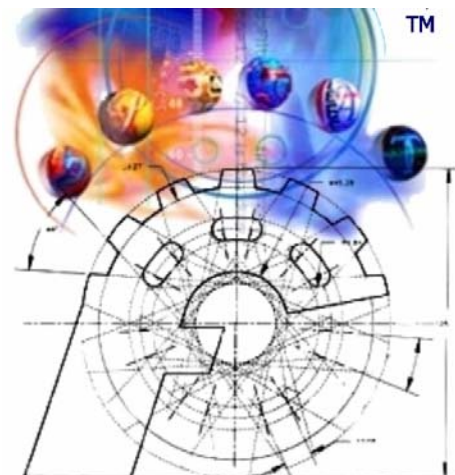




QUALITY SYSTEM MANUAL

Distribution

☒ Not controlled

Controlled, delivered to:

- ☐ Lloyd's Register Quality Assurance
- ☐ Quality System Manager

www.fulgosi.com

This manual is conform to ISO 9001:2000 requirements and is due to widespread the knowledge of the quality system to employers. All the staff is invited to make refers to these document and to suggest improvements to the Quality System Manager.

Fulgosi Giovanni S.n.c. (timbro)	Controlled copy n° 0 of 0
Released by: Davide Fulgosi (Quality System Manager) (firma)	Issue date: April 22nd, 2005
Approved by: Corrado Cerri (General Manager) (firma)	Review index: 8

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1 SCOPE

The primary processes which constitute the action carried out from Fulgosi Giovanni s.n.c. are listed as follows. The system is referred to the whole business activity of **design and production of pig launchers and receivers welded tubes and fittings in carbon and low alloy steel up to 150" in diameter for petrochemical industry.**

BUSINNES PROCESSES	SCOPE	Doc. Code	Norm
Estimates, orders and contracts management	- Acquirement of customer's requires - Issue of estimations - Orders review - Definition of prices	PR01	5.2; 7.2
Design	- Planning, inspection and re-examination of the new products	PR07	7.3
Production planning	- Planning of production - Productive activities - Inspection - Products release	PR03	7.5
Inspection and tests	- Check on the receipt - Check on production - Final check and tests	PR04	8.2.4
Purchasing process	- Issue of supplier's orders - Acceptance of the goods on entry	PR02	7.4 8.2.4
Equipment maintenance	- Maintenance of the equipment - Calibration of instruments used for measurement	PR05	7.6

2 CHANGES BROUGHT ABOUT COMPARED TO THE PREVIOUS ISSUE

- The organization chart has been updated with the rule of the trade official.
- To paragraph 5.6. have been modified the review formalities of the quality system.
- At the end of chapter 5.5.3 have been mentioned the recording formalities regarding the
- periodical meetings of monitoring of objectives and those of quality system indicators.
- Updated the chapter 4.2. and 7.5. with the new IO and SP

3 NORMATIVE REFERENCE – CROSSREFERENCE WITH INTERNAL DOCUMENTS

The quality system documentation of Fulgosi Giovanni Snc is here compared to ISO 9001:2000 "Management systems – requirements":

Norm	Manual	Quality System Procedure
4	4	–
4.1	4.1, 4.1.1, 4.1.2	–
4.2	4.2	PR13
4.2.1	4.2.1	–
4.2.2	4.2.2	–
4.2.3	4.2.3	PR13
4.2.4	4.2.4	PR14

Norm	Manual	Quality System Procedure
5	5	–
5.1	5.1	–
5.2	5.2	–
5.2.1	5.2.1	–
5.3	5.3	–
5.4	5.4	–
5.4.1	5.4.1	–
5.4.2	5.4.2	–
5.5	5.5	–
5.5.1	5.5.1	–
5.5.2	5.5.2	–
5.5.3	5.5.3	–
5.6	5.6	–
6	6	–
6.1	6.1	–
6.2	6.2	PR15
6.2.1	6.2.1	–
6.3	6.3	–
6.4	6.4	–
7	7	–
7.1	7.1	PR01
7.2	7.2	PR01
7.2.1	7.2.1	PR01
7.2.2	7.2.2	PR01
7.2.3	7.2.3	PR01
7.3	7.3	PR07
7.3.1	7.3.1	PR07
7.3.2	7.3.2	PR07
7.3.3	7.3.3	PR07
7.3.4	7.3.4	PR07
7.3.5	7.3.5	PR07
7.3.6	7.3.6	PR07
7.3.7	7.3.7	PR07
7.4	7.4	PR02
7.4.1	7.4.1	PR02
7.4.2	7.4.2	PR02
7.5	7.5	PR03, PR04
7.5.1	7.5.1	PR03, PR04
7.5.2	7.5.2	PR03, PR04
7.5.3	7.5.3	PR03, PR04
7.5.4	7.5.4	PR03, PR04
7.5.5	7.5.5	PR03, PR04
7.6	7.6	PR05
8	8	–
8.1	8.1	–
8.2	8.2	–
8.2.1	8.2.1	–
8.2.2	8.2.2	PR06
8.2.3	8.2.3	–
8.2.4	8.2.4	–
8.3	8.3	PR11
8.4	8.4	–
8.5	8.5	PR12
8.5.1	8.5.1	PR12
8.5.2	8.5.2	PR12
8.5.3	8.5.3	PR12

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4 QUALITY MANAGEMENT SYSTEM

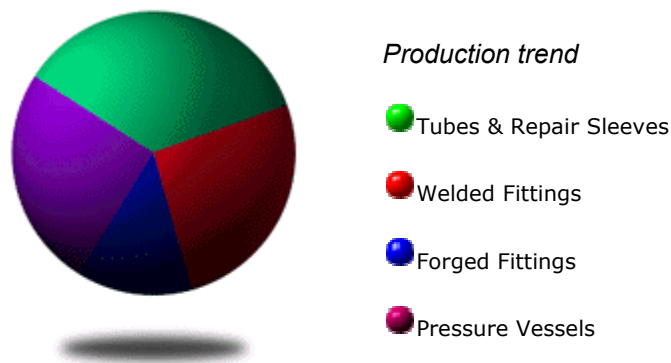
4.1 Mission

Fulgosi Giovanni s.n.c. was founded in 1974 by Mr Giovanni Fulgosi in San Nicolò, Rottofreno, Piacenza where presently still operates. Mr Fulgosi, back from Belgium where he worked as a miner, decided to invest the money he earned from the coal extraction into an activity of mechanical constructions in a small building of 500 sqm and 3 employers. The company gradually developed to become a large firm specialized in the prefabrication of pipes and fittings for petrochemical Industry with 15 employers.

The company operates on the international market since the beginning. The average age of the company is below 40 that is expression of promptness and dynamism. In the last few years the company policy has been changed from "marketing oriented" to "quality assured" to achieve total quality performance in meeting the requirements of external and internal customers.

Quality performance means to understand who the customer is, what the requirements are, and meeting those requirements without mistakes, on time, every time.

Fulgosi's production capability counts on a **30.000 sqm.** area, **6.000** of which are served with **8** "bridge-cranes" in **10** and **5** Tons./each., while the "stock-area" is served by **5** "fork-lifts" in **7** and **4** Tons. Last year the company manufactured **3.544 Tons of Steel**. The following diagram show an idea of the present "production's trend" based on the type of products manufactured.



Nowadays it's hard to understand the market in order to predict the field we'll improve more our know-how but, anyway the company will improve and innovate every time, everyday, always.

4.1.1 Quality management system structure

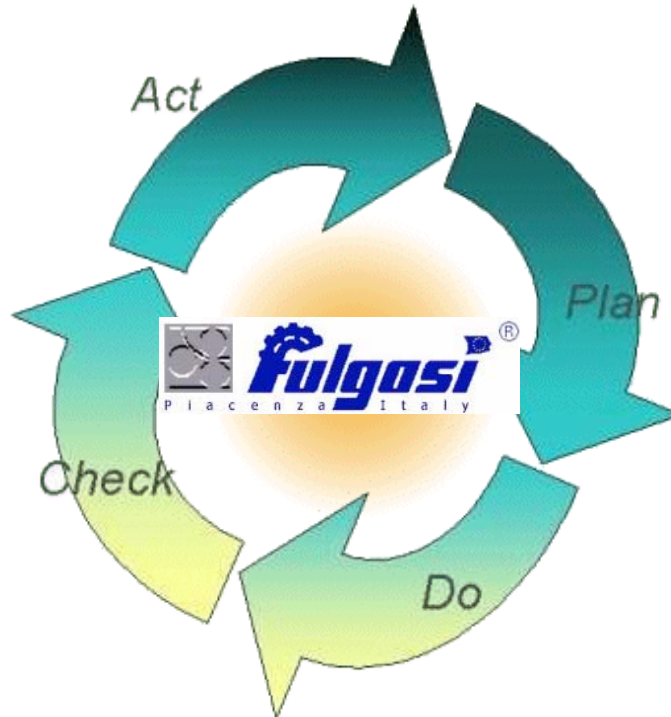
The Fulgosi Giovanni S.n.c. quality system leans towards the continuous improvement. All the firm's activities are organized in the way that planning, carrying out (of primary processes and those of support) inspection and modification/standardization succeed one other in a very natural way, allowing to the management an efficient means for the continuous improvement of the performance.

The above mentioned approach is based on the PDCA (plan-do-check-act) of Deming in which each process or activity can continually improve if undergone to the planning phase of the aims/target (measurable), of resources and necessities rules, acting of the rules, performance evaluation of services and processes

(routinary with pointed out methods of verification), comparing them with the aims/targets and identification of the necessities corrective measures.

Fulgosi Giovanni s.n.c. applies this method, conformed to requirements ISO 9001:2000, to obtain a continuous improvement of the managerial performances.

To the aim of ensuring the compatibility between managerial processes, these one have been graphically represented in the way to point out their sequence and mutual interaction.



In the diagram shown on paragraph 7.1 is described the whole flow of the managing processes together with their relations.

4.1.2 Terms and definitions

For this manual are in force the definitions given from ISO 9000:2000 norm. Moreover, the “process” is here defined as:

Process: Sequence of activities correlated and directed towards a final specific output; Activities seem to be a sequence of easy operations, repetitive and to added value, with efforts of human resources, technological financial informative resources as well.

Primary processes: Business processes necessary to the product’s realization from the trading phase of pre-selling to that of assistance post selling;

Processes of support: Business processes which guarantee the check and the utility of the primary processes.

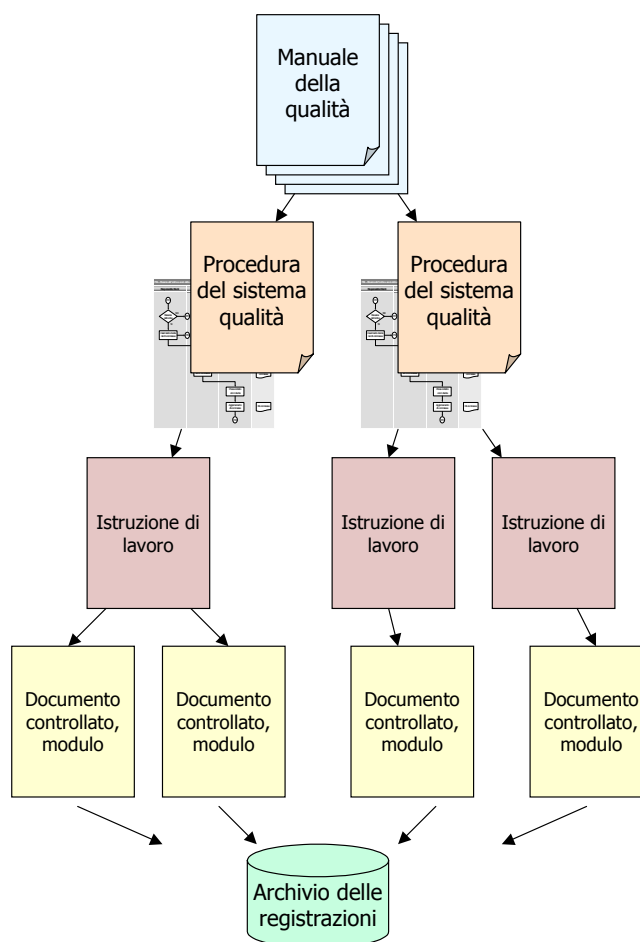
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4.2 Documentation requirements

4.2.1 Documentation requirements

The quality system's documentation as following a pyramidal structure including manual procedures both graphical form and textual, business instructions (operative or specific instructions of working)and other documents of support to the processes (documents checked in general).



The documentation of the quality system is divided in the following kind of documents:

1. Quality system manual
2. Quality system Procedures (PR)
3. Operating instruction (IO)
4. Working specification (SP)
5. Form and documents in general checked (DC)

4.2.2 Quality manual

The present quality manual has the following aims:

- Make disposal all the business functions, information and procedures which support communications, activities, corporate and decision's policy, in the way of improving the homogeneity and operating efficacy.
- Increase the quality end efficacy of business processes, only consolidating that which is really useful.

- To fulfil all the requirements of the norm ISO 9001:2000

The standards mentioned in the present manual must be applied to the whole corporate structure of Fulgosi Giovanni s.n.c. to the aim of widespread the knowledge of a quality system in the company, to support the application, the respect of the content, the evolution and improvement. All the staff in the firm is invited to make reference to this document and to suggest eventual improvements to the manager of the quality system.

The manual can recall procedures which treat in an external document the relating requirements of the norm. These procedures are pointed out on paragraph 3 "Reference's regulation and cross reference's tables after the beginning index.

The structure of this manual follows that of ISO 9001:2000 norm and it is organized in chapters:

- Managing system for quality
- Responsibility of the leading staff/managerial staff
- Administration of the resources
- Realization of the product
- Measure and analysis, improvement

The need to make the test of the present manual more approachable from the institute of certification's side, led us to the definition of two index: the first is the index of manual's chapters, the second one is thatwhich follows the points of the norm ISO 9001:2000.

The progressive numeration of pages is one for whole manual of quality, so that a modification even effectuated only on a part of the manual, implies a new issue and a revision of all the quality manual.

The responsibilities regarding the editing, verification and approval of the manual, are of the quality system manager and of the leading staff, as specified in the procedure PR13-Management of documentation and data.

The modifications to the manual are described in the proper paragraph of this manual and they can be widespread only after approval ,increasing time by time the index of manual's revision.

This manual is distributed in controlled copy to the inner functions listed on the cover and to the institute of certification. The not-listed functions on the cover can consult the copy of the manual given to the responsible of the quality system.

The old copies of the quality manuals are kept in the proper archives of the technical office.

4.2.3 Documented procedures, flowcharts and other documentation

To improve the readability and the guarantee of compatibility between business processes and business procedures have been represented both graphically and textually.

The aim of the flow's diagrams is that of an immediate visibility of the business processes, putting then in evidence the responsible one and the supporting documents for each activity. The textual procedures are documents which describe detailed activities or those not easily representable with a logical sequence.

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A complete and concise vision of the primary and supporting processes of Fulgosi Giovanni is mentioned on chapter 7.1, where is put in evidence the mutual relations, mutual interactions, business figures involved and the entry and exit documents in the process itself.

Modalities of editing ,test, approval ,issue and modify of procedures and of the other documents of the quality system are described in the PR13-Management of documentation and data.

The supporting form for the business processes has both the aim of planning process's information and that of recording activities. To make it easier identifiable, the forms and the other controlled documents are indicated by an acronym DC nn, where nn is a progressive number.

Responsible of test and approval of the form is the business function responsible for that process with which the form is correlated.

Listing and distribution list of quality system's documents

The quality system documents (quality manual, procedures of the quality system and controlled documents) are described in the controlled document of the quality system DC- Listing and distribution of documents of the quality system.

Management of external documents

External documents managed by Fulgosi in the way to and archive in a very correct way, all the documentation of external provenience. Documents as:

- Specifications sent from the customer
- Provisions and technical characteristics
- Laws and provisions
- Use and servicing books of instruments for inner utilization
- Calibration's certificate of the instruments for inner use
- Quality certification of the suppliers

are managed as described in the procedure PR13-Management of documentation and data and on document DC22-List and distribution of quality system's documents.

4.2.4 Control of records

The papery recording documents of quality are kept into folders as indicated on document PR14–Quality system recording and archives.

The electric recordings are saved on server and undergone to the back-up procedure as on procedure PR14–Recording of the quality system and archives.

Instructions for recording are indicated on table DC–22 List and distribution of documents of the quality system. At the end of the indicated recording period, these documents will be eliminated.

The quality's recording are effectuated by the whole staff, as described on the operative procedures or on the manual.

In case in which in the relationships with some customers would emerge that contractual dispositions in accordance with the Fulgosi Giovanni snc would engage to leave documents of recordings of quality or system at customer's disposal, the consignment of such documents to customers will be managed by the responsible of the quality system, through controlled copies of which he will take into consideration when he will edit the right lists of distribution.

5 MANAGEMENT RESPONSIBILITY

5.1 Management commitment

The diligence of the managerial staff in the design and implement of the quality system has the aim to give to the group a sort of methodology for the continuous improvement through the involving of the whole staff in the creation of managerial values. The leader staff pursues the continuous improvement of management performances re-examining regularly the quality system (5.6), fixing aims more and more ambitious, making then available suitable resources in terms of infrastructures (0) and of staff (6.2).

5.2 Customer focus

Fulgosi Giovanni ensures that the requirements of a customer are defined and possible their satisfaction to the aim of improve the satisfaction of the customer itself. This kind of aim is pursued putting in evidence, besides the objective requirements of the product and of the service, also those that the customer could require. The requirements are object of particular checks through activities of the re-examination of the offer sent to the customer and of the order received from the customer. The operative details of this activity are described in the procedures PR01-Management of offers and contacts.

5.3 Quality policy, management commitments, corporate value

The Fulgosi Giovanni snc has already involved itself to deserve the trust of all their customers since over 30 years, believing in quality as a not formal element and in customer's satisfaction as a need, just before to be a duty : Business manager basically retains:

Ensure to customers the complete satisfaction of all the expectations and needs identified, regarding:

Conformity: Products must be always exempt from defects and satisfactory the contractual requirements at the first delivery. Same is valid for services that should always be satisfactory to the first distribution.

Assistance: Customer have right to obtain assistance and information in a very quick time and in a very efficient way.

Punctuality: The guarantee to count on absolutely reliable and predictable time of consignment is one of the main expectations of our customers. Involving, to the aim of that everything predicted in the pre-contractual stage will reflect in the real distribution of service or product's delivery, is a binding aim of Fulgosi Giovanni.

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Respect of the environment: even the most demanding customer in environmental theme, find in Fulgosi Giovanni Snc a trustful partner, because always respect for environment is a premise of all the business activities and an object of continuous checks.

Safety: the products have as first characteristic safety. On all the finished products, Fulgosi Giovanni snc carries out hardest test, always complying with normative requirements.

Ensure to staff, intended as main value resource, a safety, healthy and stimulating working habitat which:

into consideration the respect of the safety normative and the continuous improvement of the working conditions.

allows the involving, the contribution and the total increase of each one's potential.

Ensure to suppliers a common route of improvement of the product's quality of services, of environmental performance, safety and comprehension of the expectations of the customers.

the length of the relation with the partnership to realize by/through common strategies and targets of medium period.

Ensure to property the wide spreading towards new markets characterized by more and more gain, through gradual efforts, but determined.

the business income through the improvement of the productivity, the growth of the business property in terms of practice clients, of competence.

The aims and the business indicators are pointed out in the document Indicators of quality system.

5.4 Planning

5.4.1 Quality objectives

The managerial staff make a re-examination of the quality system in periodical meetings (par.5.6). During these meetings, besides, are taken into consideration the indicators of the quality system. These one do not represent only the object of the verify to achievement the aims already set in the previous examination, but they also represent a basis for an objective evaluation of the possibilities for a business improvement. In these occasions the future aims are planned and recorded on the document Indicators of the quality system

5.4.2 Quality management system planning

Fulgosi Giovanni Snc has planned structural works to the infrastructures and to the business service in the way to improve the quality of his own service and also to obtain a greater credit towards the actual and potential customers. These kind of works are coordinated by the responsible of the quality system manager. A short description will follow:

- Introduction of design review and verification into the design process
- Digitalization of final and entrance checks and in production and to the improvement both of effectiveness of the checks and efficiency of the productive process.
- Improvement of internet services to the customer who will access not only to the welding procedures but also to verify production status.

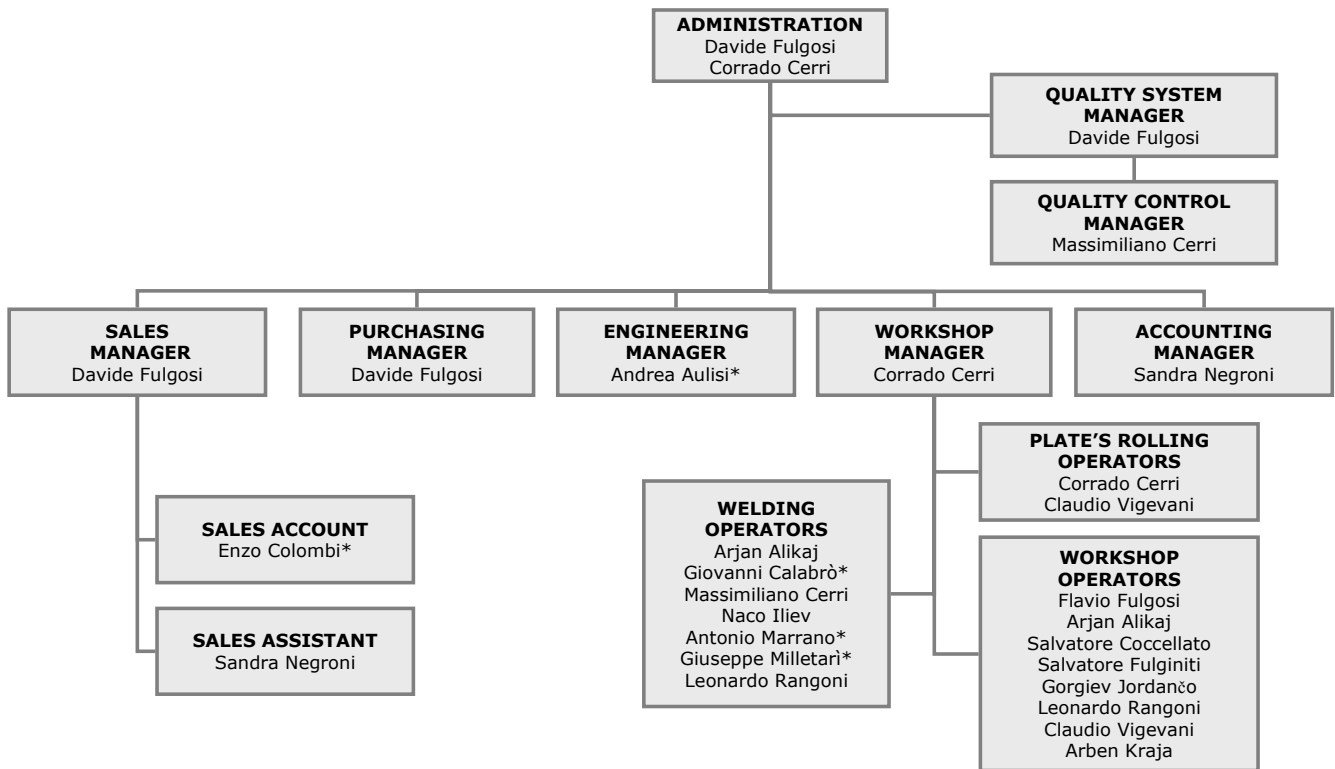
- Introduction of a hydraulic testing machine
- Enlargement of offices
- Definition of a measurement method of customer satisfaction.
- Refinement of indicators of business performances
- Software improvement for estimation management

These works are linked among them and planned in spite of targets.

5.5 Responsibility, authority and communication

5.5.1 Responsibility and authority

responsibility and authority of management described on the organization chart are described below:



It is diffused in the whole company and hanged on the public table.

The organization details and each role in the company are described in the Organization chart and company roles document.

5.5.2 Management representative

The management delegates Davide Fulgosi to represent the management and to manage quality system, to check the effective application of quality policy wanted by management. The quality system manager is also representative of the management in the relationship with third parties.

He plans and act internal audits with an external qualified consultant.

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5.5.3 Internal communication

Written communication is based on:

- Company databases
- Papery documents

Company databases represent the base of the commercial (Lastracc_BE data base), purchases and production planning and verify (Production data base) and accounting processes (Arco II). Such instrument have been designed with Microsoft Access and Visual Basic.

Access limitation are described on document and archives procedures.

Software modification are leaded only after the business processes are been planned.

Quality System Manager is also responsible for software design, modification and verification.

Verbal communication is important for Fulgosi Giovanni Snc, but recorded on reports on official meeting or system review monitoring.

5.6 Management review

Annually management reviews the quality system taking into consideration:

- Previous business targets
- Need and opportunities of variations to quality system
- Analysis of unconformities and claims
- Analysis of business indexes.
- Analysis of customer satisfaction
- Quality Policy uptodateness
- Training needs
- Material resources needs
- Internal audits reports
- Suppliers qualification status
- Conformity of quality system and process modifications
- Operative improvement plan

Quality system review has the aim to define, confirm and improve quality targets for products and business processes with the right amount of resources.

6 Resource management

6.1 Provision of resources

The company has defined the necessary resources to achieve the targets of the quality system.

6.2 Human resources

6.2.1 Competence, awareness and training

Fulgosi Giovanni Snc evaluates the training needs of the staff and the welding qualifications as well. New resources are needed in case of:

- New engagements requiring human resources not available at the moment
- Particular needs individuated during the quality system review

In these occasion the attention is focused on the kind of qualifications necessary for new staff related to the new job. In procedure PR 15 – organization and training are detailed the engagement and training phases and the organization process as well.

Training reports are archived and effectiveness is evaluated by the management.

6.2.2 Internal audits staff

Quality System Manager co-work with an external consultant with necessary qualifications for internal auditing.

6.2.3 Welding processes staff

The welders are qualified according to experiences carried on with expert staff and on the basis of the results of Rx-Tests. This training is recorded on proper documents as described in chapter 7.5.2.

6.2.4 Quality Control Staff

Quality Control Staff is trained by Quality System Manager on the basis of internal procedures, technological and process innovations. The training is recorded on proper documents.

6.3 Infrastructure

Fulgosi Giovanni Snc evaluates the infrastructures needs during annual quality system review to improve productive capability and quality of work inside the company. Other materials can be bought beyond the planning if strictly necessary.

6.4 Work environment

Safety Manager constantly update the predicted documentation to satisfy requirements of D.Lgs. 626/94. The planning for purchasing of products for safety is edited annually in cooperation with an external consultant. Other materials can be bought beyond the planning if strictly necessary.

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7 Product realization

7.1 Planning of product realization

Processes and roles	Previous process	Input documents	Output documents	Next process
PRIMARY PROCESS				
PR01 Estimations, contracts, orders Trade Manager (R) Technical Manager Trade Assistant	–	Data and requirements Sheet Order Contacts Data Base	Offer Price list Work sheet	PR02 PR03 PR07
PR03 Production Planning Production Manager (R) Technical Manager Trade Manager Workshop Operator Rolling Operator Welding Operator	PR02 PR04 PR07	Drawings, specifications, requirements	Work sheet	PR04
PR04 Checks and tests Technical Manager (R) Operator	PR02	Work sheet Purchase order	Work sheet	PR03
PR07 Design Technical Manager (R) Trade Manager Production Manager	PR01	Design Requirements Drawings, specifications, requirements Design Planning	Design Diary fabrication and test plan	PR03
PROCESS SUPPORT				
PR03 Purchase Purchase Manager (R) Accounting Manager	PR16	Offer request Suppliers list	Supplier order	PR03
PR05 Control of devices Quality System Manager (R)	–	Calibration annual plan	Calibration annual plan	–
PR11 Non conformity and claims Quality System Manager (R)	PR01 PR04	–	Non conformity report	PR12
PR12 Azioni di miglioramento Quality System Manager (R) General Manager	PR06 PR11	Performance Indexes management review	Improvement Form	–
PR06 internal audit Quality System Manager (R)	–	Annual plan of audit	Internal audit report	PR12
PR13 Documents and data management Quality System Manager (R) General Manager	–	Company Documents	Documents and records list	–
PR14 Quality Records Workshop Manager (R) Quality System Manager	–	Documents and records list	–	–
PR15 Internal Training General Manager (R) Quality System Manager	–	Organization Chart Role Training plan	Personal Sheet	PR06
PR16 Suppliers qualification Quality System Manager (R) Purchase Manager	–	Non conformity	Suppliers list	PR06

Processes are described by flowcharts focused on:

- Activities
- Roles
- Documents
- Instruments
- Input elements
- Output elements
- Links with other processes

7.2 Customer related processes

Fulgosi Giovanni Snc dedicates much care in the first phase of analysis in order to make an offer which includes all the customer requirements. In case of new products (non Standard), the offer is followed by a technical document which represent the reference point in next process of design.

The detailed description of the phases of the process is documented in [PR01 –Estimations, contracts, orders.](#)

7.2.1 Determination of requirements related to the product

Requirements related to the product are determined in the pre-contractual stage. Specifications are usually supplied by the customer. In the case that customer is not able to supply enough clear and detailed specifications, those are internally edited.

The detailed description of this phase of the process, is documented in [PR01 – Estimations, contracts, orders.](#)

7.2.2 Review of requirements related to the product

Requirements related to the product are reviewed by the Trade Manager in order to prevent mistakes on pricing, timing, requirements and imprecise contractual parameters.

The detailed description of this phase of the process, is documented in [PR01 – Estimations, contracts, orders.](#)

7.2.3 Customer communication

Trade Manager is the reference point of the customer. He understands the customer needs and refers to General Manager about the customer satisfaction.

Communications with customer are written and recorded and then saved in the order file.

An important communication media is represented by www.fulgosi.com through which the customer can use free services like automatic creation of WPS and PQR, and real time control on orders.

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7.3 Design and development

Fulgosi Giovanni S.n.c. Technical Manager coordinates the design operation. He closely cooperate with Trade Manager to ensure the maximum matching between design results and customer requirements. Instruments used in the technical office are Autodesk Autocad for drawings and self made calculation sheet and databases for design calculations. Access to updated norms and materials data is guaranteed by subscriptions to on-line databases.

The detailed description of the process is documented in [PR07 – Design](#).

7.3.1 Design and development planning

Planning of design and development is made by the Technical Manager who predicts all the design phases and assigns people and timings to them. He periodically reviews the design progress.

The detailed description of this phase of the process is documented in [PR07 – Design](#).

7.3.2 Design and development inputs

Technical Manager evaluates the completeness of data during the planning phase. He looks for:

- a) Functional and performance requirements supplied by the customer or internally written,
- b) Mandatory or voluntary norms and customer specifications,
- c) information from previous similar designs or other requirements essential for design and development.

Frequently used norms are ASME, ANSI, API, EN13445, but applicable norms are researched each time a new project begins.

The detailed description of this phase of the process is documented in [PR07 – Design](#).

7.3.3 Design and development outputs

The output of design is:

- a) Assembly and details drawings
- b) Calculation report
- c) Fabrication plan
- d) Technical notes, dossier, manuals if required

are controlled by the Technical Manager who ensures that they could be easily verified against the customer requirements prior to release.

The detailed description of this phase of the process is documented in [PR07 – Design](#).

7.3.4 Design and development review

Technical Manager performs systematic reviews of outputs of design and development in relation to customer requirements defined in the planning phase. In this case he cooperates with all people involved in the project.

Proposals of necessary actions to solve problems are done in order to carry on the project.

The detailed description of this phase of the process is documented in [PR07 – Design](#).

7.3.5 Design and development verification

Design and development verification is carried out by Technical Manager to ensure that the design and development outputs have met the design and development input requirements. The records of these verifications are recorded on sheets and meeting reports and stored in the project file.

The detailed description of this phase of the process is documented in [PR07 – Design](#).

7.3.6 Design and development validation

Technical Manager validates design and development when the resulting product is capable of meeting the requirements for the specified application required by the customer. When it is not possible to perform tests of real effectiveness of the products, Technical Manager validates design and development after approval by the client. The detailed description of this phase of the process is documented in [PR07 – Design](#).

7.3.7 Control of design and development changes

Control of design and development changes are managed by the Technical Manager who ensures that any change will be reviewed, verified and validated before implementation.

The detailed description of this phase of the process is documented in [PR07 – Design](#).

7.4 Purchasing

7.4.1 Purchasing process

Goods purchased by Fulgosi Giovanni S.n.c. are basically:

- Raw materials (Tubes, sheets, flanges, ecc)
- Welding materials
- Service materials and equipment

Purchase Manager submits orders to supplier by *LastRacc* DB and stores them paperly to allow inspection at receiving.

Activities assigned to external workers are:

- Non destructive tests
- Heat and superficial treatments
- Mechanical works

The detailed description of this phase of the process is documented in [PR02 – Purchasing](#).

7.4.2 Purchasing information

Specifications are detailed on purchase order, if necessary with drawings and schemes. These information, approved by Purchase Manager before submitting to the supplier, are clear enough to allow the inspection phase.

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7.4.3 Verification of purchased product

Specifications are detailed on purchase order, products are inspected at their entry on the basis of the worksheet, as described on [PR04 – Checks and Tests](#).

The carried out inspections are:

- Documental verification
- Marking inspection
- Visual inspection
- Dimensional check

Qualifications of supplier

Goods are purchased by Fulgosi Giovanni S.n.c. exclusively from qualified suppliers. Qualifications methods are described in [PR04 – Supplier Qualifications](#)

Inspections of the Supplier company are performed also, especially when new products start or when

7.5 Production and service provision

7.5.1 Control of production and service provision

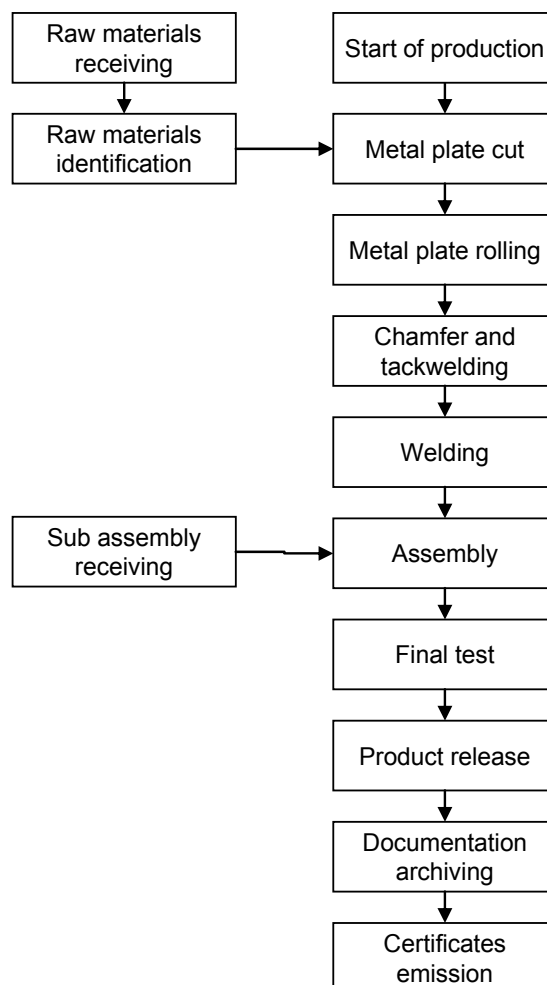
Production process is kept under control by the [PR03 – planning and production](#) procedure. Phases composing the process are:

- Start of production
- Raw materials receiving
- Raw materials identification
- Metal plate cut
- Metal plate rolling
- Chamfer and tack welding
- Welding
- Assembly
- Final test
- Product release
- Documentation archiving
- Certificates emission

Following documents are prepared to assure correct planning and executions of production operations:

- Cutting sheet
- Work sheet

Additional information such as specifics, drawings, etc, will be attached to the above mentioned documents.



The single phases re detailed in the following documents:

- IO 01 – Specimen
- IO 02 – Traps functional test
- IO 03 – Hydraulic test
- SP 01 – Traceability
- SP 02 – Metal sheet cutting
- SP 03 – Filletting
- SP 04 – Transfer of marks
- SP 05 – Welding
- SP 06 – Metal sheet rolling
- SP 07 – Heat treatment
- SP 08 – Welding repairing
- SP 09 – P355NH/NL1 – EN 100228–3 Steel

Working equipment used in the workshop are:

- Oxycutting
- Rolling machine
- Submerged arc welders (S.A.W.)
- Gas metal arc welders (G.M.A.W. – F.C.A.W.)
- Gas Tungsten arc welders (G.T.A.W.)
- Manual welders (S.M.A.W.)

Quality Control Manager is responsible for equipment maintenance who records on the proper documents, when done.

7.5.2 Validation of processes for production and service provision

Fulgosi Giovanni's welding process is a special process and for this it is previously qualified. Human resources dedicated to welding activities are ASME qualified and

- WPS: Welding Procedure Specification
- PQR: Procedure Qualification Record
- WPQ: Welder Performance Qualification

are recorded, stored and updated every six months as required from related norms. The procedure SP05 – Welding is made in order to control quality of welding according to internal WPS: welding parameters are continuously checked before, during and after the welding process.

7.5.3 Identification and traceability

Identification of the product is easy in every phase of the production process. The product is identified from their entrance in the workshop till their release after testing.

Traceability is also guaranteed on raw materials, if required. SP01 – Traceability rules the activities and the whole history of the materials is recorded in the *Production Database*.

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Welding materials Traceability is also guaranteed as well because related records are on the *Work Sheet*.

7.5.4 Customer property

Main part of production is made of third party operations: PR04 Checks and tests and PR03 Production Planning rule the phases of identification, managing, working and storing. Customer property products are differently identified from other products thanks to a different code on the product itself.

Eventual damages to customer property products are readily recorded and communicated to the customer.

7.5.5 Preservation of product

Product managed by Fulgosi Giovanni Snc are:

- Steel plates between 5mm and 100mm thickness 3000mm maximum width and 12000mm maximum length.
- Steel pipes between 10" e 150" diameter.
- Welding and working materials

Managing products

Machines used to move products are:

- Bridge Cranes
- Forklift

Operators are trained on managing products.

Storing products

Only material to pay attention during storage are:

- Final Products or heat and surface treated products
- Welding and working materials

Packing products

No package is required on products managed by Fulgosi Giovanni Snc.

Preserving products

Final Products or heat and surface treated products are stored indoor on wood stands.

Welding and working materials like:

- Manual welding electrodes (S.M.A.W.)
- Welding bars (G.T.A.W.), coils and flux (G.M.A.W. – F.C.A.W. – S.A.W.)

are stored in dry places and, when necessary, preheated in ovens before usage.

Delivering products

Delivering products is not under responsibility of Fulgosi Giovanni Snc.

7.6 Control of monitoring and measuring devices

Fulgosi Giovanni Snc periodically controls measuring devices status by PR05 Control of devices procedure which takes into consideration accuracy required for measurement and necessary sensitivity for such instruments and related acceptance criteria.

The devices used in the workshop are:

- Linear gauges
- Angular gauges
- Dimes
- Temperature gauges
- direct and alternate current gauges
- direct and alternate voltage gauges
- welder head speed regulators gauges

The procedure describes how to test the gauges and the Quality Control Manager records test results on the related register.

State of maintenance of:

- rolling machines
- bridge cranes
- forklift

are managed, tested and recorded on that register as well.

8 Measurement, analysis and improvement

8.1 General

In order to verify the product conformity, the capability of the processes and improve the effectiveness of the quality management system, the Company has arranged the use of measurements techniques.

The identification of the more suitable techniques is at discretion of the Quality System Manager, in connection with the needs recognized by the organization.

8.2 Monitoring and measurement

8.2.1 Customer satisfaction

Customer satisfaction feedback through a suitable questionnaire and customer complaints will be analyzed for continuous improvements of process/product/system to ensure improve the customer satisfaction.

The Quality System Manager has the responsibility to collect the information about customer perceived quality.

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This information is part of the input for the management review meeting.

8.2.2 Internal audit

Internal audits are carried out to verify the implementation and maintenance of quality management system as per the documented procedure and the records are maintained by Quality System Manager.

The results of previous audits and the effectiveness of any remedial or corrective action is taken into consideration.

Only auditors independent from the audited area may carry out internal audits. The result of audit is brought to the attention of the responsible of the audited area. The involved personnel will commit for the resolution of the problem immediately to avoid any undue delay to eliminate any detected non conformity.

Outputs of internal quality audit are reviewed during the management review meeting.

Audits are scheduled by the Quality System Manager, in order to look into all quality system elements at least annually.

The Quality System Manager can also carry out non-scheduled audit in those areas where additional inspection of the system may be required due to importance of process as well as result of previous audit.

The internal audit report identifies the due response time for an action plan to address the detected non-conformity, if any.

8.2.3 Monitoring and measurement of processes

Fulgosi Giovanni Snc monitors and measures the quality management system processes to demonstrate the ability of the processes to achieve planned results.

When planned results are not achieved, corrective actions are implemented and monitored for effectiveness. Managers in charge of the different Company activities have to provide all the needed key performance indicators (document: Indicators), records and information, cooperating with the Quality System Manager.

The outcome of all the process measurements is recorded on an appropriate report issued by the Quality System Manager and reviewed in the following management review meeting.

8.2.4 Monitoring and measurement of product

To meet the requirement of product specification, the inspection and testing are carried out as described on [PR04 – Checks and Tests](#) procedure and related documents.

These activities include:

- Receiving inspection and testing
- In-process inspection and testing
- Final inspection and testing

All the inspections and testing, carried out on the products during proper phases of the production process, are according to contractual requirements and standards as per the quality control plan.

The results of these activities are recorded in proper documents, with the evidence of product conformity, indicating the name of the person authorizing release of product.

Product release does not proceed until the planned activities have been satisfactorily completed.

Wherever contractually agreed products are offered for inspection to the customer or their representative at Fulgosi Giovanni Snc premises.

Fulgosi Giovanni Snc has established control features to monitor and measure the characteristics of the products.

At receiving

Incoming products, before being accepted, are identified and inspected in order to verify their conformity with the requirements specified in the procurement documents.

The responsibility for the inspections on the incoming materials is the competence of Quality Control Manager.

The incoming materials may be subjected to the following inspections where applicable:

- Certification inspection,
- Marking inspection,
- Visual inspection,
- Dimensional inspection.

In process

In-process inspections are carried out as required by related procedures.

The localization and the frequency of tests and inspections depends on the importance of the features to be verified and at a certain stage of the process.

At final testing

Final products are inspected and tested in conformance to the specified requirements as required by Work Sheet and related procedures.

Inspections are recorded in suitable documents to demonstrate that product has passed the required inspections in accordance with established acceptance criteria.

The responsibility of verification is of the Quality Control Manager. Possible non-conformities are managed in accordance with the required procedures.

- certificates relevant to visual and dimensional inspections;
- certificates relevant to non destructive tests;
- certificates relevant to welding processes;
- certificates relevant to final operations of product testing.

All the records are signed by the operator, countersigned by Quality Control Manager and collected by the Production Manager.

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The Production Manager verifies them for acceptance, submits them to the customer and releases the product.

Personnel of quality department, independent from manufacturing dept., carry out final product acceptance.

Final inspection and tests requires that all planned activities have been carried out satisfactorily. Only when all of the specified inspection and tests are performed satisfactorily and after the Quality Control Manager's approval of the final documentation and testing certificates, the product shall be released or dispatched.

8.3 Control of nonconforming products

An appropriate procedure ensures that a product, which does not conform to specify requirements in any production stage, is prevented from unintended use or dispatch.

Non-conforming items are identified and segregated with non-conformity identification, and shall be recorded on the applicable inspection report. In case of a non-conformity, the Quality Control Manager issues a non-conformance report, identifies the affected product, and may involve departments and suppliers to review the affected product and to perform the remedial action.

The non-conformity review may originate one of the following dispositions:

- reworking,
- acceptance after evaluation,
- acceptance by customer's concession,
- rejection or scrap.

The non-conformance report with the subsequent actions taken and concession obtained is a quality record. When contractually agreed, the appointed department notifies the non-conformance report and the subsequent evaluation to the customer.

A concession is recorded and included into the file of the customer's job order.

The departments involved for the review of the non-conformance report report can express the following acceptance evaluations:

- materials or products satisfy the design acceptance criteria,
- the violated manufacturing acceptance criteria is categorized as unnecessary to satisfy the design acceptance criteria,
- materials or products may be repaired or reworked to satisfy the design acceptance criteria or manufacturing acceptance materials or products may be accepted if the design or acceptance criteria are changed.

After the proposed solution has been implemented, the Quality Control Manager has the responsibility to re-inspect the product and, if acceptable, release it and to close the non-conformity.

After deliverance, customer complaints are treated by Quality System Manager as field nonconformities.

After inspection the Quality System Manager identifies, documents, analyzes, takes appropriate actions and maintains records.

8.4 Analysis of data

In order to keep under control and verify the effectiveness of quality system, the Company establishes activities for collection and analysis of data from the operational records.

Analysis is carried out at least on following:

- customer satisfaction
- non-conformance trend
- delay of delivery of product or services
- characteristics of processes and products
- performances of suppliers or subcontractors
- corrective or preventive action

The Company establishes the use of statistical analysis of data for continual improvement of quality management system.

Each manager has the responsibility to identify and to use quality indicators together with the Quality System Manager and to give him access.

The elaboration of the statistical data recorded is carried out periodically by the Quality System Manager who communicates the results to Managers.

8.5 Improvements

8.5.1 Continual improvement

The Quality System Manager controls every year, with an overall review of the quality system, the application, the effectiveness and adequacy of the system with respect to the Company's aims and policy, with the objective of evaluating or implementing any necessary change.

The organization, through the management, the Quality System Manager and the Quality Control Manager, defines the control features to review and examine the action taken and the trends identified, with the aim to continually improve performance of product, process and systems.

8.5.2 Corrective action

The corrective actions are taken to eliminate the causes of non-conformities based on magnitude of problem and commensurate to the risks encountered.

Changes in the procedure resulting from corrective action are implemented, recorded, and maintained.

Corrective action control may include:

- report of product and process nonconformities.
- customer complaint
- investigation of the cause of nonconformities relating to product or system and recording the results of investigation.
- determination of the corrective action needed to eliminate the cause of nonconformities.

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- application of controls to ensure that corrective action is taken and is effective.

The managers are responsible for the implementation of corrective actions The Quality System Manager is responsible for the approval of all the corrective action requests and relevant solution proposals.

In combination with functions managers, the Quality System Manager has the responsibility to verify that the corrective actions have been completed.

The corrective action effectiveness is verified by the organization during the management review meeting.

The form, containing the description of corrective action, identifies the due response time plan to carry out the described action.

8.5.3 Preventive action

The preventive action ensures the overall activities are addressed to prevent the potential product or system non-conformities, in order to improve continuously the efficiency of the customer oriented organization. Preventive action control may include:

- the use of appropriate sources of information such as process and work operation which affect product quality, concessions, audit results, quality records and customer's complaints to detect, analyze and eliminate the potential causes of non-conformities.
- determining the steps needed to deal with any problems requiring preventive action.
- initiation of preventive action and application of control to ensure that it is effective. ensuring that relevant information on action taken is submitted for management review.

The preventive action effectiveness is verified by the organization during the management review meeting.