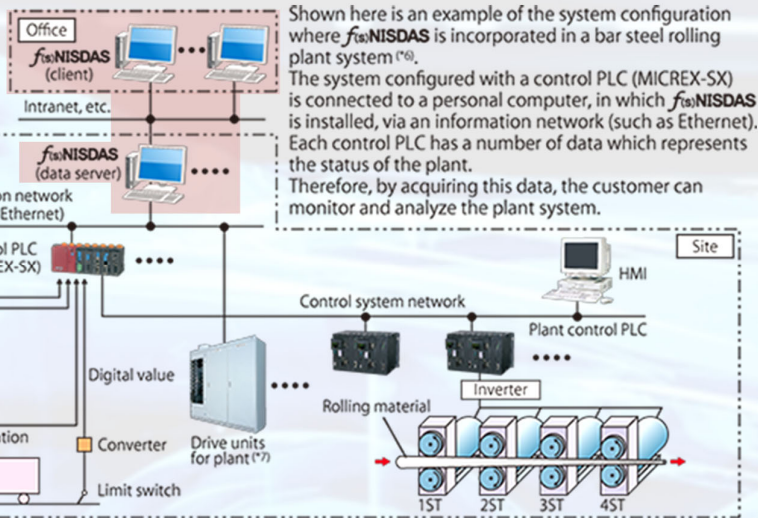
Benefits

Easy Troubleshooting

Easy Fine-Tuning



NISDAS Global



▲ Analyzer Screens (Real-time monitor)

Point! Multi-Window

Point! Min 1ms Sampling (High Speed)

Specify: Acquisition by NISDAS protocol

Collection data storage folder: C:\Users\Deliv\Documents\Fuji Electric\NISDAS7

Reserved disk space: 100000 (MB)

Project time zone: (UTC+09:30) 中国標準時間 (CST)

Marker making: Available

Table 1: NISDAS protocol Address Specified for MDREX

No.	Channel Name	Execution	Acquisition	Stop	Setting	Run Counter	Error Counter Open	Error Counter Connect	Error Ctl Connect/R
1	Acquisition by NISDAS protocol	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0	0	0	0
2	Address Specified for MDREX	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0	0	0	0
3	Variable Specified for MDREX	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0	0	0	0

Table 2: NISDAS protocol Address Specified for MDREX

No.	Name	Address	Signal Summary
1	SMW1.0		
2	SMW1.1		
3	SMW1.2		
4	SMW1.3		
5	SMW1.4		
6	SMW1.5		
7	SMW1.6		
8	SMW1.7		

Set of data acquisition

IP Address: 192.168.0.100 Read the Settings

Settings

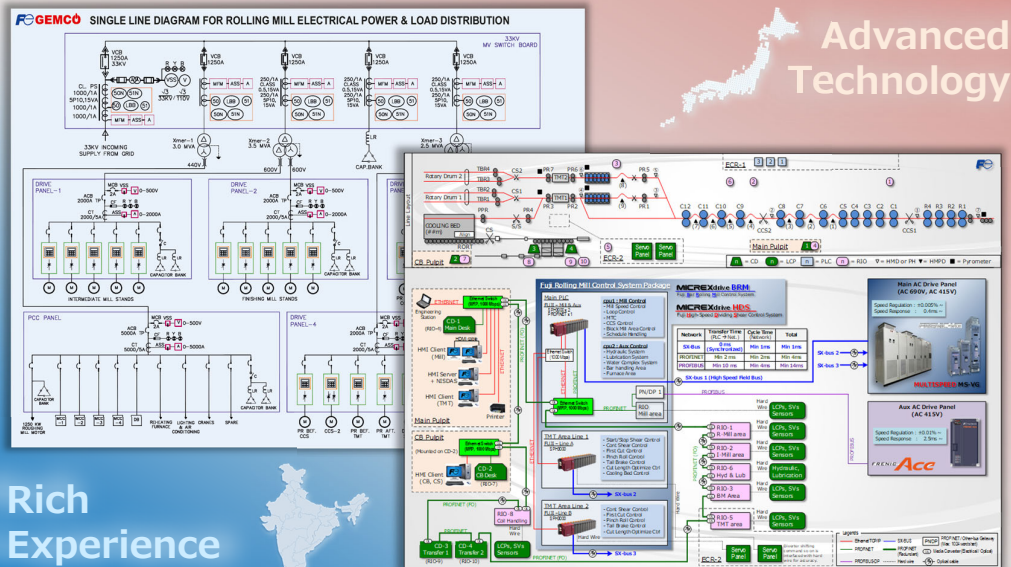
Version: 3 Basic sampling period[msec]: 1 Sampling period[msec]: 1

Table 3: Acquisition Data

No.	Data Type	Comment
<input checked="" type="checkbox"/>	1 INT	CS01 ACTUAL SPEED [RPM]
<input checked="" type="checkbox"/>	2 INT	CS01 ACTUAL SPEED [MPMS]
<input checked="" type="checkbox"/>	3 INT	CS01 SPEED REF [RPM]
<input checked="" type="checkbox"/>	4 INT	CS01 SPEED REF [MPMS]
<input checked="" type="checkbox"/>	5 INT	CS01 BLADE POS [deg]
<input checked="" type="checkbox"/>	6 INT	CS01 CURRENT FBK [X]
<input checked="" type="checkbox"/>	7 INT	CS02 ACTUAL SPEED [RPM]
<input checked="" type="checkbox"/>	8 INT	CS02 ACTUAL SPEED [MPMS]
<input checked="" type="checkbox"/>	9 INT	CS02 SPEED REF [RPM]
<input checked="" type="checkbox"/>	10 INT	CS02 SPEED REF [MPMS]
<input checked="" type="checkbox"/>	11 INT	CS02 BLADE POS [deg]
<input checked="" type="checkbox"/>	12 INT	CS02 CURRENT FBK [X]

▲ Recording Start/Stop Acquisition Setting ▶

PROVEN CAPABILITIES FOR COMPLETE PLANT ENGINEERING AND PROJECT MANAGEMENT FOR POWER CONTROLS & AUTOMATIONS FOR INDUSTRIAL PROCESSES



40+ years Experience and 1000+ Successful Installations

Rolling Mills



Installed **400+** Systems

Wire & Cable Plants



Installed **30+** Systems

Printing Machines



Installed **500+** Systems

Tube & Pipe Mills



Installed **20+** Systems

Paper Mills



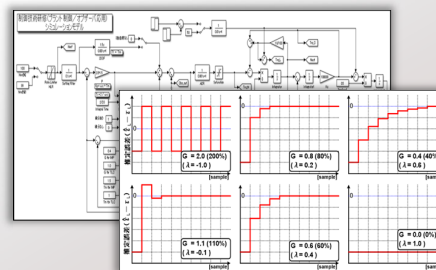
Installed **40+** Systems

Sugar Mills



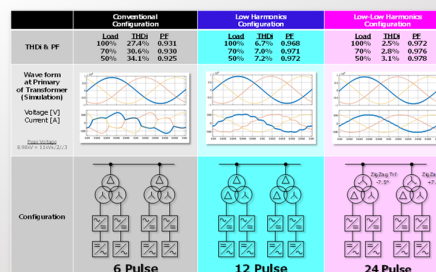
Installed **20+** Systems

Simulation & Analysis Tools designed by Japanese



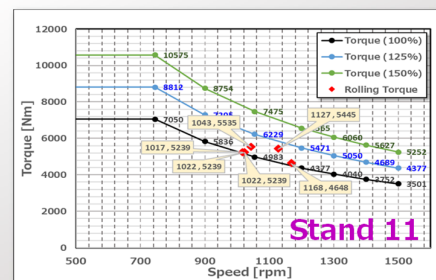
Simulation Tools for Advanced Control Theory

- Fuji Observer Theory
- Automatic Position Control
- PID Tuning
- Shear Cutting Simulation
- Torque Control Tuning



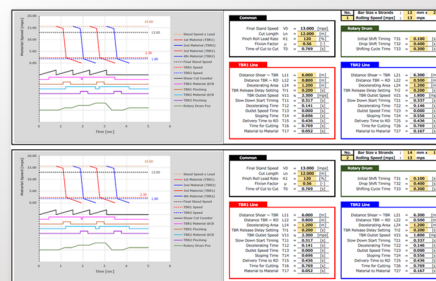
Simulation Tools for Optimized Single Line Diagrams

- 6/12/24 Pulse Models
- PWM/Diode Converter Models
- THDi Estimation
- Power Factor Estimation
- Load Simulation



Simulation Tools for Suitable Motor & Drive Selection

- Mill Motor Verification
- Shear Motor Verification
- TBR Motor Verification
- Torque Characteristic curve
- Power Characteristic curve



Simulation Tools for Innovative Rolling Mill Technology

- Individual Block Mill Control
- 12m Dividing Cut Control
- Cycle Time Estimation
- Speed Control Auto-Tuning
- Position Control Auto-Tuning

REFERENCE LIST : HOT ROLLING MILLS

S.NO.	CUSTOMER	LOCATION	YEAR
1	TISCO	VIETNAM	1996
2	METAFRIQUE	PARAGUAY	2016
3	PT CITRA TANAMAS	INDONESIA	2003
4	UNIVERSAL STEELS	INDONESIA	2016
5	IMC	TUNISIA	2018
6	DANA STEELS LTD.	NIGERIA	2008
7	SUN & SAND INDUSTRIES LTD.	NIGERIA	2011
8	REAL INFRA STEELS LTD.	NIGERIA	2012, 2016, 2018
9	IFE IRON & STEELS LTD.	NIGERIA	2011
10	MONARCH STEELS	NIGERIA	2013
11	PRISM STEELS LTD.	NIGERIA	2011
12	METAFRIQUE TRADING PVT. LTD.	NIGERIA	2013
13	LANDCRAFT INDUSTRIES LTD.	NIGERIA	2012, 2017
14	UNIVERSAL MINING LTD.	ZAMBIA	2010
15	TAH TARMAL STEEL	KENYA	2012, 2016
16	PREMIER ROLLING MILL LTD.	KENYA	1996
17	ABYSSINA	KENYA	2016
18	ACIERIES DE COTE D'IVOIRE	IVORY COAST	2010
19	AZTEC EXIM (THRU PP. ENGG.)	CAMEROON	2008
20	FORTUNE METALS	SOUTH AFRICA	2016
21	KUWAIT REINFORCED STEEL MFG. CO.	KUWAIT	2003, 2007
22	ARKAN STEELS LTD.	SAUDI ARABIA	2015
23	AL-JAZEERA LTD.	SAUDI ARABIA	2011
24	MUDAHISH STEELS LTD.	SAUDI ARABIA	2012
25	AL-QARYAN STEEL CO.	SAUDI ARABIA	2018
26	ATA METALS LTD.	AZERBAIJAN	2012
27	DELTA STEELS LTD.	ANGOLA	2010
28	METROPOLITAN STEELS	PAKISTAN	2007
29	AMRELI STEEL	PAKISTAN	2005
30	BILAL STEELS LTD.	PAKISTAN	2013
31	UNION STEELS LTD.	PAKISTAN	2016
32	AGHA STEEL	PAKISTAN	2018
33	BAZID STEELS	BANGLADESH	2011
34	KADAMTALI STEELS LTD.	BANGLADESH	2015
35	MAGNUM STEELS LTD.	BANGLADESH	2009
36	SIRAJANO ISPAT LTD.	BANGLADESH	2010
37	ALASKA STEELS LTD.	BANGLADESH	2011
38	PURBANACHAL STEELS LTD.	BANGLADESH	2009
39	AHMED & BROTHERS RE-ROLLING MILLS	BANGLADESH	2012, 2018
40	BINMOY STEELS LTD.	BANGLADESH	2012
41	SALEH STEEL INDUSTRIES LTD.	BANGLADESH	2011
42	KABIR STEELS LTD.	BANGLADESH	2005
43	BIKRAMPUR STEELS LTD.	BANGLADESH	2011
44	BANDAR STEELS LTD.	BANGLADESH	2011, 2012
45	SHEEMA STEELS LTD.	BANGLADESH	2011, 2015
46	BANGLADESH STEEL ROLLING MILLS	BANGLADESH	2003
47	SARDAR STEELS LTD.	BANGLADESH	2002
48	AMK STEELS	BANGLADESH	2004
49	MOH STEELS LTD.	BANGLADESH	2013
50	GOLDEN ISPAT LTD.	BANGLADESH	2015
51	ANWAR ISPAT LTD.	BANGLADESH	2009, 2016, 2018
52	JULFIKAR STEEL RE-ROLLING MILLS	BANGLADESH	2021
53	HULAS WIRE INDUSTRIES LTD.	NEPAL	2009, 2018
54	HIMAL IRON & STEELS LTD.	NEPAL	2001
55	GOENKA STEELS LTD.	NEPAL	2009, 2017
56	HAMAS STEEL LTD.	NEPAL	2003
57	JAGDAMBA ENTERPRISES (P) LTD.	NEPAL	2008, 2018
58	PANCHKANYA STEELS	NEPAL	2016
59	ASHOK STEELS LTD.	NEPAL	2016, 2018
60	JAGDAMBA STEELS LTD.	NEPAL	2014
61	NARYANI ISPAT	NEPAL	2017

S.NO.	CUSTOMER	LOCATION	YEAR
62	PREMIER STEEL	NEPAL	2018
63	JAY AMBE STEEL	NEPAL	2018
64	SARBOTAM STEELS	NEPAL	2019
65	HIMALAYAN ROLLING STEEL (P) LTD.	SRINAGAR	2012
66	RB JODHAMAL STEELS LTD.	JAMMU	2010
67	BHUSHAN POWER & STEELS LTD.	CHANDIGARH	2003
68	JAI BHARAT ROLLING MILL (P) LTD.	KALA AMB	2003
69	INDIA STEELS LTD.	KALA AMB	2016
70	SRI SIDDI VINAYAK STEEL	NALAGARH	2005
71	UTTAM STEEL	MANDIGOBINDGARH	2005
72	MADHAV STEELS LTD.	MANDIGOBINDGARH	2009
73	MADHAV UDYOG LTD.	MANDIGOBINDGARH	2014
74	RATHI TMT SARIA LTD.	BHIWADI	2005
75	RATHI RAJASTHAN LTD.	BHIWADI	2012
76	RATHI SPECIAL STEELS LTD.	BHIWADI	2005
77	SHREE RATHI STEEL LTD.	BHIWADI	2003
78	SHRISTI ALLOYS (P) LTD.	BHIWADI	2012
79	KAMDHENU ISPAT LTD.	BHIWADI	2000
80	ASHIANA STEELS LTD.	BHIWADI	2009
81	STAR WIRES LTD.	FARIDABAD	2001
82	KAMAL SPONGE & POWER LTD.	JAIPUR	2007
83	BADAYA ISPAT LTD. (KIRAN INFRA)	JAIPUR	2009
84	AMAR PRATAP STEELS (P) LTD.	JAIPUR	2009, 2016
85	LAXMAN VEER STEELS (P) LTD.	JAIPUR	2006
86	SANJOG STEELS LTD.	JAIPUR	2009
87	SHRI KRISHNA ROLLING MILLS	JAIPUR	2012
88	PREMIER ISPAT	JAIPUR	2015, 2017
89	MID INDIA ENGG. LTD.	GANDHIDHAM	2007
90	GUJRAT NRE COKE LTD.	GANDHIDHAM	2005, 2009
91	ADITYA ULTRA & STEELS LTD.	RAJKOT	2011
92	GALLANT METALS	GANDHIDHAM	2011, 2014
93	NILKANTH CONCAST PVT. LTD.	GANDHIDHAM	2004
94	VARSANA ISPAT LTD.	GANDHIDHAM	2006
95	VARIA ENGINEERING WORKS (P) LTD.	AHMEDABAD	2013
96	DIAMOND TMT & PROCON PVT LTD.	BHAVNAGAR	2013
97	PAGODA STEELS LTD.	BHAVNAGAR	2009
98	CHANDAN STEELS	VAPI	2018-19
99	KC FERRO ALLOYS	WADA	2012
100	VAISHNAV STEELS LTD.	WADA	2013, 2014
101	T.I. STEELS (P) LTD.	PONTASAHIB	2006
102	MITC ROLLING MILLS PVT. LTD.	NASIK	2013
103	VAISHNAV CASTING (P) LTD.	NASIK	2013
104	METAROLS & COMMODITIES	JALNA	2014, 2016
105	SRI OM RE-ROLLING MILLS P.LTD.	JALNA	2002
106	RAJURI STEELS LTD.	JALNA	2012, 2018
107	GAJKESARI STEEL	JALNA	2017
108	VASUDHA ALLOYS	JALNA	2018
109	GOA ISPAT LIMITED	GOA	2016
110	SHARDA SHREE ISPAT LTD.	NAGPUR	2007
111	TOPWORTH URJA & METALS LTD.	NAGPUR	2011
112	RADIANT STEELS LTD.	BADDI	2006, 2009
113	ATIBIR HITECH STEELS	GIRIDIH	2011
114	SLR METALICS	HOSPET	2018-19
115	UTTARANCHAL IRON & ISPAT	UTTARANCHAL	2006
116	SHRI BANKE BIHARI ISPAT PVT. LTD.	UTTARANCHAL	2006
117	BTC INDUSTRIES (P) LTD.	UTTARANCHAL	2005
118	BRAHMARI STEELS LTD.	RUDRAPUR	2010
119	BHUSHAN STEELS LTD.	SAHIBABAD	2003
120	KASHI VISHWANATH STEEL	KASHIPUR	2005
121	PRAHLAD STEELS LTD.	FIROZABAD	2005
122	MODERN STEELS LTD.	GHAZIABAD	1992

S.NO.	CUSTOMER	LOCATION	YEAR
123	RATHI SUPER STEELS LTD.	GHAZIABAD	2000
124	SHREE RATHI STEELS LTD.	GHAZIABAD	2007
125	KL RATHI STEELS LTD.	GHAZIABAD	2010, 2012
126	RATHI INDUSTRIES LTD.	GHAZIABAD	2006
127	ANJALI STEELS LTD.	JAUNPUR	2006
128	WAVE INDUSTRIES LTD.	GAJRAULA UP	2013
129	BUNDELKHAND ISPAT (P) LTD.	ORAI , UP	2013
130	SHAMLI STEELS LTD.	SHAMLI UP	2014
131	PRIME GOLD	CHUNNAR	2014
132	AMBA SHAKTI	GWALIOR	2014, 2019
133	PRIME GOLD	GWALIOR	2014
134	GALLANT ISPAT	GORAKHPUR	2014, 16, 18
135	ASR MULTIMETALS LTD	MUZAFFARNAGAR	2013
136	TEHRI GIRDERS LTD.	MUZAFFARNAGAR	2008
137	AMBA SHAKTI	SECUNDERABAD	2018-19
138	SHREE VASU ROLLING	ROORKEE	2018-19
139	RHL PROFILES LTD.	KANPUR	2011
140	RADHEY RADHEY STEELS LTD.	KANPUR	2009, 2016
141	MOHAN STEELS LTD.	KANPUR	1999
142	MAA MAHAMAYA ALLOYS	VARANASI	2018-19
143	MAGADH STEELS ROLLING	PATNA	2012
144	JMD STEELS LTD.	PATNA	2005
145	BALMUKUND STEELS LTD.	PATNA	2010
146	KAMAL SPONGE & POWER LTD.	SATNA	2007
147	MECON LTD.	RANCHI	2004
148	SKS ISPAT & POWER LTD.	RAIPUR	2007
149	LINGRAJ ISPAT LTD.	RAIPUR	2006, 2015
150	ALANKAR ISPAT LTD.	RAIPUR	2011
151	FORTUNE METALS LTD.	RAIPUR	2013
152	MAA KUDRAGARI STEELS LTD.	RAIPUR	2013, 2016
153	HITECH STEEL AND POWER LTD.	RAIPUR	2014
154	HINDUSTAN COILS LTD.	RAIPUR	2016
155	SHRI BAJRANG POWER & ISPAT	RAIPUR	2013
156	NIROS ISPAT	BHILLA	2018
157	ISCKON STRIPS	RAIPUR	2018
158	NALWA SPONGE IRON LTD.	RAIGARH	2004, 2007, 2018
159	ANJANI STEELS LTD.	RAIGARH	2010, 2018
160	NR ISPAT	RAIGARH	2018
161	GAYATRI RE ROLLING	RAIGARH	2018
162	SUPER SMELTERS LTD.	DURGAPUR	2006, 2009
163	JAI BALAJI STEELS LTD.	DURGAPUR	2006, 2010
164	ALAKNANDA SPONGE LTD.	DURGAPUR	2008, 2017
165	SHIVAM METALS LTD.	DURGAPUR	2008, 2010
166	SHREE RAM RATHI STEELS LTD.	DURGAPUR	2011
167	SIRMB STEELS LTD.	DURGAPUR	2012
168	AMIT METALICS LTD.	DURGAPUR	2010
169	NN ISPAT (P) LTD.	DURGAPUR	2014, 2016
170	SUPER SMELTERS LTD.	JHAMURIA	2002, 2014, 2016
171	SMC POWER GENERATION LTD.	JHARSUGURHA	2006, 2017
172	RUNGTA MINES	KAMANDA	2018
173	CONCAST STEELS LTD.	KOLKATA	2004
174	BMA STAINLESS LTD.	ASANSOL	2006
175	BRG IRON & STEELS CO. LTD.	ANGUL	2010
176	BALAJI STEEL	KODERMA	2006
177	KD IRON & STEELS LTD.	GUWAHATI	2009, 2016
178	MEGHALYA STEEL	GUWAHATI	2014
179	TRIPURA ISPAT LTD.	AGARTALA	2015
180	SUGNA ROLLING MILLS LTD.	HYDERABAD	2011
181	DHANALAXMI IRON IND. LTD.	HYDERABAD	2008
182	SCAN ENERGY & POWER LTD.	HYDERABAD	2011
183	JAIRAJ STEELS LTD.	HYDERABAD	2005

S.NO.	CUSTOMER	LOCATION	YEAR
184	RAYALASEEMA STEEL RE-ROLLING MILLS	HYDERABAD	2012
185	CHAMMUNDI STEELS LTD.	BANGALORE	1992, 2009
186	UNIVERSAL GEARS LTD.	BANGALORE	2016
187	AONE STEEL	HINDUPUR	2015, 2016, 2017
188	LAKSHYA STEEL	HOSPET	2017
189	SHRI RADHEY KRISHNA ISPAT PVT. LTD.	BILLARY	2007
190	SAI BHASKAR IRON & STEELS LTD.	GUNTOOR	2010
191	SAKTHI FERRO ALLOYS	KUPAM	2017-18
192	KALYANI STEELS LTD.	HOSPET	2012
193	SHRI VELA SMELTERS LTD.	TAMILNADU	2006
194	JBA RE ROLLING	PONDICHERY	2007
195	RKKR STEELS LTD.	CHENNAI	2007
196	VEM INDUSTRIAL CONTROLS	HIMACHAL	2018-19
197	MAA MAHAMAYA INDUSTRIES	VISHAKHAPATNAM	2019
198	VIRAJ STEELS	SAMBALPUR, ODISHA	2019
199	SATYAM STEELS	ARUNACHAL PRADESH	2019
200	MITTAL ISPAT	BANGLADESH	2019
201	SURAJ PRODUCTS	ROURKELA	2020
202	RCI BADHI HIMACHAL	BADDI HP	2018
203	BS SPONGE PVT.LTD.	RAIGARH	2019
204	AARTI SPONGE & POWER LTD	RAIPUR	2018
205	SUNRISE STEELS (P) LTD	GOA	2022
206	RELIABLE SPONGE PVT.LTD.	ORISSA	2019
207	DEVKI STEEL	KENYA	2022
208	SBF ISPAT PVT. LTD.	BHIWADI	2021
209	MS AGARWAL FOUNDRIES	ANDHRA PRADESH	2022
210	TK STEEL	LUDHIANA PUNJAB	2020
211	SAURABH STEEL	RAIPUR	2018
212	AL MADINA STEELS	EGYPT	2021
213	RABIGH SOLB INDUSTRY	SAUDI ARABIA	2021
214	AGRAWAL STRUCTURAL STEELS LTD.	RAIPUR	2022
215	PILANIA INDUSTRIES PVT. LTD.	BHILAI	2022
216	SHIV KRUPA STEELS & ALLOYS PVT. LTD	WADA,	2022
217	SWASTIK STEEL MILL.	NEPAL	2022
218	VSP UDYOG ISPAT	DURGAPUR	2022
219	SOUTH MALABAR STEELS & ALLOYS	KERALA	2022
220	AMBIENT STEELS LTD	BANGLADESH	2018
221	ABUJA STEELS	NIGERIA	2022
222	METROLLA STEELS PVT LTD	COCHIN KERALA	2022
223	ANKUR UDYOG LIMITED	GORAKHPUR	2022
224	AFRICAN STEEL MILL LTD	NIGERIA	2022
225	NRVS STEELS LTD	RAIGARH	2021
226	J G FOUNDRY LTD	PATNA	2022
227	PUSHPIT STEELS LTD	SRIKALAHASTI AP	2022
228	HILAL BABEL	IRAQ	2022
229	RADHA CASTING & METALICKS PVT. LTD.	RAMGARH ,JHARKHAND	2022
230	SHREE RADHEY GOBIND STEELS	UGANDA	2022
231	GAJKESARI STEELS PVT. LTD. MILL NO 2	JALNA	2022
232	KALIKA STEELS	JALNA	2022
233	JSW STEEL LTD.	ANJAR	2022
234	NORTH EASTERN FERRO ALLOYS	SILIGURI	2022
235	SATISH SUGAR	BELGAUM	2022
236	DADJI STEELS LTD.	KODERMA, RANCHI	2022
237	KDA ISPAT	HYDERABAD	2022
238	SPS STEEL ROLLING MILL	KOLKATA	2022
239	SA STEEL MILL	SOUTH AFRICA	2022
240	JAY BHARAT STEEL CORPORATION	GUJRAT	2022
241	MODERNA ISPAT PRIVATE LIMITED	ASSAM	2022

REFERENCE LIST : CRM & PROCESSING LINES

S.No.	CUSTOMER	LOCATION	EQUIPMENT	YEAR
1	NEZONE STRIP LTD.	KOLKATA	4 HI COLD ROLLING MILL SKIN PASS MILL	2001 2014
2	HARBANS LAL MALHOTRA & SONS	KOLKATA	4 HI COLD ROLLING MILL No.1, 2, 3 4 HI COLD ROLLING MILL FOR BLADE STEEL	1999 to 2003
3	SURYA ROSHINI LTD.	BAHADURGARH	COLD ROLLING MILL No.1, 2, 3 SKIN PASS MILL No.1, 2, CR SLITTING LINE - 2 Nos. PICKLING LINE, ROLL GRINDER, PUSH PULL PICKLING LINE	1991 to 2009
4	MODI STEELS LTD.	PATNA	COLD ROLLING MILL No.1, COLD ROLLING MILL No.2 CR SLITTING LINE, STRIP GALVANISING LINE	1991 1997
5	SIPTA COATED STEELS LTD.	NANDED	PICKLING LINE CR SLITTING LINE No.1 & 2	1993
6	COMMET STEELS LTD.	NANDED	CR SLITTING LINE REWINDING LINE PICKLING LINE	1996
7	NATIONAL STEELS LTD.	INDORE	REWINDING LINE HR SLITTING LINE	2004
8	JINDAL INDIA LTD.	KOLKATA	COLD ROLLING MILL	1994
9	ALLIED STRIPS (P) LTD.	BAHADURGARH	COLD ROLLING MILL No.1 & 2 SKIN PASS MILL CR SLITTING LINE	1993
10	J.V. STRIPS (P) LTD.	BAHADURGARH	COLD ROLLING MILL No.1, SKIN PASS MILL CR SLITTING LINE, HR SLITTING LINE, PICKLING LINE CR SLITTING LINE - 2 Nos. HR SLITTING LINE - 1 No.	2004
11	BHUSHAN STEELS LTD.	CHANDIGARH	PICKLING LINE - 1 No. REWINDING LINE - 1 No. TAPE GALVANISING LINE TUBE MILL COLD ROLLING MILL No.1	1995, 1998
12	METAL COATINGS LTD.	FARIDABAD	CR SLITTING LINE ROLL GRINDER	1996
13	VISHAL PIPES (P) LTD.	BANGALORE	COLD ROLLING MILL CR SLITTING LINE	1999
14	STEELCO GUJRAT LTD.	BARORA	HR SLITTING LINE CR SLITTING LINE	1995
15	METALMAN LTD.	INDORE	HR SLITTING LINE	1995
16	RAYMOND STEELS LTD.	NASIK	HR SLITTING LINE	1994
17	PASONDIA STEELS LTD.	GHAZIABAD	COLD ROLLING MILL No.1, COLD ROLLING MILL No.2 SKIN PASS MILL, CR SLITTER, PICKLING LINE	1996
18	MOHTA ELECTRO STEELS LTD.	BHIWANI	COLD ROLLING MILL No.1 COLD ROLLING MILL No.2 ROLL GRINDER	1990
19	S.K. FOILS (P) LTD.	BHIWANI	COLD ROLLING MILL No.1 COLD ROLLING MILL No.2	1991
20	CENTURY TUBES LTD.	BHIWANI	COLD ROLLING MILL No.1 COLD ROLLING MILL No.2 COLD ROLLING MILL No.3 SKIN PASS MILL	1991
21	AGARWAL METAL IND. LTD.	REWARI	COLD ROLLING MILL No.1, COLD ROLLING MILL No.2 HOT ROLLING MILL, ROUGHING MILL SLITTING LINE	1994 1999, 2001
22	GRAHAM FIRTH STEELS LTD.	AURANGABAD	COLD ROLLING MILL PICKLING LINE	2007
23	STELCO STRIPS (P) LTD.	LUDHIANA	COLD ROLLING MILL No.1 COLD ROLLING MILL No.2	1998
24	HARYANA FOILS LTD.	BHIWANI	COLD ROLLING MILL No.1 COLD ROLLING MILL No.2 COLD ROLLING MILL No.3	2009
25	ATMA STEELS LTD.	DERABASSI	COLD ROLLING MILL	1989
26	SURANA STRIPS LTD.	HYDERABAD	SKIN PASS MILL CUT TO LENGTH LINE	1996, 1998 2000
27	HITECH STEELS LTD.	SIKANDERABAD	COLD ROLLING MILL	1999
28	SKS LTD.	DELHI	COLD ROLLING MILL (NON FERROUS) PICKLING LINE	1998
29	RUCHI STRIPS LTD.	INDORE	HR SLITTING LINE	1990
30	BHARAT STRIPS LTD.	HYDERABAD	COLD ROLLING MILL (NON FERROUS) SLITTING LINE No.1 & 2 ROLL GRINDER	2010
31	ZODIAC METAL STRIPS LTD.	BAHADURGARH	COLD ROLLING MILL	1994
32	JD SONS STEELS LTD.	PRITHLA	COLD ROLLING MILL	2004
33	AGRA ISPAT UDYOG	AGRA	COLD ROLLING MILL	1994
34	JINDAL IRON & STEEL LTD.	MUMBAI	PAYOFF & REWINDER REWINDING LINES - 3 Nos.	1994
35	MASTER STRIPS (P) LTD.	BANGALORE	CR SLITTING LINE SKIN PASS MILL	1996
36	SHREE PRECOATED STEELS LTD.	PUNE	COATING LINE	1996
37	SMPK STEEL SERVICE CENTRE	MALAYSIA	CR SLITTING LINE CUT TO LENGTH	1997
38	ROAD MASTER STEEL STRIPS	RISHIKESH	SKIN PASS MILL	1994
39	FEERO CONCRETE LTD.	INDORE	HR SLITTING LINE	1992
40	HINDUSTAN FOILS LTD.	DELHI	4 HI COLD ROLLING MILL	1995
41	QUALITY FOILS	HISSAR	4HI COLD ROLLING MILL	1999, 2004, 2014
42	BMW INDUSTRIES LTD.	JAMSHEDPUR	SKIN PASS MILL HR SLITTING LINE	2009
43	UTTAM STRIPS (P) LTD.	BHIWADI	CR SLITTING LINES - 2 Nos. CONTINUOUS PICKLING LINE	2009

S.No.	CUSTOMER	LOCATION	EQUIPMENT	YEAR
44	WELGEN STEELS (P) LTD.	KOLKATA	COLD ROLLING MILL-1 & 2 PICKLING ANNEALING LINE	2004 2009
45	KANPUR STRIPS (P) LTD.	KANPUR	COLD ROLLING MILL SKIN PASS MILL CUT TO LENGTH CR SLITTING LINE	1992
46	ASIL INDUSTRIES LTD.	JAIPUR	STEEL POLISHING LINE PICKLING LINE	1996
47	STEEL STRIPS LTD.	LUDHIANA	REWINDING LINE CUT TO LENGTH	1996
48	SYRIKAT JAYA TUGAS	MALAYSIA	CR SLITTING LINE	1993
49	AMCO VINYL	BHIWADI	ALUMINIUM ROLLING MILL	1995
50	SHRI BIHARJI COLD ROLLERS	KOLKATA	4 HI COLD ROLLING MILL	2000
51	SAHU REFRIGERATION LTD.	DELHI	4 HI COLD ROLLING MILL	2000
52	PROFILE SABET	IRAN	4 HI COLD ROLLING MILL	2000
53	JINDAL IRAN STEEL CO.	BOISER	CR SLITTING LINE BRITE ANNEALING LINE	2000
54	HISSAR METAL LTD.	HISAR	SKIN PASS MILL PICKLING LINE	1997
55	JINDAL STRIPS LTD.	HISSAR	4 HI CR MILL FOR CU-NI SLITTING LINE	1998
56	MALWA STRIPS LTD.	DEWAS	4 HI MILL FOR NON-FERROUS	2003
57	MAGNUM STRIPS LTD.	GURGAON	CR SLITTING LINE	2002
58	BHUSHAN STEELS LTD.	KOLKATA	TAPE GALVANISING LINE TUBE MILL CR SLITTING LINE	2005
59	BHUSHAN STEELS LTD.	GHAZIABAD	HR SLITTING LINE PICKLING LINE	2003
60	SAW PIPES LTD.	DELHI	PICKLING LINE	1997
61	SHAMON ISPATH LTD.	HALDIA	PICKLING LINE	2001
62	SURESH METALS P LTD.	BANGALORE	4 HI COLD ROLLING MILL	2002
63	SAGITTARIUS METALS P LTD.	BANGALORE	CR SLITTING LINE	2002
64	SINGHAL STRIPS LTD.	SAMPLA	COLD ROLLING MILL No.1 & 2 SKIN PASS MILL	2004
65	DHAR ISPAT LTD.	INDORE	COLD ROLLING MILL No.1, 2, 3 STRIP GALVANISING LINE	1987
66	RAJINDER STEELS LTD.	KANPUR	COLD ROLLING MILL No.1 & 2 SKIN PASS MILL, CR SLITTING LINES, 2Nos. CUT TO LENGTH, SPIRAL PICKLING LINE	1995
67	INDIAN SMELTING & REFINING	MUMBAI	4 HI COLD ROLLING MILL	2003
68	LLOYD'S STEELS LTD.	WARDHA	EDGE TRIMMING REWINDING LINE	1999 2003
69	VALLABH STEELS LTD.	RAJPURA	4 HI COLD ROLLING MILL	2003
70	ASIAN COLOUR COATED LTD.	DUBAI	HR GALVANISING LINE	2012
71	ASIAN TUBES LTD.	AHMEDABAD	4 HI COLD ROLLING MILL	2004
72	SIDHDATA ISPAT LTD.	GHAZIABAD	4 HI COLD ROLLING MILL REWINDING LINE	2010
73	LOHIA BRASS LTD.	MORADABAD	4 HI COLD ROLLING MILL (Non Ferrous) SLITTING LINE	2010
74	SWATI ALUMINIUM LTD.	GURGAON	ALUMINIUM FOIL MILL	2011
75	SWASTIK PIPES LTD.	BAHADURGARH	4 HI COLD ROLLING MILL COLD ROLLING MILL 2	2011, 2019
76	HOOPS & STRIPS (P) LTD.	KOLKATA	4 HI COLD ROLLING MILL	2011
77	VARDHMAN STEELS LTD.	RAJPURA	PUSH PULL PICKLING LINE	2010
78	GWALIOR STRIPS LTD.	GWALIOR	COLD ROLLING MILL	1988
79	COPTECH ENGINEERING	INDORE	4 HI COLD ROLLING MILL for NON FERROUS	2014
80	MITTAL COINS (P) LTD.	INDORE	4 HI COLD ROLLING MILL for NON FERROUS	2015, 2020
81	MITTAL APPLIANCE (P) LTD.	INDORE	4 HI COLD ROLLING MILL	2015
82	HULAS WIRE	NEPAL	12 HI COLD ROLLING MILL, 6 HI COLD ROLLING MILL, 6 HI COLD ROLLING MILL,	2016, 2017
83	CHABBRA STEEL STRIPS	CHANDIGARH	COLD ROLLING MILL No.1 & 2	1991
84	ALLIED METALS (P) LTD.	FARIDABAD	CR SLITTING LINE	1997
85	JWALA STRIPS LTD.	FARIDABAD	4 HI COLD ROLLING MILL CR SLITTING LINE	2000
86	BHUSHAN STEEL & STRIPS LTD.	SAHIBABAD	HR SLITTING LINE ROLL GRINDER	
87	R.K. ISPAT (P) LTD.	BHIWANI	COLD ROLLING MILL SKIN PASS MILL	1998
88	PANWAR STEELS LTD.	BHIWANI	4 HI COLD ROLLING MILL CR SLITTING LINE	2001
89	RAJASTHAN FOILS LTD.	BHIWADI	COLD ROLLING MILL	1999
90	ROHINI STRIPS LTD.	GWALIOR	COLD ROLLING MILL No.1 & 2	1997
91	ADVANCE STRIPS	JAIPUR	COLD ROLLING MILL	1990
92	ASSAM ASBESTOS LTD.	GUWAHATI	CUT TO LENGTH LINE	1994
93	PEE TEE TUBES LTD.	MADRAS	CR SLITTING LINE	1999
94	COPTECH ENGINEERING	UBERGOAN	4 HI COLD ROLLING MILL for COPPER	2022