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SPECIALTY METAL PRODUCTS

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QUALITY ASSURANCE MANUAL

Approved by: _____ 1 APR 2021
(D Cawse - Director - Operations) Date

Approved by: _____ 1 APR 2021
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Approved by: _____ 1/4/21
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Signed on original

QUALITY ASSURANCE MANUAL

Contents Page

1. Issue History Fine Tubes Quality Assurance Manual

Issue 1	First Issue	August 1975
	Update info removed for brevity	
Issue L0	Updated for AS9100 Rev. C	August 2011
Issue L1	Reviewed and revised - ownership change and general update	December 2014
Issue L2	Reviewed and revised for update to Process description and Ownership change	July 2015
Issue L3	Updated for organisational changes	Jan 2016
Issue L4	Updated organisational chart and process map.	April 2016
Revision M0	Updated for AS9100 Revision D:2016	March 2018
Revision M1	Update document matrix & organisational chart	May 2019
Revision 63	Transfer of documents to Intelex / Sharepoint and amendment of revision numbering format	Aug 2020
Revision 64	A statement added for Clause 8.3 design and development of Products and Services being excluded from the Quality Management system	Apr 2021

2. Issue of The Quality Manual

The internal distribution of the Quality Manual is carried out by insertion on the Fine Tubes Intranet system

Foe external access Fine Tubes website: www.finetubes.com is updated with the latest issue of the quality manual.

3. Amendment To The Quality Manual

The Quality Manual is reviewed periodically, and any amendments are published in accordance with the Control of Documents procedures.

Summary details of each revision are identified on the document change page at the front of this manual.

4. References:

ISO 9001:2015- Quality Management Systems - Fundamentals and Vocabulary.

AS/EN 9100 Rev D - Quality Management Systems - Aerospace - Requirements.

5. Fine Tubes - An Introduction

Fine Tubes Limited was registered in 1943 as a subsidiary of Moray Engineering Company limited, and situated at Surbiton, Surrey. The main product at this time was Cathodes from Nickel Alloys for the electronics Industries.

In 1953, the Company increased its manufacturing capabilities to encompass tube drawing, using mainly Nickel materials.

Also, at this time, Superior Tube Company of Norristown, Pennsylvania, USA acquired a major interest in Fine Tubes who, in turn, became the parent company to Moray Engineering Company Limited. Ownership migrated to Superior Group Inc. with Superior Tube Co and Fine Tubes remaining as sister companies.

During 1957, Fine Tubes commenced processing tubing in the Stainless-Steel grades from material supplied from Superior Tube Company and entered the field of Aircraft Hydraulic tubing. The resulting business acquired a steady increase in capacity from 1958 to 1959 culminating in the decision to build a new modern tube mill in Plymouth, Devon UK, where production commenced in 1962.

In 2015 Ametek Inc. acquired Fine Tubes and Superior Tubes to enhance the Precision Tube and Strip sector of the Speciality Metals Group within the Ametek Electromechanical Group and

The Plymouth site now has 20 000 m^2 of production facilities on a total area of 65000m^2.

Tube is produced by two methods, Pilgered & cold-drawn seamless or longitudinally welded. For seamless tube raw material is purchased as extruded hollows or bored out bars in a range of sizes. This material is then progressively cold reduced by pilgering and drawing to final size. Welded tube is produced from flat strip, formed and longitudinally welded. Longer lengths can be produced by orbital welding coils of tube together. Additional processes available are heat treatment, pickling, polishing, chemical milling, and cutting, cleaning and printing

The Quality Management System was introduced into Fine Tubes in 1975 and is regularly audited, internally according to the Internal Audit programmes, and externally by Customers and Approval/Regulatory bodies, including BSI, TUV, P.R.I. and a number of significant customers.

Fine Tubes Limited's special processes are regularly reviewed and approved by the Performance Review Institute in accordance with the requirements of the relevant Nadcap commodities.

Process control systems and full test facilities are available to ensure that material meets required specifications.

Today Fine Tubes Limited is one of the major manufacturers of precision tubing in stainless steel, nickel alloys and titanium alloys.

This tubing is supplied to meet a range of specialist markets including:

Nuclear fuel cladding,

Aircraft tubing for both engine and airframe use.

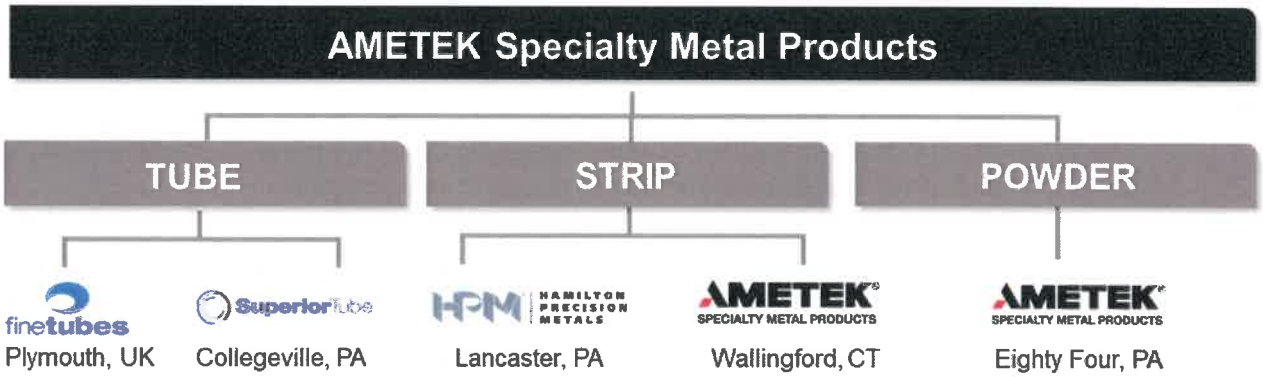
Oilfield installations of both control line and instrumentation tubing.

Medical device raw material, both general medical and implant type.

Clean bore tubing used for semiconductor manufacturing plant installations and HPLC applications.

General commercial and equipment tubing.

6. Fine Tubes Limited - Ownership Structure



7. Fine Tubes Limited - Our Core Values

A global tubing supplier dedicated to the advancement of our customers; we demonstrate:

Quality and Excellence - Touching the lives of people around the world.

Honesty and Integrity - Fostering trust and inspiring confidence in what we say and in what we do.

Customer and Service Focus - Strong external and internal relationships.

Innovation - In all aspects of our business.

8. Fine Tubes Basic Beliefs

Quality is the foundation of our operation. We aspire to get it right first time in all aspects of our business.

We take pride in developing committed relationships with customers and suppliers with whom we can develop partnerships for mutual advantage. We believe in providing technical solutions to our customers by understanding their needs. We will seek to demonstrate our integrity, professionalism, and a continuous commitment to efficient service.

We will value and respect all our employees by demonstrating our commitment to creating a safe and enjoyable working environment, which encourages personal fulfilment and empowers teamwork. We will openly communicate with all our employees and, within a climate of trust, actively encourage a decisive, pro-active organisation, focused on its goals.

We will be a profitable and cost-effective producer of quality tubing for specialist applications and will seek to define ourselves in our chosen markets by providing products, which by need will differentiate us from commodity suppliers. We will aim to identify and exploit opportunities for specialist tubing applications early in their life cycle.

We will endeavour to seek our stakeholder's confidence, loyalty and respect by meeting their expectations for short and long-term financial and strategic objectives. We aim to benefit from and support synergies with other business stakeholders.

We value our status as an International player in our chosen market sectors and understand the need to enhance that status.

We value our openness, honesty, and fairness in all our business dealings and accept our ethical and moral responsibility to society.

We value an innovative approach in every aspect of our business and will measure our success as an innovative company

9. Fine Tubes Quality Management System

Fine Tubes ensures that all its products are manufactured to fully meet the requirements of its customer's orders, specifications, and or documented instructions.

A quality management system has been developed within Fine Tubes to ensure that its manufacturing activities and documented procedures fully comply with this aim.

The purpose of this quality manual is to describe the Quality Management System of Fine Tubes Limited.

This ensures compliance with all orders placed on the Company and with the terms of approvals granted by Authorities and approving companies. The system has been developed to meet AS9100, ISO 9001: and Customer requirements.

Customers and Regulatory Authority representatives are permitted access to the Fine Tubes Quality Management System documentation.

Fine Tubes manufactures tubing to customers' order requirements, drawings, or specifications as applicable and does not design or develop products so AS9100 Rev D Clause 8.3 design and development of Products and Services is excluded from the Quality Management system. Fine Tubes does develop manufacturing processes as required to achieve customers' product requirements.

Post-delivery activities are limited to resolving issues with nonconforming material.

Product Inspectors at Fine Tubes report into the Operations function of the business to ensure that customer requirements are met as effectively as possible. Independence and objectivity are maintained through a defined line of authority to the QA / Technical department

Management of Risk to the achievement of applicable requirements is controlled through the Contract review processes, Product reviews, Technical Reviews, Control of Change and Risk Management processes. Business level risk is addressed by using QSP47. Operational risk uses PFMEA and similar risk management tools as appropriate.

Configuration management Clause 8.1.2 is addressed at Fine Tubes through the strict use of product identity & traceability systems, internal production specifications, part number control systems and PWS revision controls.

Although Fine Tubes Limited is a process-based organisation, key projects are defined and managed using a project management process (QSP 8).

A variety of statistical and analytical techniques are employed where applicable, to monitor and control processes.

Management Review (Clause 9.3) is a continual process at Fine Tubes.

Understanding the Organization and Its Context

Fine Tubes has reviewed and analysed key aspects of itself and its stakeholders to determine the strategic direction of the company. This requires understanding internal and external issues that are of concern to Fine Tubes and its interested parties (per 8.2 below); the interested parties are identified per the document Context of the Organisation Procedure QSP 47. Such issues are monitored and updated as appropriate and discussed as part of management reviews.

Understanding the Needs and Expectations of Interested Parties

The issues determined per 8.1 above are identified through an analysis of risks facing Fine Tubes and its interested parties. "Interested parties" are those stakeholders who receive our Products, or who may be impacted by them, or those parties who may otherwise have a significant interest in our company. These parties are identified per the document Context of the Organisation Procedure QSP 47. This information is then used by senior management to determine the company's strategic direction. This is defined in records of management review, and periodically updated as conditions and situations change.

Determining the Scope of the Quality Management System

Based on an analysis of the above issues of concern, interests of stakeholders, and in consideration of its products and services, Fine Tubes Ltd has determined the scope of the management system as follows:

The manufacturing and inhouse testing of cold finished precision tubes in Stainless Steel, Nickel and Titanium alloys for critical applications in Aerospace, Nuclear, Oil & Gas, Chemical and Medical industries. The system has been developed to meet AS9100, ISO 9001: and Customer requirements.

10. Management Commitment

The senior management team at Fine Tubes demonstrates its commitment to the importance of quality issues to fulfil customer requirements, across the organisation.

To achieve this, they will show their commitment by ensuring the availability of necessary resources, performing Management Reviews and communication of the Quality Policy and Objectives throughout the organisation.

Fine Tubes is committed to the concept of continual quality improvement through the constant refinement and improvement of the Quality Management System and the progressive elimination of weaknesses.

The designated Quality Management Representative, as identified in the organisation structure, has the organisational freedom and unrestricted access to top management to resolve quality management issues

Tools used to realise this aim are detailed but not limited to the list below:

Control of Non-Conforming Product.

Measurement of Customer Satisfaction.

Internal Auditing.

Corrective / Preventive Action.

Management Review.

Data Collection and Analysis.

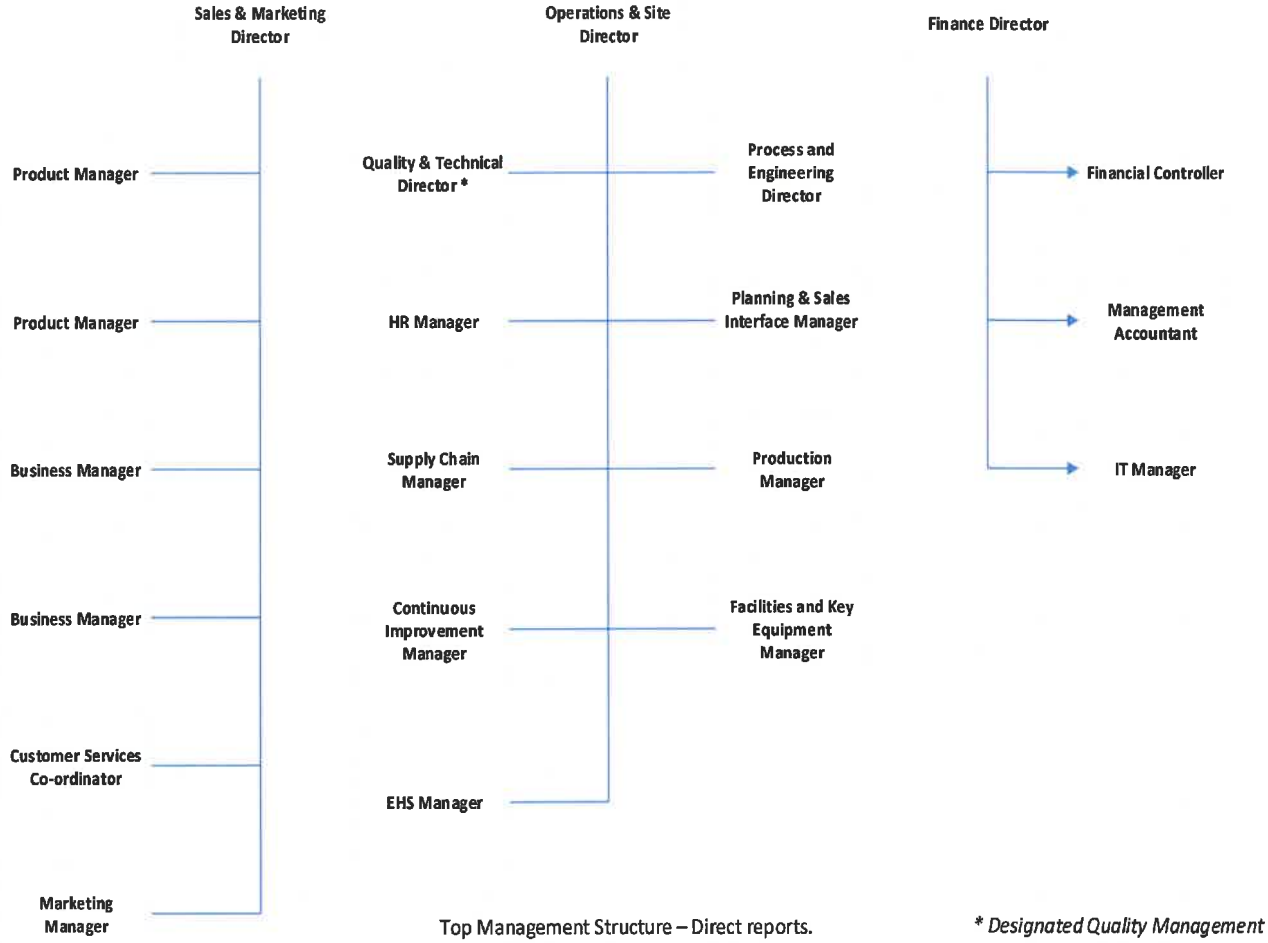
Risk Management tools.

Interested Parties.

Internal/External Issues.

Resource requirements.

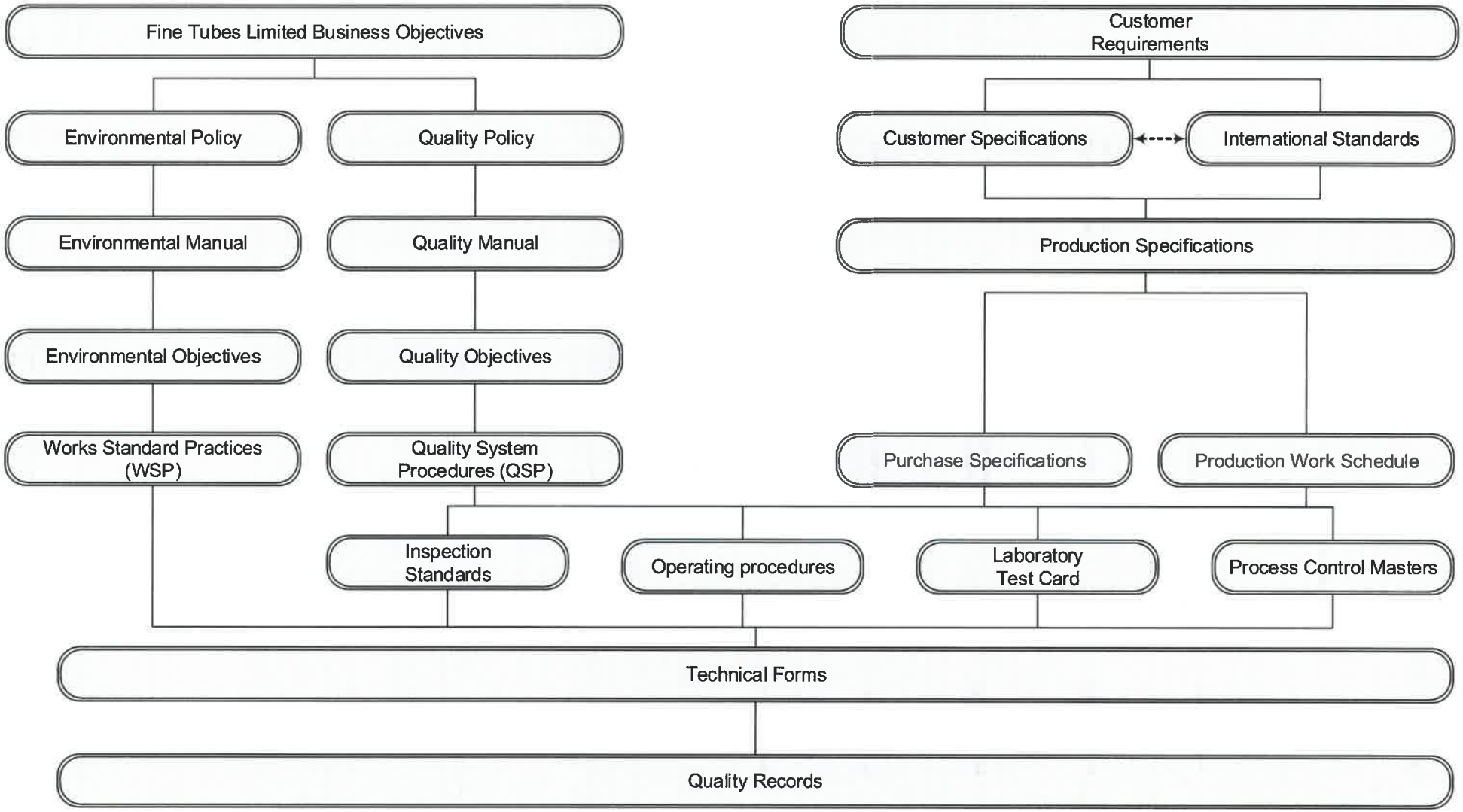
11. Organisation Structure



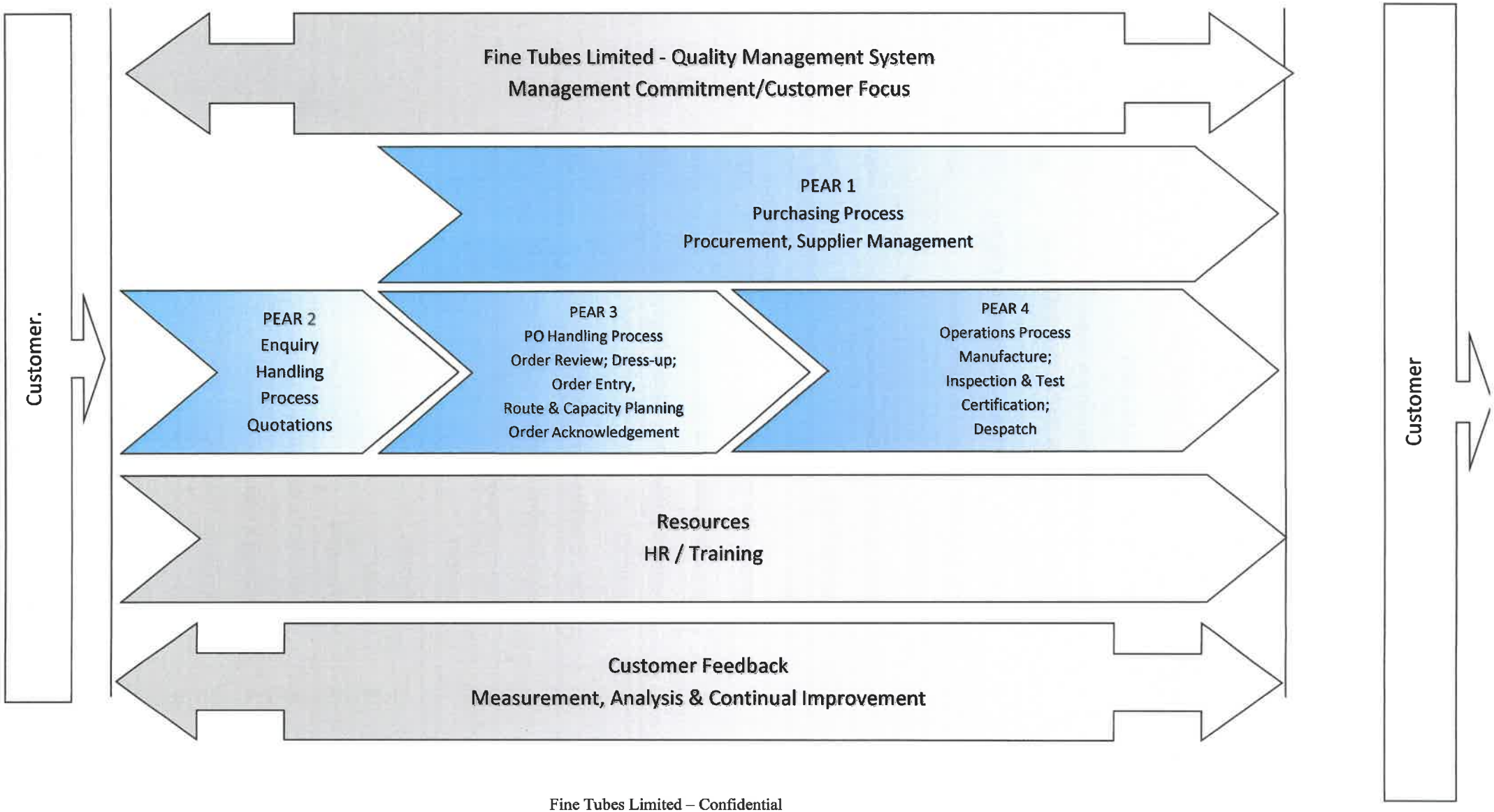
Top Management Structure – Direct reports.
(Fine Tube Ltd responsiblities)

** Designated Quality Management Representative*

12. Documentation Hierarchy



13. Business Process Flow



14. QMS Documentation Matrix

Fine Tubes has a comprehensive system of procedures, work instructions and standard practices. These are available on the Fine Tubes for on-site review.

AS9100 Reference				Title	Fine Tubes Document Identity	Owner
4				CONTEXT OF THE ORGANISATION		
4	1			Understanding the Organisation & its Context	QSP47	Leadership Team
4	2			Understanding the Needs and Expectations of Interested Parties	QSP47	Leadership Team
4	3			Determining the Scope of the Quality Management System	QSP1	Leadership Team
4	4			Quality Management System and its Processes	QSP1	QA & Technical
5				LEADERSHIP		
5	1			Leadership and Commitment	QSP1	Leadership Team
5	1	2		Customer Focus	QSP1	Leadership Team
5	2			Policy	QD175	Leadership Team
5	2	1		Establishing the Quality Policy	QD175	Leadership Team
5	2	2		Communicating the Quality Policy	QD175	Leadership Team
5	3			Organizational Roles, Responsibilities & Authorities	QSP25	Leadership Team
6				PLANNING		
6	1			Actions to Address Risks & Opportunities	QD197	Leadership Team
6	2			Quality Objectives & Planning to Achieve Them	QD112	Leadership Team
6	3			Planning of Changes	QSP46	Leadership Team
7				SUPPORT		
7	1			Resources	QSP46	Leadership Team
7	1	2		People	QSP40	Leadership Team
7	1	3		Infrastructure	QSP33	Leadership Team
7	1	4		Environment for the Operation of Processes	Various QMS procedures	Operations
7	1	5		Monitoring and Measuring Resources	QSP34	QA & Technical
7	1	5	2	Measurement Traceability	QSP34	QA & Technical

AS9100 Reference				Title	Fine Tubes Document Identity	Owner
7	1	6		Organisational Knowledge	QSP49	Leadership Team
7	2			Competence	QSP40	HR
7	3			Awareness	QSP40	HR
7	4			Communication	QSP1	Leadership Team
7	5			Documented Information	QSP1	QA & Technical
7	5	2		Creating and updating	QSP2 & QSP3	QA & Technical
7	5	3		Control of Documented Information		QA & Technical
8				Operation		
8	1			Operational Planning and Control	QSP7	Leadership Team
8	1	1		Operation Risk Management	QSP44	QA & Technical
8	1	2		Configuration Management	QSP18	QA & Technical
8	1	3		Product Safety	QAP73& QAP 32	Operations
8	1	4		Prevention of Counterfeit Products	QSP48	QA & Technical
8	2			Requirements for Products and Services	QSP6	Sales & Marketing
8	2	1		Customer Communication	QSP6	Sales & Marketing
8	2	2		Determining the Requirements for Products and Services		
8	2	3		Review the Requirements for Products and Services	QSP7	Customer Services, Technical & Planning
8	2	4		Changes to Requirements for Products and Services		
8	3			Design and Development of Products and Services	QSP8	Planning
8	4			Control of Externally Provided Processes, Products and Services	QSP13 & QSP14	Purchasing
8	4	2		Type and Extent of Control	QSP15	QC
8	4	3		Information for External Provider	QSP14 & FT Purchase Specs	QC
8	5			Production and Service Provision	FT Specifications	Operations
8	5	1		Control of Production and Service Provision	QSP7 & PS 16	Operations
8	5	1	1	Control of Equipment, Tools and Software Programs	QSP127	Maintenance
8	5	1	2	Validation and Control of Special Processes	QSP12	Operations

AS9100 Reference				Title	Fine Tubes Document Identity	Owner
8	5	1	3	Production Process Verification	QSP11	Operations
8	5	2		Identification and Traceability	QSP18	Operations
8	5	3		Property Belonging to Customers or External Providers	QSP7	Operations
8	5	4		Preservation	QAP73& QAP 32	Operations
8	5	5		Post-delivery Activities	QSP21	QA & Technical
8	5	6		Control of Changes	QSP7	Operations
8	6			Release of Products and Services	QSP7431 & QAP39	QA & Technical
8	7			Control of Nonconforming Outputs	QSP21	QA & Technical
9				PERFORMANCE EVALUATION		
9	1			Monitoring, Measurement, Analysis and Evaluation	Management Reviews	Leadership Team
9	1	2		Customer Satisfaction	QSP45	Sales & Marketing
9	1	3		Analysis and Evaluation	Management Reviews	Leadership Team
9	2			Internal Audit	QSP43	QA & Technical
9	3			Management Review	QSP46	Leadership Team
10				IMPROVEMENT		
10	1			General	QSP46 & QSP44	Leadership Team
10	2			Nonconformity and Corrective Action	QSP44	QA & Technical
10	3			Continual Improvement	Management Reviews	Leadership Team

15. Amendments from #64

- Clarification of exclusion Clause 8.3
- Minor edit of headings to align formatting