

Figure 4-18. Understanding Effects through Pareto Charts

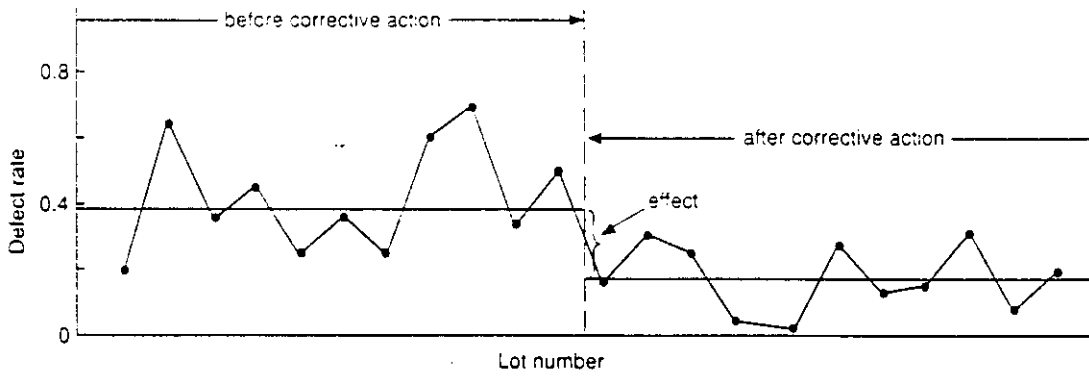


Figure 4-19. Verifying Results with a Run Chart

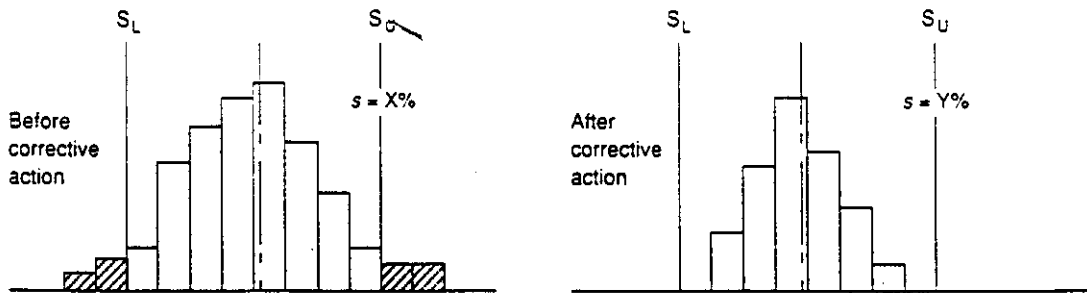


Figure 4-20. Verifying Results with a Histogram

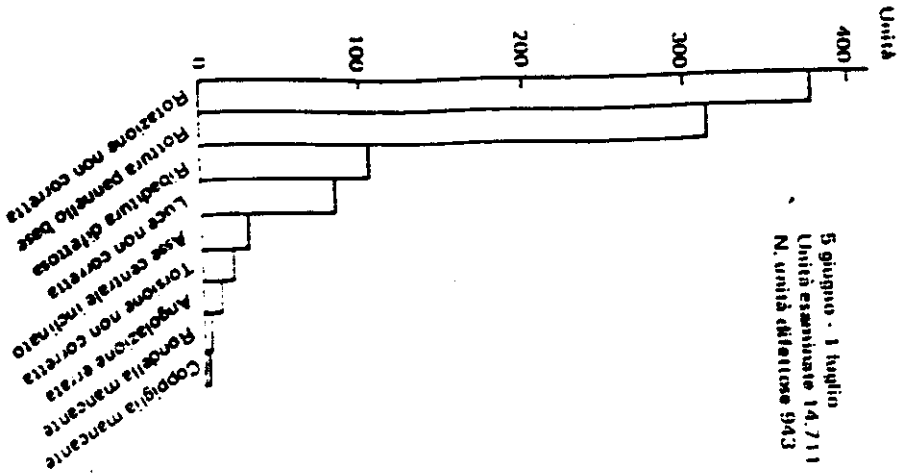


Fig. 12.16 - Diagramma di Pareto relativo agli scarti di un mese (quattro settimane)

| Date: | Giugno 5 | 6 | 7 | 8 | 9 | 10 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | Lugli. 1 | |
|-------------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|----|----------|--|
| Ribaditura difettosa | 3 | 6 | 14 | 18 | 15 | 2 | 4 | 3 | 3 | 4 | 2 | 3 | 5 | 2 | 6 | 2 | 2 | | | | | | | | | | |
| Rotazione non corretta | 15 | 18 | 14 | 14 | 19 | 13 | 14 | 16 | 20 | 23 | 18 | 17 | 17 | 13 | 12 | 15 | 15 | 17 | 13 | 19 | 11 | 12 | 14 | 16 | 14 | 16 | |
| Torsione non corretta | 3 | | | | | 1 | 2 | | | | | 5 | | | 4 | 2 | | | | | | | | | | | |
| Luce non corretta | 9 | 1 | 4 | 4 | 1 | 3 | 5 | 8 | 6 | 3 | 3 | 7 | 3 | 7 | 2 | 3 | 1 | | | | | | | | | | |
| Rotture dan. nello base | 8 | 11 | 7 | 16 | 6 | 9 | 7 | 7 | 13 | 10 | 21 | 25 | 19 | 14 | 9 | 8 | 16 | 8 | 8 | 31 | 19 | 23 | 16 | 12 | | | |
| Angolazione errata | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Asse centrale inclinato | 2 | 1 | 4 | 3 | | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | | | | | | | | | |
| Altri | 33 | 34 | 26 | 42 | 46 | 41 | 30 | 38 | 44 | 39 | 54 | 52 | 36 | 41 | 39 | 34 | 39 | 37 | 37 | 37 | 46 | 48 | 39 | 34 | | | |
| Totale | 618 | 621 | 621 | 621 | 621 | 611 | 610 | 615 | 611 | 608 | 595 | 603 | 620 | 621 | 615 | 612 | 609 | 614 | 608 | 607 | 609 | 622 | 615 | 601 | | | |

Tab. 12.7 - Gruppo ingranaggi

| Gruppo | 5 | 6 | 7 | 8 | 9 | 10 | Totale |
|-------------------------|------------|------------|------------|------------|------------|------------|--------------|
| Ribaditura difettosa | 2 | 6 | 14 | 18 | 15 | 15 | 56 |
| Rotazione non corretta | 15 | 18 | 14 | 14 | 19 | 12 | 83 |
| Torsione non corretta | | | | | | 1 | 4 |
| Luce non corretta | 6 | 1 | 4 | 4 | 1 | 2 | 18 |
| Rotture dan. nello base | 8 | 11 | 7 | 16 | 6 | 9 | 57 |
| Angolazione errata | | | | | | | 2 |
| Asse centrale inclinato | 2 | 1 | 4 | 3 | | | 10 |
| Altri | 33 | 34 | 26 | 42 | 46 | 41 | 242 |
| Totale | 618 | 621 | 621 | 611 | 610 | 615 | 3.684 |

Tab. 12.8 - Torni settore

| Date | 16 | 20 | 21 | 22 | 23 | 24 | Totale |
|-------------------------|------------|------------|------------|------------|------------|------------|--------------|
| Ribaditura difettosa | 3 | 5 | 2 | 6 | 2 | 2 | 20 |
| Rotazione non corretta | 17 | 13 | 12 | 15 | 16 | 1 | 64 |
| Torsione non corretta | | | 4 | 2 | | | 6 |
| Luce non corretta | 3 | 7 | 2 | 3 | 1 | | 16 |
| Rotture dan. nello base | 10 | 14 | 9 | 8 | 16 | 8 | 64 |
| Angolazione errata | 1 | 1 | | | | | 2 |
| Asse centrale inclinato | 2 | | | | | | 2 |
| Altri | 1 | | | | | | 1 |
| Totale | 36 | 41 | 28 | 34 | 39 | 27 | 199 |
| Unità prod. | 620 | 621 | 615 | 613 | 620 | 614 | 3.763 |

Tab. 12.9 - Serrande settore

| Date | 12 | 13 | 14 | 15 | 16 | 17 | Totale |
|-------------------------|------------|------------|------------|------------|------------|------------|--------------|
| Ribaditura difettosa | 2 | 4 | 3 | 3 | 4 | 2 | 18 |
| Rotazione non corretta | 14 | 15 | 20 | 23 | 19 | 17 | 109 |
| Torsione non corretta | 2 | | | | | | 7 |
| Luce non corretta | 6 | 8 | 6 | 3 | 3 | 7 | 32 |
| Rotture dan. nello base | 7 | 7 | 13 | | 21 | 26 | 64 |
| Angolazione errata | | | | | | | 2 |
| Asse centrale inclinato | 1 | 1 | 1 | | | | 3 |
| Altri | | | | | | | 8 |
| Totale | 20 | 26 | 44 | 26 | 44 | 45 | 205 |
| Unità prod. | 610 | 616 | 611 | 625 | 625 | 608 | 3.685 |

Tab. 12.10 - Ombre settore

| Date | 25 | 27 | 28 | 29 | 30 | 1.07 | Totale |
|-------------------------|------------|------------|------------|------------|------------|------------|--------------|
| Ribaditura difettosa | | | | | | | 11 |
| Rotazione non corretta | 13 | 10 | 11 | 12 | 10 | 14 | 60 |
| Torsione non corretta | 1 | 1 | 1 | | | | 3 |
| Luce non corretta | 3 | 2 | 6 | 4 | | | 17 |
| Rotture dan. nello base | 8 | 21 | 19 | 23 | 19 | 12 | 102 |
| Angolazione errata | 2 | | | | | | 4 |
| Asse centrale inclinato | 3 | 9 | | | | | 14 |
| Altri | | | | | | | 1 |
| Totale | 22 | 43 | 37 | 49 | 31 | 24 | 216 |
| Unità prod. | 628 | 607 | 609 | 612 | 616 | 601 | 3.763 |

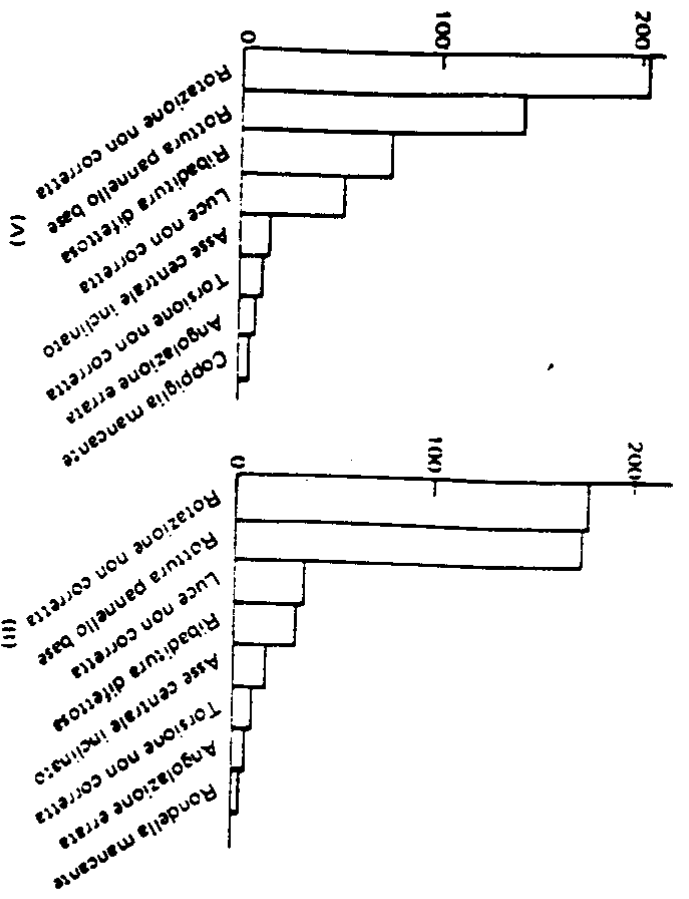


Fig. 13.17 - Diagrammi di Pareto per periodi di due settimane.

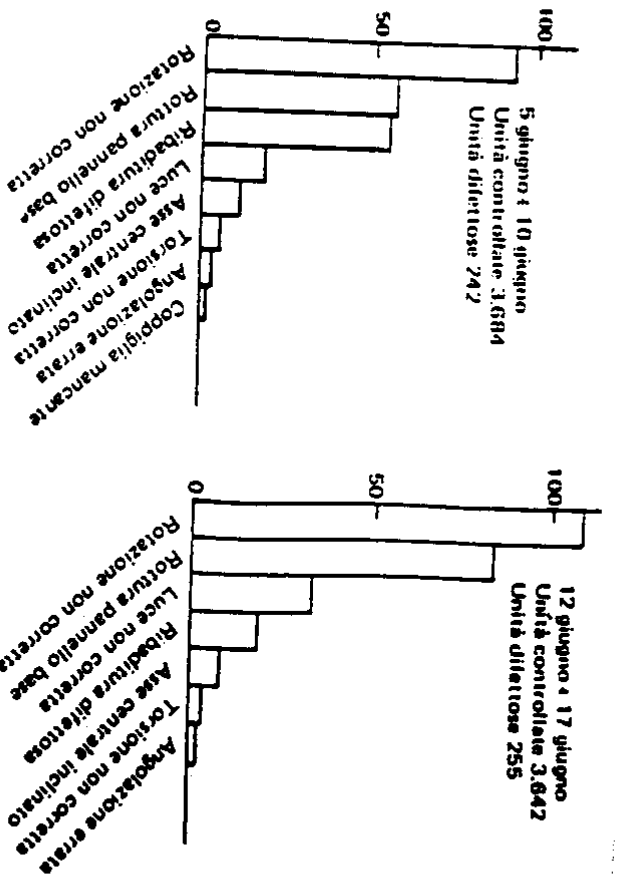
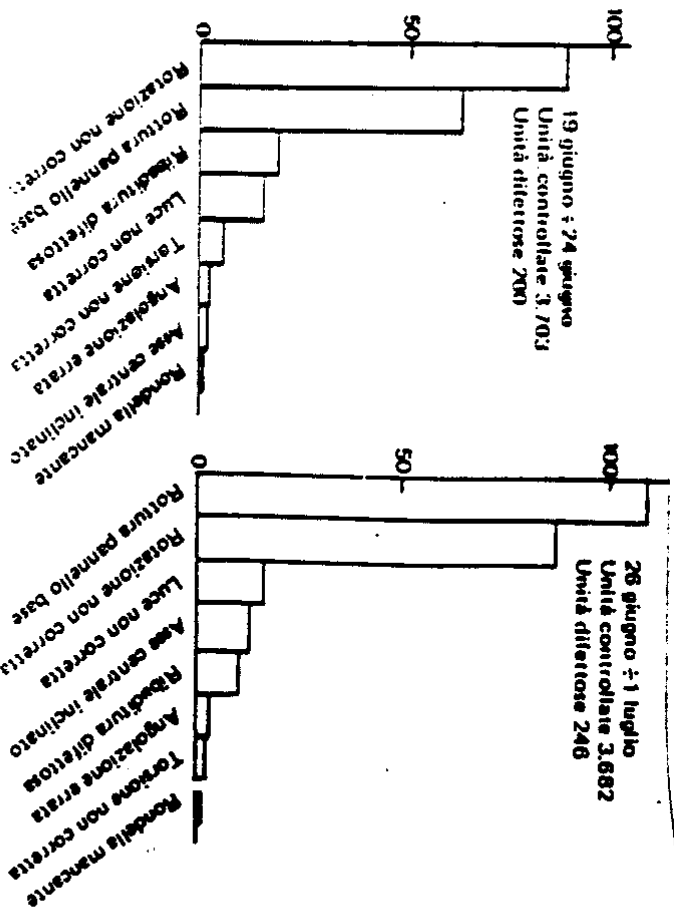


Fig. 13/18(A) - Prima settimana

Fig. 13/18(B) - Seconda settimana



19 giugno ± 24 giugno
Unità controllate 3.703
Unità difettose 200

26 giugno ± 1 luglio
Unità controllate 3.682
Unità difettose 246

5 giugno ± 10 giugno
Unità controllate 3.684
Unità difettose 242

12 giugno ± 17 giugno
Unità controllate 3.642
Unità difettose 255

Fig. 13.11

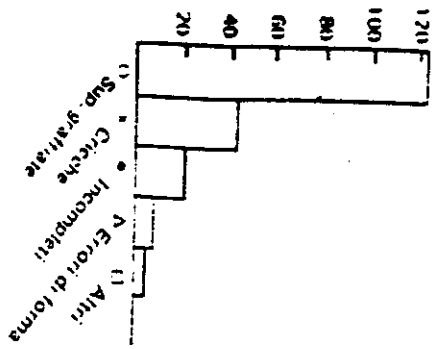


Fig. 13.12



Fig. 13.13

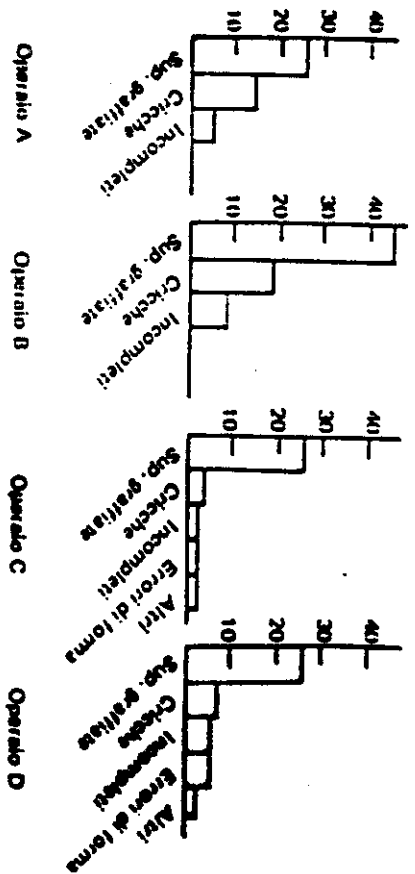
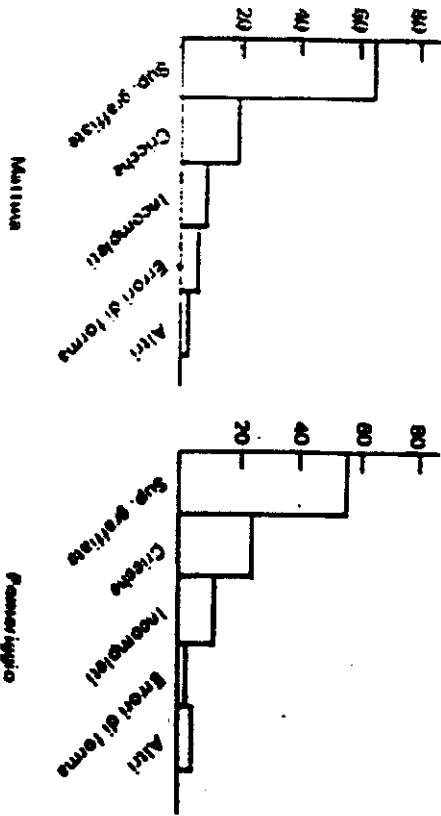


Fig. 13.14



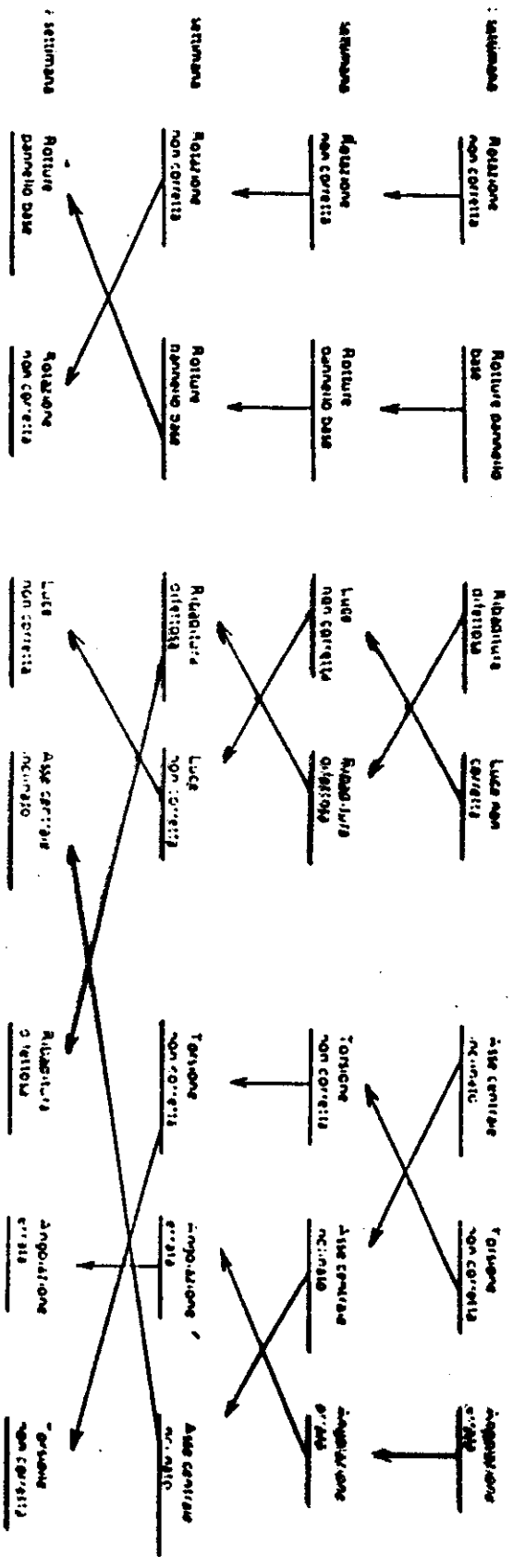
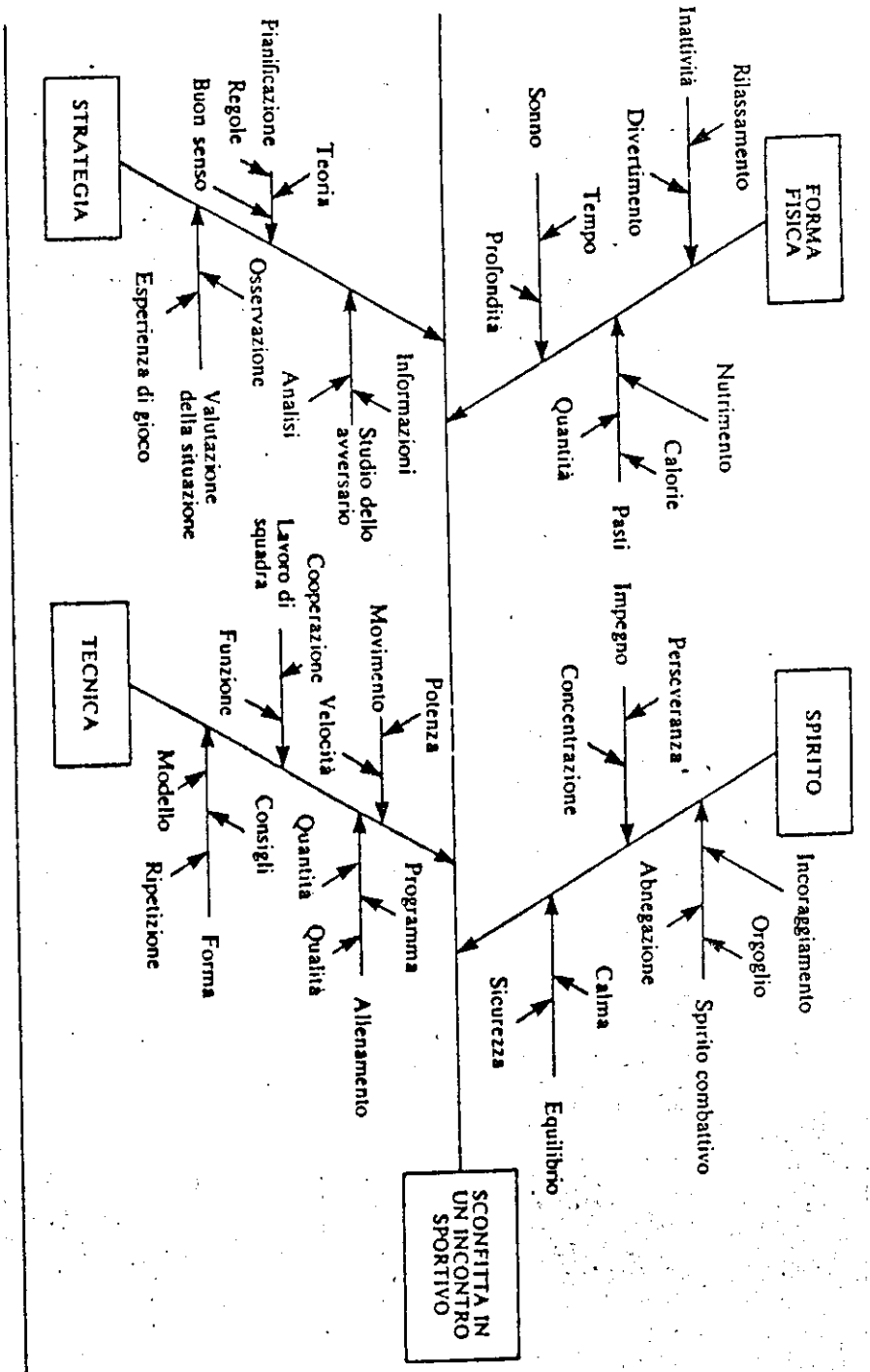


Figura 4-2 Esempio di un diagramma causa-effetto



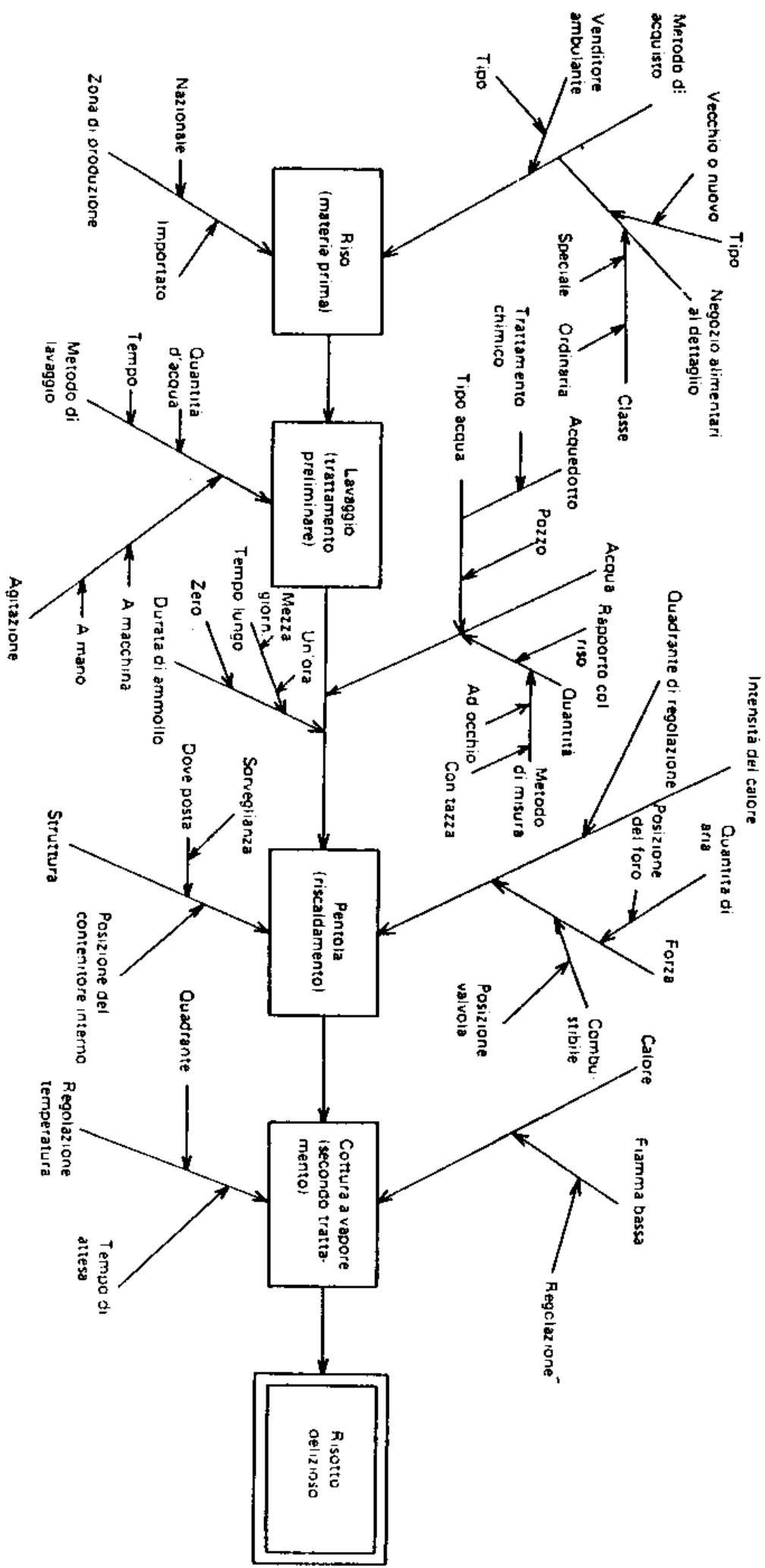


Fig. 13.3 - Diagramma del tipo per classificazione dei processi

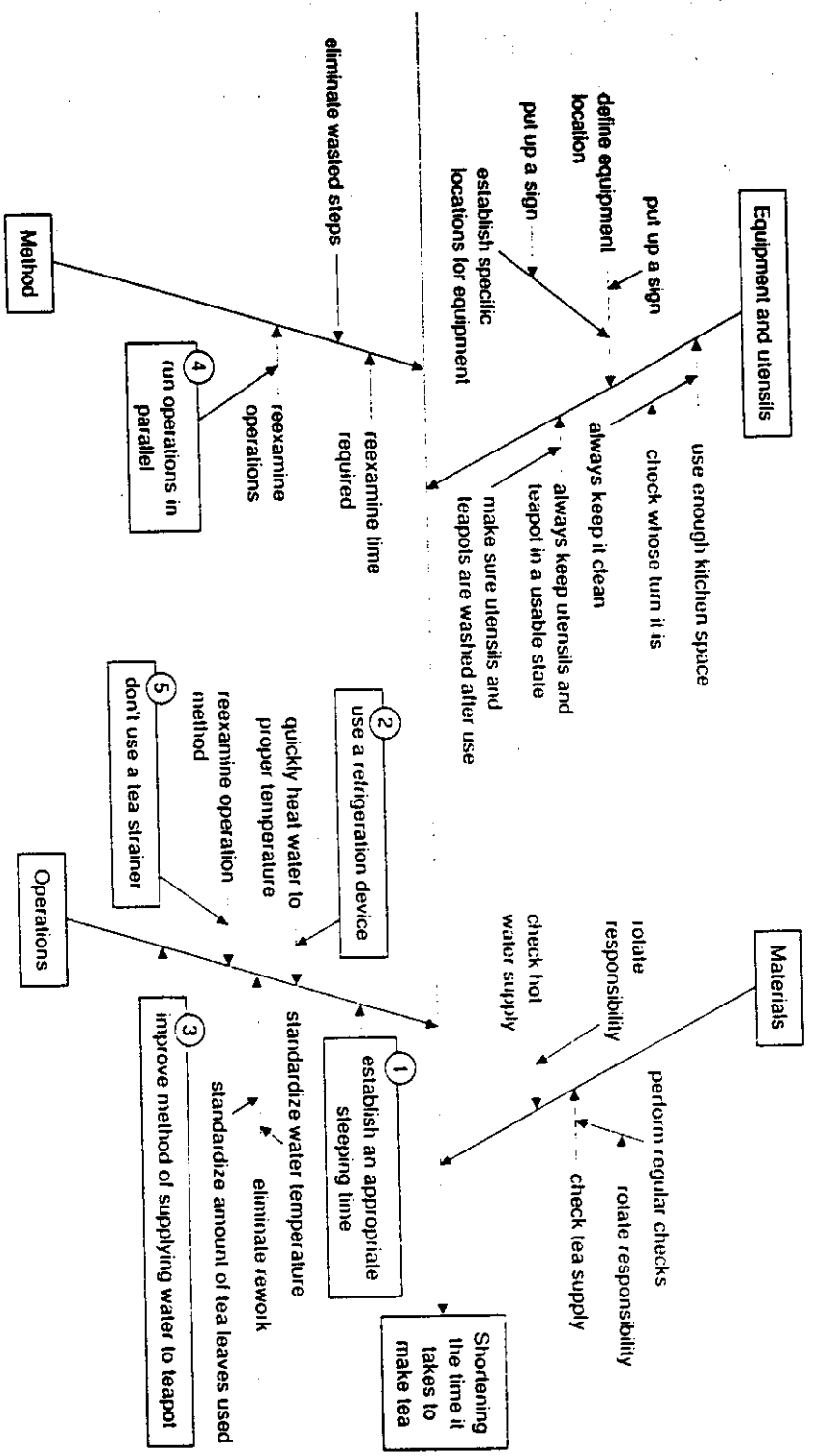


Figure 4-15. Corrective Action Research Cause-and-effect Diagram

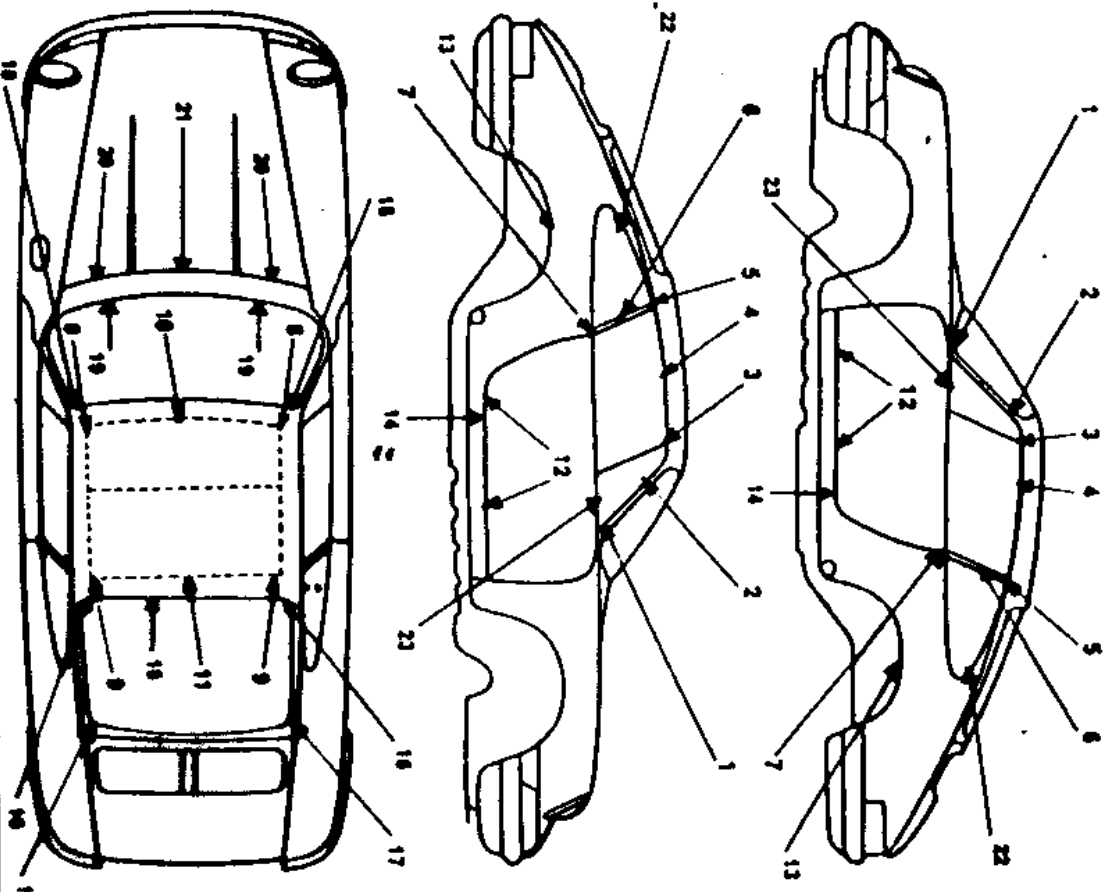
Dichtheitsprüfung Typ 911/930



PRÜFKARTE

Qualitätskontrolle

für Beregnungsprobe



Die Umkehrseite Zeit eintragen ①
 Fahrzeugtyp mit X zeichnen

Datum:

I. O.

Coupe

Coupe-8-Doch

Targa

Pt. Nr.

Pt. Nr.

| P. Nr. | Fahrgerät | 1 1 | | 1 2 | | Ursache | W | W | Werkst. Prüfer |
|--------|------------------------------|-------|----|-----|---|---------|---|---|----------------|
| | | 1 | 2 | 1 | 2 | | | | |
| 1 | 8235 T-Fensterahmen v u | 01-04 | 07 | | | | | | |
| 2 | 8235 T-Fensterahmen v ob | 01-06 | 07 | | | | | | |
| 3 | 8235 T-Fensterahmen h ob | 01-08 | 07 | | | | | | |
| 4 | 8470 Oberste Fensterleiste | 01-08 | 07 | | | | | | |
| 5 | 8236 Sturzfahrgewinn | 07-08 | | | | | | | |
| 6 | 8236 Dachabhangpunkt | 07-08 | | | | | | | |
| 7 | 8470 Hintere Fensterleiste | 01-07 | 07 | | | | | | |
| 8 | 8236 Sturzfahrgewinn untl | 04-08 | 07 | | | | | | |
| 9 | 8201 Dach vorne | 01-07 | 07 | | | | | | |
| 10 | 8201 Dach mitte vorne | 01-07 | 07 | | | | | | |
| 11 | 8201 Dach mitte hinten | 01-07 | 07 | | | | | | |
| 12 | 8235 Türstift | 01-07 | 07 | | | | | | |
| 13 | 8201 Radlauf hinten | 01-08 | 07 | | | | | | |
| 14 | 8252 Schweißnaht | 01-08 | 07 | | | | | | |
| 15 | 8084 Dach-Entloftung | | | | | | | | |
| 16 | 8470 Rückwandleiste C 09 | 01-07 | 07 | | | | | | |
| 17 | 8472 Rückwandleiste T 09 | 01-07 | 07 | | | | | | |
| 18 | 8470 Rückwandleiste C 04 | 01-07 | 07 | | | | | | |
| 19 | 8472 Rückwandleiste T 04 | 01-07 | 07 | | | | | | |
| 20 | 8401 Windschutzscheibe oben | 01-07 | 07 | | | | | | |
| 21 | 8401 Windschutzscheibe unten | 01-07 | 07 | | | | | | |
| 22 | 8401 Windschutzscheibe unter | 01-07 | 07 | | | | | | |
| 23 | 8416 Dachstreifen | 01-08 | 07 | | | | | | |

Bemerkungen:

Σ

FIGURE 9-12 Traveling Checklist for Automobile Production

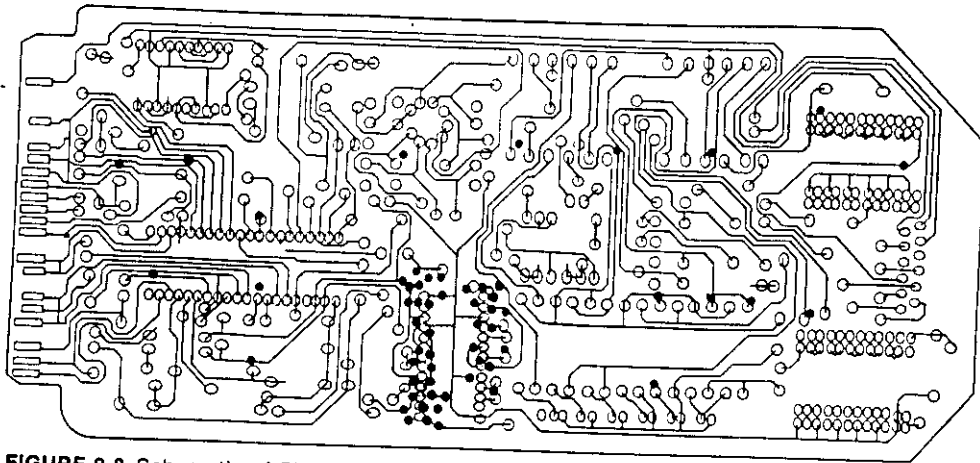


FIGURE 9-8 Schematic of Circuit Pack with Defects Plotted

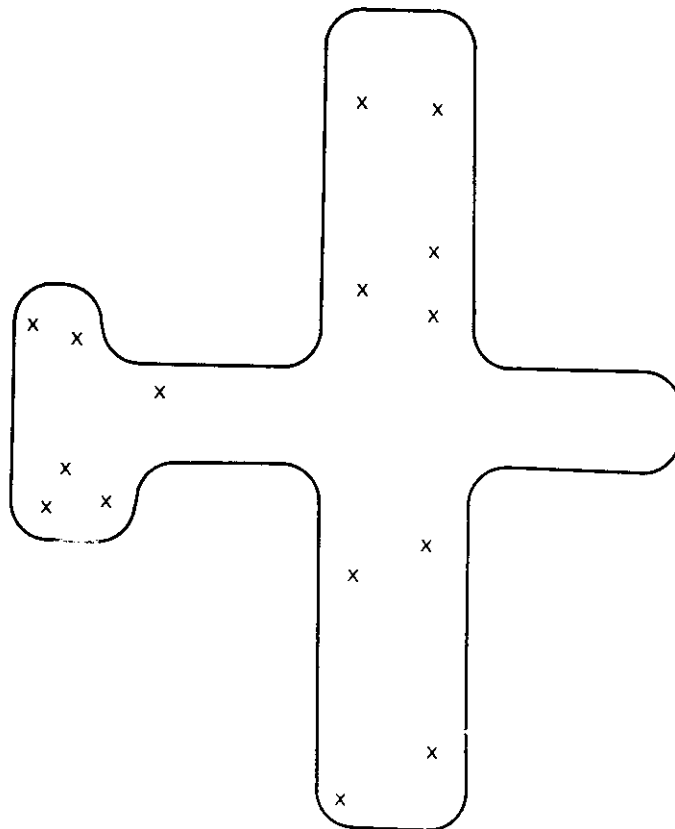


FIGURE 9-9 Location Plot of Airplane Holes

Strategie per gli approvvigionamenti.

ORGANIZZAZIONE INTERNA

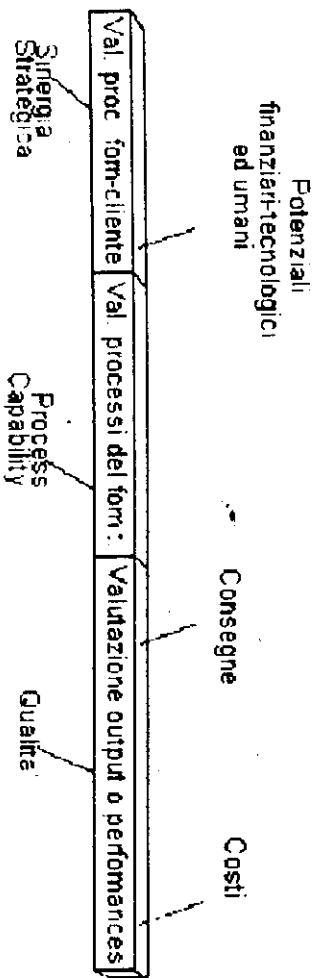
| | | Orientamento all'organizzazione ed al prodotto. | Orientamento alle persone ed ai processi. |
|--|-------------------------------|---|---|
| R A P P O R T I C O N I L M E R C A T O | Orientamento alle operazioni. | <p>Azienda funzional-tayloristica Anni '50-'60</p> <p>Mercato insaturo D>S Ambiente semplice e stabile Organizzazione: Burocrazia Economia di scala</p> <p>Predominanza al <u>MAKE</u>, non si decentrano le attività critiche, rapporti di <u>B.P.</u> con i fornitori, <u>non si assicurano acquisti futuri</u>, predominanza data al <u>prezzo</u>, i fornitori sono messi in <u>concorrenza</u>, prima qualificazione statica e <u>prerequisiti minimi</u> di qualità e servizi. QC con collaudo Passa-non passa con rivalse sui fornitori sui prodotti fuori specifiche, Ruolo dell'approvvigionatore ridotto in termini di partecipazione strategica: <u>minimizzare il Budget annuale</u>.</p> | <p>Azienda giapponese Anni '70-'80</p> <p>Mercato saturo S>D già esistente Ambiente complesso e dinamico Organizzazione: Adhocrazia Customer Satisfaction</p> <p>Predominanza data al <u>BUY</u> ma con pochi fornitori per classe merceologica. Costante riferimento alla <u>Matrice di Kraljic</u> con valutazione dell'importanza e della reperibilità degli approvvigionamenti. Rilevo dato al <u>prezzo</u>, al <u>servizio</u>, alla <u>qualità</u>. Ottica di <u>L.P.</u> o <u>B.P.</u> in relazione alle classi merceologiche. Ruolo dell'approvvig: gestione e crescita guidata dei fornitori; partecipazione strategica per il <u>controllo del costo</u> di M.P. e L.P. e non solo di B.P.</p> |
| | Orientamento al mercato. | <p>Azienda marketing oriented Anni '60-'70</p> <p>Mercato saturo S>D Ambiente semplice e stabile Organizzazione: Soluz. Divisionale Diversificazione Produttiva</p> <p>Predominanza data al <u>BUY</u> per mantenere la flessibilità. Rapporti di <u>B.P.</u> con i fornitori messi in <u>concorrenza</u>, <u>rapporti di forza</u>. Ruolo dell'approvvigionatore ridotto in termini di partecipazione strategica: gestione delle scorte, sconti, ottimizzazione del Budget annuale.</p> | <p>Azienda World class Anni '80-'90</p> <p>Mercato maturo S>D internazionale Ambiente complesso e dinamico Organizzazione: Adhocrazia Leadership di costo+Differenziazione dei prodotti. Customer Satisfaction.</p> <p>Come sopra + Rilevo dato al <u>prezzo</u>, al <u>servizio</u>, alla <u>qualità</u>, alla <u>Process Capability</u>, ai <u>potenziali finanziari-tecnologici</u>, alla <u>sinergia strategica</u> dei fornitori. La funzione Acquisti non è valutata solo in base ai prezzi spuntati ai fornitori ma sul <u>costo totale</u>.</p> |

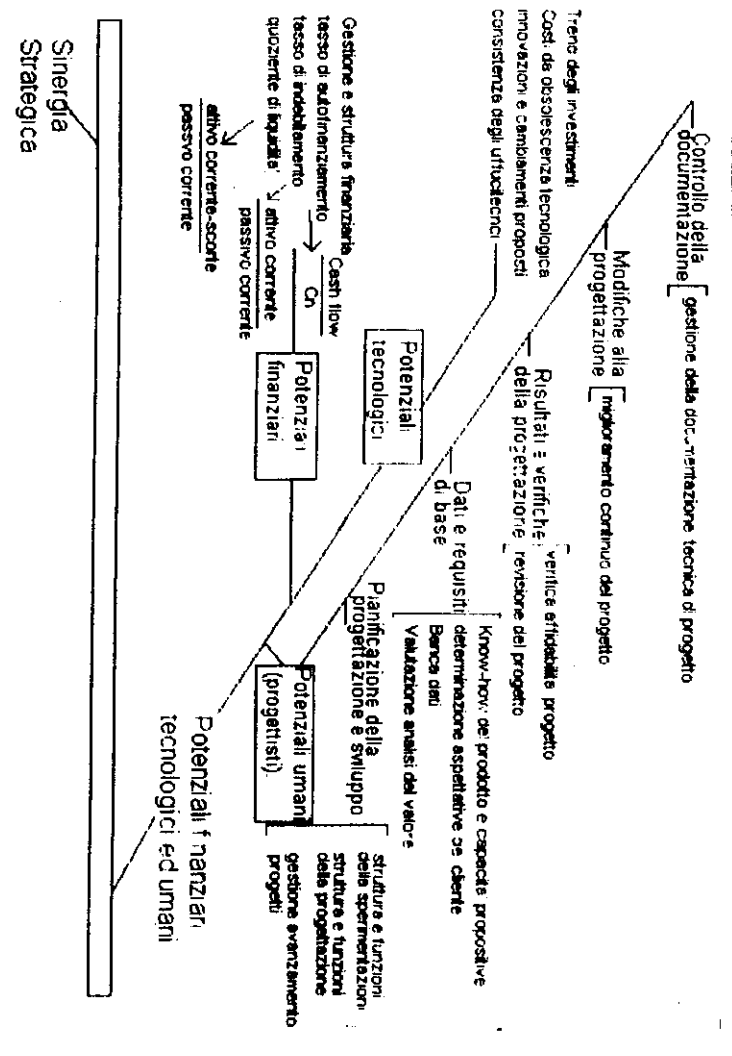
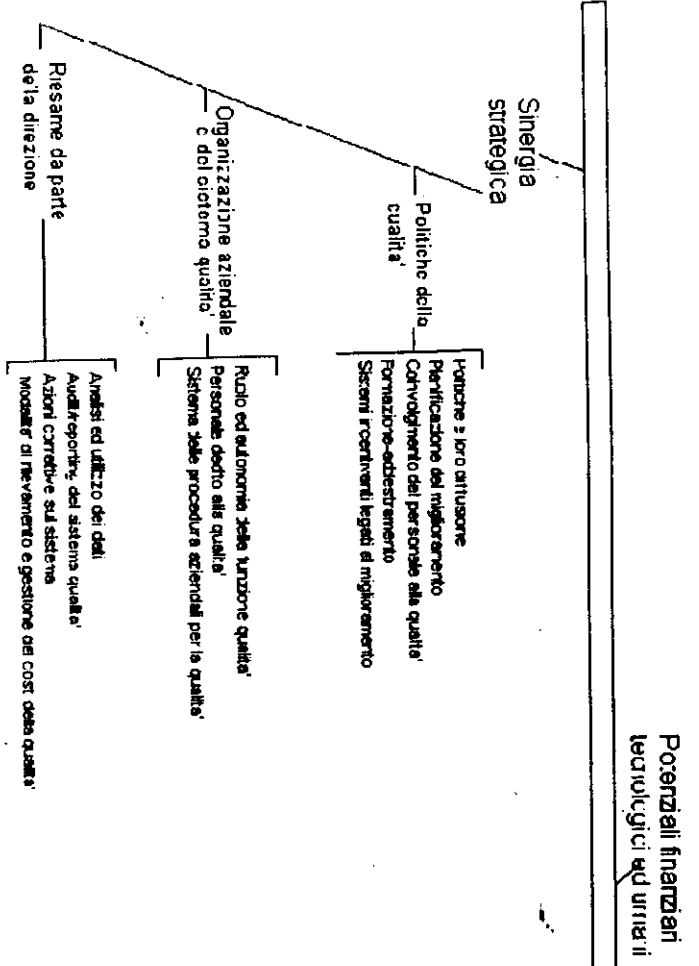
REPERIBILITA'

ALTA REPERIBILITA'

BASSA REPERIBILITA'

| | | ALTA REPERIBILITA' | BASSA REPERIBILITA' |
|--|---------------------------------------|--|---|
| I M P O R T A N Z A | A L T A I M P. | <p>ENFASI SULLA COMPETITIVITA'</p> <p><u>Orizzonte temporale</u>: 12-14 mesi <u>Decisioni</u>: interne all'area approvvig. <u>Compiti principali</u>: Ricerca prodotti sostitutivi, selezione dei fornitori, riduzione delle scorte <u>Obiettivi</u>: ottimizzazione flussi materiali</p> | <p>ENFASI SULL'INTEGRAZIONE</p> <p><u>Orizzonte temporale</u>: Lungo periodo <u>Decisioni</u>: Vertice strategico + Acquisti <u>Compiti principali</u>: Creazioni rapporti di lungo periodo, attivazione di forme di controllo <u>Obiettivi</u>: disponibilità nel lungo periodo</p> |
| | B A S S A I M P. | <p>NESSUNA ENFASI</p> <p><u>Orizzonte temporale</u>: ridotto <u>Decisioni</u>: decentrate <u>Compiti principali</u>: standardizzazione materiali, ottimizzazione dei volumi, uso del potere contrattuale <u>Obiettivi</u>: efficienza funzionale</p> | <p>ENFASI SULLA STABILITA'</p> <p><u>Orizzonte temporale</u>: variabile <u>Decisioni</u>: decentrate ma coordinate <u>Compiti principali</u>: controllo dei tempi, assicurazione delle giacenze <u>Obiettivi</u>: assicurare il flusso</p> |





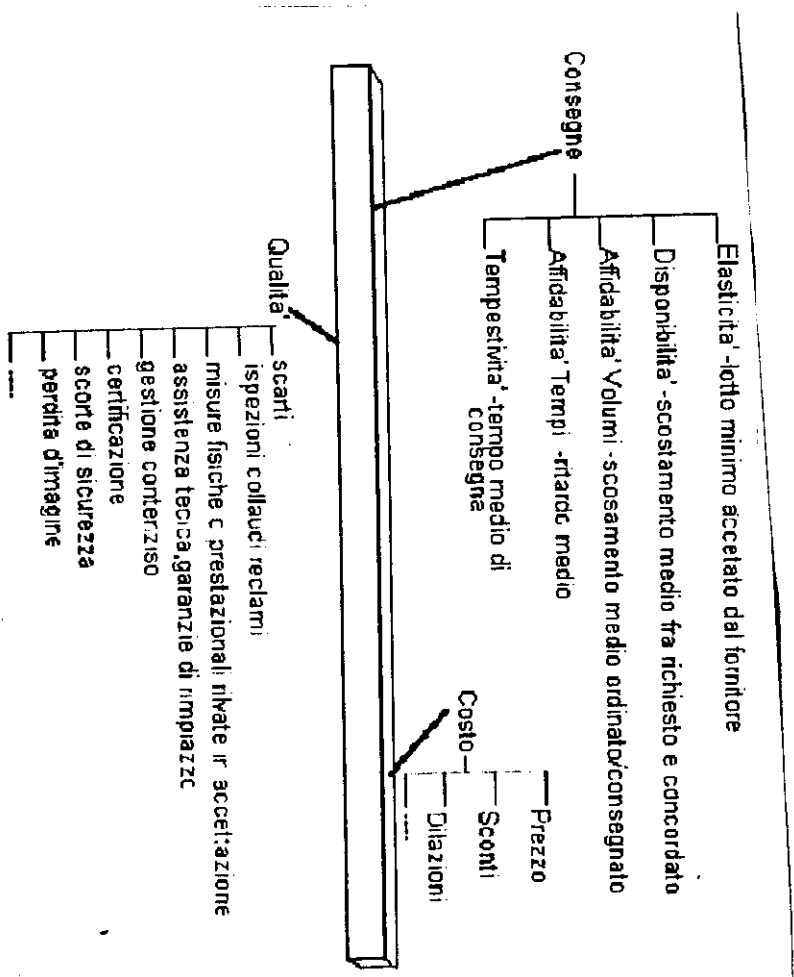
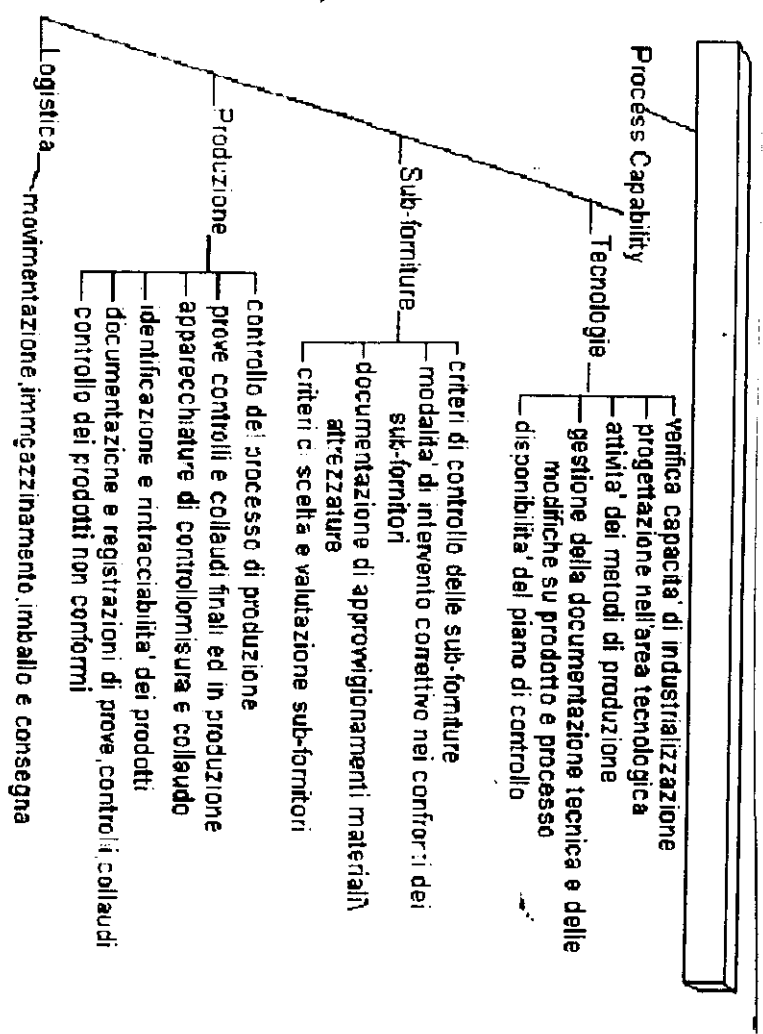


Table 5-1. Effective QC Methods for the Steps of Problem Solving

| Major QC Methods | | The 7 QC Tools | | | | | | | The 7 New QC Tools | | | | | | |
|-----------------------|--------------------|--|---------------|--------------|------------|------------------|----------------|--------|-------------------------|--------------------------|---------------------------|-----------------------|----------------------|-------------|--------------------|
| | | Cause and effect diagrams | Pareto charts | Check sheets | Histograms | Scatter diagrams | Control charts | Graphs | Affinity diagram method | Relations diagram method | Systematic diagram method | Matrix diagram method | Arrow diagram method | PDPC method | Matrix data method |
| Problem-solving Steps | Plan | 1. Understanding problem areas | ⊙ | ⊙ | ○ | ○ | | ⊙ | ⊙ | ○ | ○ | | | | |
| | | 2. Selecting the theme | | ⊙ | | | | | ⊙ | ⊙ | ⊙ | | | | |
| | | 3. Forming the support group | | | | | | | ○ | | | ○ | | | |
| | | 4. Creating the activity plan | | | | | | | ⊙ | | | ○ | ⊙ | ○ | |
| | | 5. Understanding current circumstances | ○ | ○ | ⊙ | ⊙ | ⊙ | ⊙ | ⊙ | ⊙ | ⊙ | ○ | ⊙ | | ○ |
| | | 6. Establishing objectives | | ○ | ○ | ○ | | | ⊙ | | | ○ | | | |
| | | 7. Analyzing causes | ⊙ | ⊙ | ⊙ | ⊙ | ⊙ | ⊙ | ⊙ | | ○ | ○ | | | ○ |
| | | 8. Researching the improvement plans | ⊙ | | | | | | | ⊙ | ○ | ⊙ | ⊙ | | |
| | Do (execution) | 9. Planning the execution of the improvement plans | | | | | | | | | | | | ⊙ | ⊙ |
| | | 10. Executing the improvement plans | | | | | | | ○ | | | | ○ | ○ | |
| | Check (evaluation) | 11. Verifying improvement results | | ⊙ | ⊙ | ⊙ | ○ | ⊙ | ⊙ | | | | | | ○ |
| | | 12. Reviewing the activities | | | | | | | | | | | | | |
| | Action | 13. Standardization | | | ⊙ | | | | | | ○ | ⊙ | | | |
| | | 14. Establishing full control | | | ⊙ | | | | ⊙ | ○ | | | | | |
| | | 15. Topics for the future | ○ | ○ | | | | | ○ | ⊙ | | ○ | | | ○ |

a: Performing factorial experiments and experiments using a table of orthogonals
 b: Including discriminant analysis, principal component analysis, factor analysis, cluster analysis, and quantification methods

| | Statistical Methods | | | | | | | | | | | QC-related methods | | | References |
|----|---------------------|----------------------------------|----------------------------|----------------------------------|-----------------|-----------|------------------|-------------------------|----------------------|---------------------|----------------|--------------------|---|---|---|
| | Testing/estimation | Design of experiments method (a) | Regression analysis method | Multivariate analysis method (b) | Sampling method | FME-A/FTA | Weibull analysis | Reliability engineering | Sampling inspections | Sensory inspections | Quality charts | I | V | O | |
| 1 | | | | | | | | ○ | | ○ | ○ | ○ | | | |
| 2 | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | ○ | | | Bar charts |
| 5 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | BS method, CBS method, brainstorming method, cross method |
| 6 | | | | | | | | | | ○ | | | | | |
| 7 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | BS method, enumerated weakness method, brainstorming method |
| 8 | | ○ | ○ | ○ | | ○ | ○ | | | ○ | ○ | ○ | ○ | ○ | BS method, enumerated desire method, Gordon method, enumerated weaknesses method, NM method |
| 9 | | | | | | | | | | | | | | | ○ |
| 10 | | | | | | | | | | | | | | | ○ |
| 11 | ○ | ○ | ○ | ○ | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| 12 | | | | | | | | | | | | | | | |
| 13 | | | | | ○ | | | | | ○ | | | | | |
| 14 | | | | | ○ | | | ○ | ○ | | | | | | |
| 15 | | | | | | | | | | | | | | | |

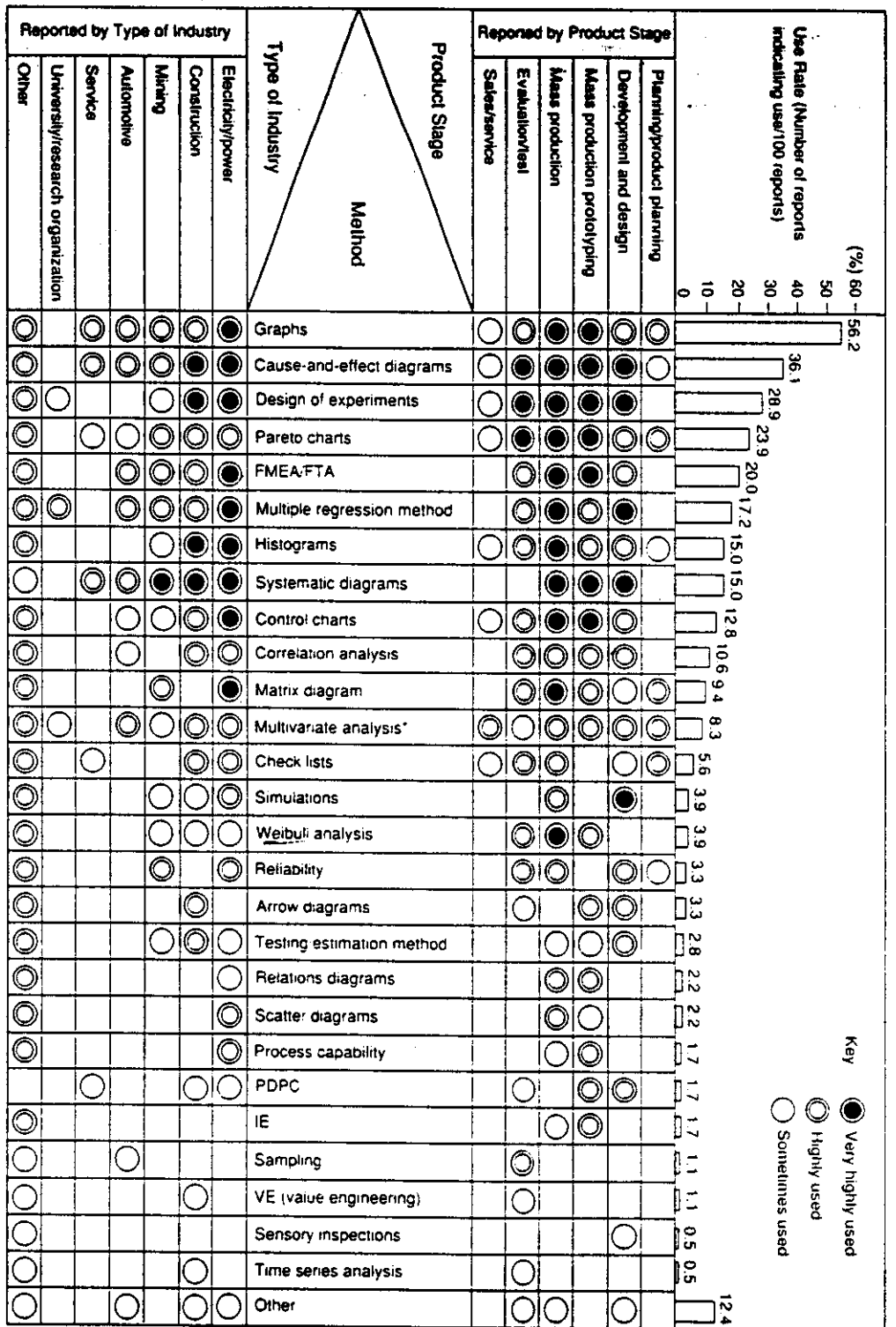
References

⊙ : Very effective

○ : Effective

Table 5-2. Effective QC Techniques for Purchasing Functions

| Category | | Responsible Department | | | | | | The 7 QC Tools | | | | | | | The 7 New QC Tools | | | | | | | | |
|--------------------------------|-----------------------|---|-------------|-------------------|------------|------------|---------------------------|----------------|---------------------------|---------------|--------------|------------|------------------|----------------|--------------------|-------------------------|--------------------------|---------------------------|-----------------------|----------------------|-------------|--------------------|--|
| | | Sales | Engineering | Quality assurance | Purchasing | Production | Manufacturing engineering | Other | Cause and effect diagrams | Pareto charts | Check sheets | Histograms | Scatter diagrams | Control charts | Graphs | Affinity diagram method | Relations diagram method | Systematic diagram method | Matrix diagram method | Arrow diagram method | PDPC method | Matrix data method | |
| Fundamental Functions | Ensuring sources | Market research | (○) | | | | | | (○) | (⊙) | (⊙) | | | | (⊙) | | | | | | | | |
| | | New industry development contracts | | | | | | | | | | | | | | | | | | | | | |
| | | Researching and improving purchasing requirements | | (○) | (○) | (○) | (○) | | | | | | | | | | | | | | | | |
| | | Selecting and contracting with suppliers | | (○) | (○) | (○) | (○) | | | (●) | (●) | (○) | (●) | | (⊙) | | (⊙) | (⊙) | (○) | (○) | (○) | | |
| | | Providing leadership and training to existing suppliers | | | (○) | (○) | (○) | | | (⊙) | (⊙) | (⊙) | (⊙) | | (⊙) | (⊙) | (⊙) | (●) | (●) | (○) | (○) | | |
| | | | | | | | | | | | | | | | | | | | | | | | |
| Purchasing plan | Purchasing plan | Establishing standard cost units | | | | | | | (●) | (●) | | | | | (●) | | | | | | | | |
| | | Cost reduction planning | | | | | | | (●) | (●) | (●) | | | | (●) | | | | | | | | |
| | | Promoting part standardization | | (○) | (○) | (○) | (○) | | | | | | | | | | | | | | | | |
| | | Establishing lead times | | | | | | | | | | | | | | | | | | | | | |
| | | Establishing purchase quantities and inventory quantities | | | | | | | | (●) | (●) | (⊙) | (○) | | | (●) | | | | | | | |
| | | Determining suppliers | | | | | | | | (○) | (○) | (○) | (○) | | | | | | | | | | |
| | | Planning order volumes and deliveries | | | | | | | | (●) | (●) | (●) | (●) | | (⊙) | (⊙) | | | | | | | |
| | | Planning tooling equipment leasing plans | | | | | | | | (○) | (○) | (○) | (○) | | | | | | | | | | |
| Purchasing | Purchasing | Establish purchasing requirements | | | | | | | (○) | (○) | (○) | (○) | | | | | | | | | | | |
| | | Supply warehousing plan | | | | | | | (⊙) | (⊙) | (⊙) | (⊙) | | | | | | | | | | | |
| | | Determining delivery schedules | | | | | | | (●) | (●) | (⊙) | (○) | | | (⊙) | | | | | | | | |
| | | Negotiating unit price reductions | | | | | | | (●) | (●) | (⊙) | (○) | | | (●) | | | | | | | | |
| | | Progress control | | | | | | | (●) | (●) | (⊙) | (○) | | | (●) | | | | | | | | |
| | | Correcting quality delivery problems | | (○) | (○) | (○) | (○) | | (●) | (●) | (●) | (●) | | (⊙) | (●) | (●) | (●) | (●) | (●) | (○) | (○) | | |
| | | Audit tool mfg. processes materials | | (○) | (○) | (○) | (○) | | (●) | (●) | (⊙) | (○) | | | (●) | | | | | | | | |
| | | Acceptance | | | | | | | (●) | (⊙) | (⊙) | (○) | | | (●) | | | | | | | | |
| Supply | Supply | Research/establish transport method | | | | | | | (○) | | | | | | | | | | | | | | |
| | | Warehouse inventory control | | | | | | | (●) | (●) | | | | | (●) | | | | | | | | |
| | | Distribution cost control | | | | | | | | | | | | | | | | | | | | | |
| Inventory control | Inventory control | Research/establish storage method | | | | | | | (○) | | | | | | | | | | | | | | |
| | | Physical maintenance | | | | | | | (●) | (●) | (●) | (●) | | | (⊙) | (●) | | | | | | | |
| | | Understand/dispose of dead stock | | | | | | | (○) | (○) | (○) | (○) | | | | | | | | | | | |
| Purchasing management | Purchasing management | Management of purchasing organization | | | | | | | (●) | | | | | | | | | | | | | | |
| | | Responsibility control | | | | | | | (●) | (⊙) | (○) | | | | (○) | | | | | | | | |
| | | Purchasing control evaluation | | | | | | | (●) | (○) | (⊙) | | | | (⊙) | | | | | | | | |
| Coefficient of utilization (%) | | | | | | | | 26 | 24 | 8 | 3 | 1.4 | 2 | 22 | 0.9 | 2 | 1.8 | 0.9 | | | | | |



* primary component analysis, cluster analysis, quantification methods

Figure 5-1. The Frequency of Use of QC Methods as Seen in Quality Control Conference Presentations

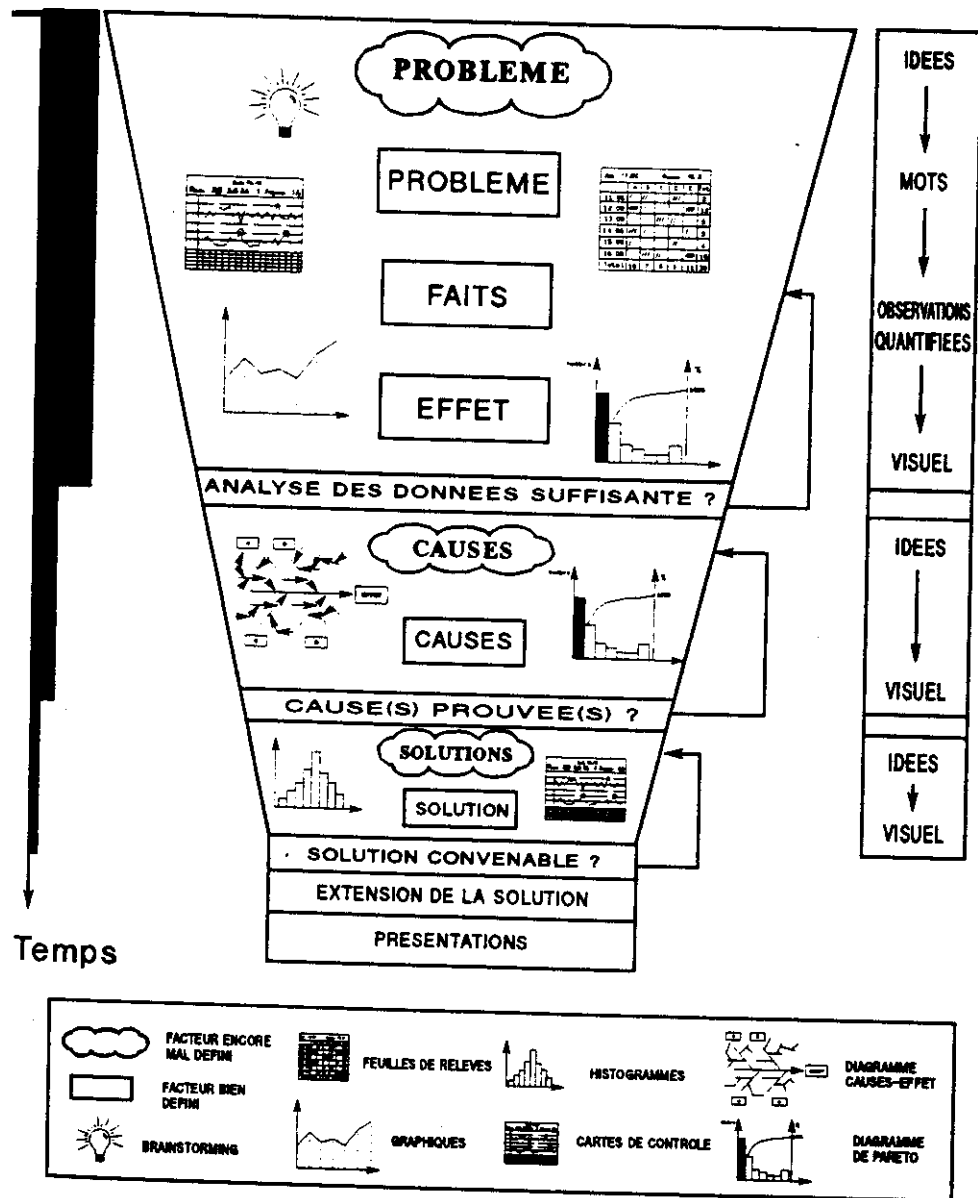


Figure 5.1 Une représentation du « pas à pas » : l'entonnoir.

①