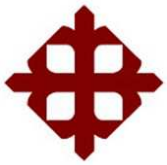

CATHOLIC UNIVERSITY
OF SANTIAGO DE GUAYAQUIL

FACULTY OF ARTS AND HUMANITIES
SCHOOL OF ENGLISH LANGUAGE

TITLE OF PAPER

Analysis of the use of MT among professional translators and translator trainees of the School of English Language at UCSG

AUTHOR:

SUSANA MARÍA CASTRO EGAS

SUBMITTED IN FULFILLMENT OF THE REQUIREMENT FOR OBTAINING THE BACHELOR DEGREE IN ENGLISH LANGUAGE WITH A MINOR IN TRANSLATION

PROJECT ADVISOR

SARA INES RIVADENEIRA ENRÍQUEZ

GUAYAQUIL, ECUADOR

2018

CATHOLIC UNIVERSITY
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CERTIFICATION

We certify that this research project was presented by **SUSANA MARÍA CASTRO EGAS** as a partial fulfillment of the requirements for the **Bachelor Degree in English Language with a Minor in Translation.**

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Guayaquil, on the 17th **day of September of** 2018

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ACKNOWLEDGEMENTS

Mrs. Mariela Vasquez and Mrs. Sara Rivadeneiera both assisted me through this project. Mr. Luigi de Angeli corrected and validated my data gathering instrument which allow me to get the results of the project. My friends and classmates with whom through the years, I've been able to talk and discuss a large variety of topics, giving me the knowledge and development to carry out my dissertation.

DEDICATION

To my mom, who support me all though the University years.

To my brother Santi who put no pressure on me and also support me and make sure I didn’t get distracted in the last stages.

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ABSTRACT

This project explains the concept of Machine Translation and contrasts it with similar concepts. It provides details regarding the different types of machine translation, their origins and development through time and real-life use among translators as part of their translation processes. Different types of editing are presented, processes are defined and matched with the correspondent type of translation process. Further research was conducted to determine the most popular machine translation software among translation professionals and students, the frequency of use, the fields in which the use of MT is more commonplace, the purpose of using it, and the benefits of working with the software compared to full human translation processes. This study also provides a comparative evaluation of a product rendered through machine translation analyzing the quality of such product. It identifies the type of errors that most frequently occur as well as the ratings of each sentence rendered. This allowed to point out the aspects that need a strong focus in the post-editing process so that the final product is enhanced and validated.

Keywords: *Machine Translation, editing, rendering, quality, software, product.*

INTRODUCCION

Machine Translation software provides a rogue translation of a document which needs human editing to obtain a high-quality product. The usefulness of MT and the corresponding product (rendering), will depend on the quality of the software used in the process. To apply MT process a translator has to be able to carry out the necessary improvements through editing and proofreading.

On the other hand, there are some MT platforms and tools that have become more popular than others among professional translators and translator trainees. The most well-known are Google translate, Linguee (alignment tool), Microsoft translator, Babylon, among others; each of these tools will posit different challenges when carrying out basic and stylistic checks and the final proofreading.

It is also of importance to determine the fields in which translators tend to apply MT aid since MT can be more helpful when dealing with technical terminology; however, it will definitely not do much in the literary field.

Analysis of an MT software, identification of errors, and quality assessment are necessary though not very often attempted in the field of automated translation process. It is also essential to define and differentiate MT and other different electronic translating tools, and ponder upon the key role of editing processes.

Accurate effectiveness and quality assessment can be performed by applying comparative analysis in an ST sample of a specialized field, using a document that has previously been transferred through human translation processes, submitting it to MT software. The sentences rendered can then be paired to identify where and how the automatic rendering must be improved or changed somehow.

1. JUSTIFICATION

This research is aimed to help professional translators to increase their knowledge on how to make better use of machine translation in their work. This work will help to identify the key points to be taken into consideration during the post-editing process of documents rendered through machine translation, contributing to the improvement of quality of the end results. A quick translation draft will help translators reduce the amount of time devoted to rendering a first draft of a translated document. More detailed knowledge on areas where machine translation is shows higher effectiveness and accuracy will help translators make better use of this type of software depending on the area of translation. Therefore, they will achieve awareness of the areas that render more error-free machine translation results. At the same time, translators will gain acquaintance of the best machine translation software in the market for professional translators which will give them wider opportunities to learn about their specific uses and limitations.

Translators would benefit by acquiring knowledge on the important linguistic aspects to consider when post-editing MT translated texts. This knowledge would allow them to apply translation techniques to their work accordingly, whether at a higher or lower percentage depending on the quality of the machine translation software rendering. Professional translators may have an increase amount of workload, as translation projects are extensive and demanding in time.

2. PROBLEM STATEMENT

Translation is a multi-stage process that requires linguistic knowledge, in-depth research, as well as constant editing and proofreading of the document. One major problem in translation are due-dates, i.e. completing and presenting the work on time. However, today's technology has provided the field of translation with tools for professional as well as non-professional and trainee translators that offer time-saving processes and short-cutting stages (Pym, Perekrestenko, & Starink, 2006).

The problem arises when translators need to make correct use of these tools and so as to benefit out of them as much as possible. Although machine translation accuracy has improve over the last 20 years, there is still justified mistrust on automated translation rendering leading to discouragement on their use (Soricut & Echihabi, 2010). Rather than learning how to use and take disadvantage of MT software and tools such as concordancers and alignment platforms, people over-generalize their errors and undervalue all aid that could be provided by promising MT software.

Mistakes such as over trusting MT renderings will bear a negative effect on the quality of the final document thus being detrimental to the translator's career prospects. Those who do spend high amounts of time in post editing processes may as well use up all the time apparently saved when they decided to apply Machine Translation methods.

Given the previously mentioned considerations, the topic of Machine Translation tool for translators deserves to be researched with a focus on the keys of the post editing process.

3. RESEARCH QUESTION

To what extent do professional translators and translator trainees use Machine Translation as part of their translating process?

When do translators believe the aid of Machine Translation is necessary?

Which Machine Translation Software do professional translators and translator trainees use?

What are the most frequent types of errors Machine Translation Software generates?

4. TOPIC:

Analysis of the use of MT among professional translators and translator trainees of the School of English Language at UCSG.

5. OBJECTIVES

5.1 GENERAL OBJECTIVE

To analyze the use of Machine Translation Software among professional translators and translator trainees to identify where they need to focus their attention through post-editing by finding and classifying the types of errors made by the machine.

5.2 SPECIFIC OBJECTIVES

- To identify the different Machine Translation Software used by professional translators and translator trainees.
- To explore the type of use given to Machine Translation Software by professional translators and translator trainees.

- To describe the situations in which professional translators and translator trainees use the aid of Machine Translation.
- To classify the types of error made by the most popular Machine Translation Software.
- To identify the key linguistic factors which need post-editing in a Machine Translation rendering.

6. LITERATURE REVIEW

6.1 Background

The origins of Machine Translation date back to George Artsrouni and Petr Smirnov-Troyanskii in 1933 (Hutchins, 1995), who created a device that could find the equivalent of any word into another language through three stages: pre-editing, machine translation, and post-editing. Weaver, in 1949, gave four proposals to improve machine translation: multiple meaning, language formed by logical elements, the use of cryptography (de-codifying a code), and Universal Linguistic (common features among all languages).

From 1956 to 1966, for political reasons, most of the research on machine translation focused on Russian to English and English to Russian systems in US and Soviet Union. The MIT participated on MT research in 1951 where Bar Hillel suggested a semantic approach and specialized dictionaries, while Yngve suggested a syntactical approach and a three sub-stage process in which “syntactic transfer” was added between the decoding and encoding process. (W. John Hutchins, 1995)

6.2 Machine Translation definitions

To start, it is important to define machine translation (MT) which the “EAMT, European Association for Machine Translation, (2018) defines as: “Application of computers to the task of translating texts from one natural language to another […] today a reasonable number of systems are available which, if not perfect, are of sufficient quality to be useful in a number of specific domains.”

MT is also defined by Hutchins’ Alpac report (Poibeau, 2017, p. 79) “Machine translation means going by algorithm from machine-readable source text to useful target text, without recourse to human translation or editing”.

Balkan (Baker & Malmkjær, 2001, p. 134) states that MT is “any system that actually performs a translation” while a machine assisted, or computer-assisted translation (CAT) will stand for any other computerized tool that just helps in the process but does not accomplish as much.

Lehrberger and Bourbeau (S. Chan, 2004) classifies machine translation into three branches: Machine-aided Human Translation (MAHT), Human-aided Machine Translation (HAMT), and Fully Automatic Machine Translation (FAMT).

6.3 Machine-aided Human Translation

This type of translation is done by a human with minimal aid from the machine. The translator remains responsible for executing the translation but the machine acts as a tool as however the translator deems necessary. (S. Chan, 2004).

6.3.1 Human-aided Machine Translation

John Hutchins (1999) mentions that in 1988 Leheber and Bourbeau used this term (HAMT) to refer to a human assisting the machine by filling it with information even before the translation process begins, as well as through it and after.

6.3.2 Fully Automatic Machine Translation

Bar Hillel 1971, cited by Sin-Wai Chan, (2004 p. 83) explains that “FULLY AUTOMATIC MACHINE TRANSLATION (FAMT) refers to the machine translation processing in which no human intervention is necessary between the input of the original text and the final raw machine output of the translated text. This, however, does not imply that human post-revision is eliminated.”

6.3.2.1 Statistically Machine Translation

One way in which accuracy and quality translation could be improved is by hybrid systems of statistic-based, rule-based and example-based methods combined; but this area of research is still premature and within development (W. John Hutchins, 1995). The expectations on development AI would also affect a great development on Machine Translation, and neuroscientist have already started investigating the brain activity during language use during this new century (Binder et al., 1997). It is just through the last years in which the last approach has been created and exposed, which shortens the path towards achieving AI, and has influenced a new area of research. Previously, with slight variations and mixing techniques, MT software has three different methods to

which (Hutchins & Somers, 1992) considers very important to recognize before its use, as it will affect the whole strategy.

Direct Systems

This system is quite primitive and mostly use between one pair of language only. Meaning the software used to translate an English document into German will be of no use to translate the same text into Spanish. This approach has no intermediate stages but goes directly from processing the source text into creating the target output text. It goes through a simple morphological analysis, and matching it with a look-up bilingual dictionary, as Bar-Hillēl, (1970) implemented. It mostly can be described as a word-by-word translation with slight word-order arrangement.

Interlingual Method

This method will present results which are a mix of the SL and TL. It'll be a neutral representation of both texts in the middle of both (or more) languages. It was intended to create an intermediary language between all languages, and is possible if based on Universal Grammar theory of (Chomsky, 2013); also supported by the fourth proposal of Weaver, (1949).

Transfer System

This last method gives a representation of each language separately. The product might appear as an abstract representation of the ST or an abstract representation of the TT, in phrase-structure trees. There is an intermediate stage of syntax transfer, such as suggested by (Yngve, 1960), which is called interference representation.

The last and newest machine translation approach, leaving behind statistical machine translation, is Neural Machine Translation (NMT), currently used by Google (Wu et al., 2016), with the ability to learn from the user and every input association with the output. It may have some interference of speed, for which works with a Long-Short Term Memory (LSTM), ad 8 layers interconnected to improve interference time and apply low precision arithmetic. Although, mostly quite efficient, there's some ineffectiveness with rare words, for which the

machine applies a “copy model” to reproduce the alignment model or jus mimic the rare word. Within a non-Google NMT research, Bahdanau, Cho, & Bengio, (2014, p. 1) explains a model of encoders and decoders of sentences through fixed length-vectors. “We conjecture that the use of a fixed-length vector is a bottleneck in improving the performance of this basic encoder-decoder architecture and propose to extend this by allowing a model to automatically (soft-)search for parts of a source sentence that are relevant to predicting a target word, without having to form these parts as a hard segment explicitly.”

Although pre- and post-editing used to look a pointing out weak points of the MT, “it is now well accepted that the input to most MT systems needs to be restricted if the output is to be useful without wholesale post-editing, and traditionally these restrictions have been labelled ‘sublanguage’ if they occur naturally, and ‘controlled language’ if they are artificially imposed” (Harold L. Somers, 1997, p. 6).

Frak Austermuhl, (2014) did a research which shows us Human Involvement in the different stages of the translation process. (See Fig. 1) Post-editing is a stage that will remain an important stage of the Machine Translation process until MT are perfectionated; and even then, given that many translation choices area subjective, will still be under human eye supervision in a minimal post-editing process.

Measure	Human involvement		
	before the translation process	during the translation process	after the translation process
Dictionary updating	X		
Pre-editing	X		
Controlled language	X		
Interactive mode		X	
Post-editing			X

Table 1 Timing of optimizing strategies in MT (Austermuhl, 2014)

A Syntax-based Statistical Translation Model (Knight, 2001) is a “mathematical model in which the process of human language translation is statistically modeled.” It works with parse trees of the source language as an input, in which the sentence is processed through a syntactic parser. Each node is analyzed, and through a comparison between the syntax of both languages, it may change word order, insert words at each nod, and translate. Although the use of

structural position creates a difference in languages which work with different word order such as SOV or SOV, another linguistic syntactic case is the use of case-marker particles (hence the insertion of extra words).

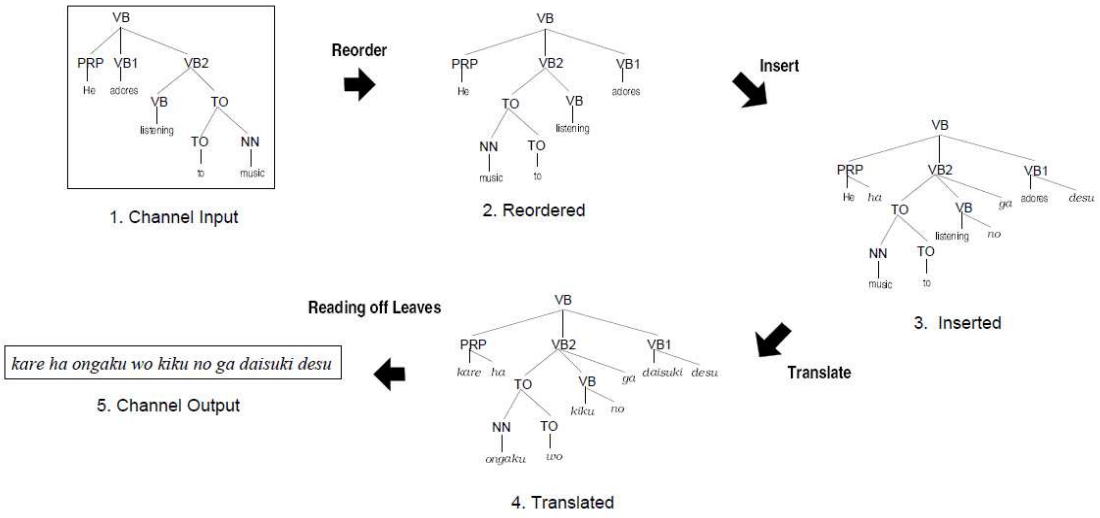

Figure 1 Channel Operations: Recorder, Insert, and Translate (Knight, 2001)

Although the statistical approach has been quite popular, Minkov, Toutanova, & Suzuki, (2007) consider a syntactical and morphological approach to enrich the language and have a more state-of-the-art approach. Morphologically complex languages are more difficult because of the variation of surface forms of a word stem. A generalization over the morphology decreases the sparsity of the data and by creating syntactic coherence in the form of morphology, it creates a substantial improvement in generating rich morphology in the target language.

A Statistical Machine Translation (SMT) mode compares to the morphological learning regain the smallest structure analyzed. While SMT generalized poor words, it does not take into consideration highly inflected words language. Finding Morphs (morpheme units) allows a reduceable size of lexicon and the ability to generalize becomes less complicated. Sami Virpioja, Jaakko J. Väyrynen, Mathias Creutz, & Markus Sadeniemi, (2007) found out that English language tends to be used as the target language and is the easiest language to translate into. This is taking place especially when the source language is a rich morphological language. For this reason, English may be biased towards SMT. Sonja Nießen & Hermann Ney, (2004) explain the advantages of a

morphological use when in use of small-sized corpora. It particularly benefits and creates improvement when one has scarce resources. Morphessors (Mathias Creutz & Krista Lagus, 2005) make use of the prefixes, stems, and suffixes to structuralize words, as well as for speech recognition for the most highly inflective languages.

Three isolated subcomponents may present difficulty in MT: I) word alignment, II) language capitalization, and III) case marker generation (Toutanova, Suzuki, & Ruopp, 2008). It is the morphological analysis who improves SMT by clustering words and capturing constraints applicable in the target language. The inclusion of morphological knowledge may give different approaches: pre-processing schemes, clitics segmentation, compounds splitting, and stemming (Lee, 2004). The segmentation is better to use with a morphologically poor target language, and pre-processing have most prominence on translating into English.

6.4 Source Text

Juliane House, (2017) says in her book *Translation: The Basic* that a source text (ST) is “the original text”. This means, the text where the translation will proceed from the start, and where a translation analysis is made (House, 2017).

6.5 Target text

Target text (TT) is a translated text, the product formed after the translation process (House, 2017). The glossary of *Thinking Spanish Translation* (Hervey, Higgins, & Haywood, 1995, p. 225) defines it as “the text proffered as a translation of the ST”. Clay Dollerup (1994,) clarifies in his book *Teaching Translation and Interpreting 2*, that there is a misconception regarding TT not been a text on its own right nor just a reproduction of the ST.

A Target Text which is the result of the application of transfer rules and translation strategies to an ST is bound to be a pseudo text. And if we assume that for each ST there is one, and only one ideal target text, we make no

provision for the creative and variety and flexibility of TT production. (Dollerup et al., 1994)

The editing process will only work on the Target Text, while the Source Text will remain untouched. At the beginning of the existence of Machine Translation, pre-editing was one of the three stages needed for the process to work. John Hutchins (1995) tells us that Reifler was the first to introduce the concept of pre-editing and post-editor within the field of machine translation in 1950. The most important function of the pre-editor was to eliminate ambiguity within the Source Text, with no need on having knowledge of the Target Language (TL), i.e. the language into which it will be translated. Mostly consisting of coding terms to a graphic supplementation, which would be understandable by the machines. This would help the machine into finding multiple meanings in both source and target text, with the help of a monolingual specialized dictionary. Reifler was mostly influenced by Weaver's first proposal on focusing on the semantic issues of translation, for which he proposed the use of a regularized language (John Hutchins, 1997).

Not much longer, the pre-editing concept was abandoned by Reifler and most authors; mainly because of Hillel's operational syntax organizing categorical grammar, post-editors in charge of eliminating ambiguity, and, as Hutchins, (2012) tell us, Yngve introduction of the syntax process which only had two stages: encoding and decoding.

Machine Translation took a step forward to the Natural Language Processing with the help of the logical-grammar phase and Halliday's systematic grammar. Generalized Phrase Structure Grammar or GPSG (Gazdar, Klein, Pullum, & Sag, 1985), which was based on Bloomfield's syntactic structure and Chomsky Immediate Constituents, was able to generate a context-free grammar. Head-driven Phrase Structure Grammar (Pollard & Sag, 1994), quite similar to the GPSP, allowed an increasingly amount of work carried out on the lexicon; quite a trend in the linguistic and computer science field (Meurers, 2001).

The Eurotra project, a machine translation program of the European Union, would then combine "lexical, logico-syntactic and semantic information in multilevel interferences at a high degree of abstractness" (Elsevier, 2005 p.

375). Even though it failed, it stimulated cross-national research in computational linguistics, with the main purpose of solving the supporting of the enormous amount of data gathering. By this time, corpora became a valuable tool which starting with probabilistic approaches, it went on to a model-based processing (Zampolli, Calzolari, & Palmer, 1994 cited in Elsevier, 2005).

6.6 Corpus

Sin-Wai Chan, (2004) describes a corpus as an assemblage of data, whether verbal or written, which works as a tool to linguistic analysis, dictionary making, or machine translation. They may be electronic, transcript, scanned or keyboarded material. This may help to identify the most frequent meaning a polysemy word, list of relevant word in dictionary compilation, frequencies in entry choices, finding real-life examples, and identifying collocations. Nowadays, there are numerous studies of corpus linguistics, such as Tony McEnery & Andrew Hardie, (2011), which concentrate on the procedures and methods for studying a language in which the theory of language is redefined; and the development of large-sized corpora and machines to support them.

Federico Zanettin, (2002) defines a Translation Memory (TM) as data collection aiding the translator with previous fragmented translations so that a term can match the whole segment and are a type of parallel corpus. This provides concordance through the text through pre-existing specific patterns or specific already translated terms. Sommer (2010) explains how TM could work either as input or output. They are an input for the translation process, but avertedly, the TM repository can be built by each sentence translated going to the database.

The increase of corpus-based approaches were mainly based on statistic-based approaches, which minimized the linguistic research in machine translation (Elsevier, 2005), and was accepted with the positive results of IBM's Candid System in 1992 (Adam L. Berger, Vincent J. Della Pietra, & Stephen A. Della Pietra, 1996). Until today, statistical machine translation dominated most research groups and development. It finds a correlation between the source language and the target language, which with time, keeps increasing the range of language pairs to which it is applied; including Aachen and Southern California and Google(W. John Hutchins, 1995).

6.7 Editing

6.7.1 Post Editing

The Draft of European Standard for Translation Services at the “EAMT” (2018) refers to the term post editing in translation as the review and correction of the text produced by any MT or CAT so that it fits the grammar, spelling and punctuation rules and meanings of the target language (Özlem Temizöz, 2013).

6.7.2 Translation Editing

Cunningham said in 1971 that translation editing was to “fine-tune the text and make it fit its stated aim. Editorial tasks include (1) filtering out ‘false friends’, (2) screening for correct grammar, idiom, and spelling; (3) keeping the argument and logic of the source text (4) using consistent and correct terminology (5) apply house-styles to the translation”.(S. Chan, 2004, p. 248)

6.7.3 Full Post Editing

The Dictionary of Translation Technology of Sin-Wai (S. Chan, 2004, p. 82) makes a reference of Allen’s definition of full post editing in 2004 when said it was “the attempt to cover raw machine translation output into a product comparable to human translation”.

The post-editing process will always take place within the Target Language which might or might not be the translator first language. Translation has been more commonly done from a foreign or second language into the translator’s mother tongue, even though, now a day, there has been an increase of the market into translating text towards any other foreign language. The Code of Professional Ethics of the Translator’s Guild of Great Britain states “A translator shall only work into the languages of which he has native knowledge. Native knowledge is defined as the ability to speak and write a language so fluently that the expression of thought is structural, grammatically and idiomatically correct.” (Baker, 2018, p. 68).

This leads to questioning whether it can be expected a high-quality post-editing performance among non-native speakers in compare native speakers of the Target Language. Through a comparative study on the validity of the

performance, done by the AMTA, good non-native translators are suitable for native translators task of post editing; although they may need a different kind of PE training (Sharon O'Brien, Lucia Specia, & Michel Simard, 2014).

Given the amplitude choices a translation may have, translators cannot spend time debating word by word before creating general structure of the whole text, then focus on a specific point which deserves to be more meticulous evaluated.

6.8 Text Type

Texts, in general, can be classified by their purpose or their type. Acknowledging their purpose focus on its communicative function such as: to inform, express an attitude, to persuade or create a database. The classification of texts is done by a repetitive list of characteristics in syntax and terminology; they may be descriptive, narrative, expository, argumentative, instrumental, etc. The identification of the text type will allow translators to limit the linguistic form and layout of the translation. Maintaining these conventions helps the readers by allowing them to read a recognizable text with a familiar form. Instruction manuals, technical writings, and legal texts must follow the conventional style norms. Nonliterary and informative texts (instructional manuals, technical articles, etc.) have a standardized format in which MT comes as a handful tool in their translation. Analyzing its communicative function may be a characteristic (Buhler 1988, Hatim and Mason 1990, van den Brocck 1980, Trosborg, 1997 cited in S. Chan, 2004)

6.9 Translation Demands

John Hutchins (2003) explain there are four translation demands within the use of MT, those are dissemination, assimilation, interchange, information access. The first is expected to produce the closes human-quality translation which may be published. The second demand has a lower level of quality and is expected to extract information as quickly as possible. The third one is created for one-on-one communication purpose on the Internet such as emails, chats, other online messaging, and Spoken Language Translation (SPL) through a telephone conversation and business negotiation. The fourth and final demand for MT applications is the integration of multilingual systems of research,

extracting information, summarizing texts, and interrogating non-textual database.

Translators will mostly focus on the first demand for the creation of a rough translation as a draft. Although in 1990 it was expected for the MT product to be of direct use for publication, it was evidenced that it needed to be extensively revised before publishing. Hence, translators would become post-editors, which also was a viable economical option. For it to work, prior installation of the MT system, a large database compilation is needed to cover all areas, but mostly a Controlled Language and Domain-Specific System would be the most effective (Hutchins, 2003).

The second demand does not apply to full texts but as in a look-up of specialized terms. MT as a look-up dictionary has the highest percentage of MT application among translators but might as well not be defined taking full advantage of the software. Hence, using MT as to produce a draft or gist translation to which post-edition would apply has the second highest percentage of application but will move to be the most important one to analyze. This purpose of use of MT among translators is higher than any other analyses of the software in quality and performance and accuracy, given that perfection is not expected and post-edition will remain a feature in the last stage.(S.-W. Chan, 2014)

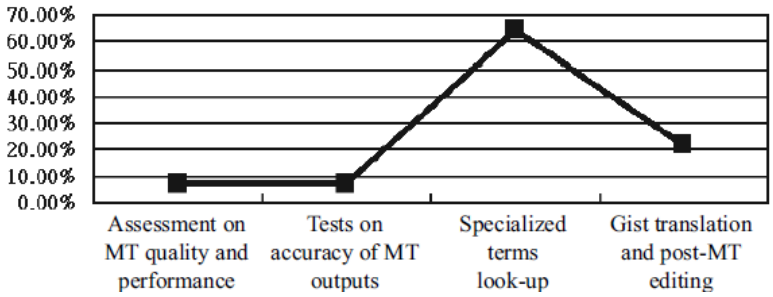

Figure 2 Different purpose of using MT in Taiwan's translation agencies and companies in the 2012 survey (Chan 2014)

There are two variables in the supply and demand market of translation. Loffler-Laurian, (1996) identifies two developments regarding machine translation: constant new technology available and political-social-economic

need for a change. MT, however, remained a small percentage of the market in comparison to human translation; and her study showed the following numbers.

	HUMAN TRANSLATION	MACHINE TRANSLATION
Europe & the United States	300 million pages	2.5 million pages
Japan	150 million pages	3.5 million pages

Table 2 Use of Machine Translation in comparison to Human Translation in Japan vs EU and USA (Loffler-Laurian 1996)

Machine Translation only covered 1.3% of the total amount of pages translated and was expected to remain with no radical change by 2007. This statistics did not take into account the increase of languages demanded because Oren (2004) only listed the following ones with high percentage of demand. According to the above, English dominates the market, followed by Japanese.

	English	Japanese	French	German	Russian	Spanish	Others
As source lang.	48%	32%	8%	5%	2%	---	5%
As target lang.	45%	24%	12%	---	5%	10%	4%

Table 3 Percentage of language translation demand as source language or target language (Loffler-Laurian 1996)

Japanese, although in second place of language with translation demand, has a high technology role and leads foreign trade. It reflected two thirds of the whole amount of translation demands in 1990; therefore further studies were carried out regarding translation demands.

Technology	Foreign Trade	Science	Teaching	Literature	Journals	Business Adminis-tration
40%	25%	10%	10%	5%	5%	5%

Table 4 Percentage of Translation demand per area of study in Japanese (Loffler-Laurian 1996)

6.10 Translators and Machine Translation

At the AMTA 8th conference, Lagoudaki (2008) presented The Value of Machine Translation for professional Translators and contradicts Hunt's (2006) assumption on the use of MT as an emerging necessity to reduce translation costs and delivery times. This is based on translators recycling material and making simple modifications to previous work. If only simple modifications were required to be performed on the machine-rendered TT, this goal would be achieved. However, she explains that this can only be properly accepted by the presence of two special conditions:

a) The TM repository must contain a large number of resources (in the form of bi-texts, translation units, glossaries or lexical items) and b) the resources must be relevant to the translation one wants to produce; that is to say, they must fall into the same subject domain as the new text. (Lagoudaki 2008, p. 264)

Lagoudaki (2008) studied the usefulness of MT through the users POV. She conducted a survey involving 874 professional translators analyzing their use of machine translation and its acceptance. Most of the professionals surveyed who were familiar with MT gave a positive response and considered the TM at their best features. There were, however, a few respondents (10) who were not pleased with the inadequate quality of automatic assembly feature; as well as incorrect linguistic, stylistic, and total unity rendering. It was also noted that not all translators are specialized within a specific field, technical or otherwise, but are open to a diversity of areas. This diversity annulled any existing allure of MT as a method to eliminate repetitive translation processes for it holds no significant effect in their non-specific translations; hence MT loses its benefits.

Either way, many respondents expressed a desire on the improvement of MT and offered improvement recommendation for MT capability.

It must be noticed that the lack of familiarization with machine translation is because its development is very recent. MT is used by trainee translators as well as by existing professional translators. Practitioners of translation fall under three categories: a) MT was not a training element of their study curriculum (7%); b) their study curriculum contained MT theories future expectations, but no MT practical use(70%); and c) MT practical use and experience was included in their training(23%). (Heather Fulford, 2002).

At Fulford's (2002) study, 7% of freelance translators used MT actively, 27% used it occasionally to produce a translation draft, and 53% post-edited work rendered by the client through machine translation systems out of which a 27% of them undertook editing on a regular basis. Whether post editing seems less rewarding than translating, there is still some satisfaction related to correcting the machine. Any skepticism on behalf of translators toward MT capabilities is overshadowed by their interest in learning more about MT, specially taking into account that a majority of this people did not have much practical experience in their training, and took the opportunity to practice using the system with real-world translation assignments.

7. RESEARCH METHODOLOGY

This research project consisted on the application of a constructivist study supported by a mixed methodology that used both quantitative instruments when analyzing the use of machine translation software and qualitative ones for the study of machine translation software renderings.

A constructivist study relies mostly on qualitative instruments like text data and open questions (John Dudovskiy, 2018). This type of research validates the accuracy of findings, in this case the accuracy in rendering, the production in context, positions of researcher within the context, and focus on a single phenomenon (i.e. identifying a single redundant type of mistake). It collects “participants” or “texts” used for the analysis, in this case translations rendered

by students which were compared to machine translation renderings. This methodology brings personal values into the study and helps interprets data, create an agenda for changes (intention of specific focus in the editing process of future MT products), and involves researchers in collaborating with participants (those students who provided their translation examples). The translation sample used in this study was provided by alumni Kennie Clark. The TT consisted of the translation from English into Spanish of a technical manual, out of which chapters 2 and 3 were extracted and used in this project.

7.1 RESEARCH INSTRUMENTS

7.1.1 Survey to translators

To obtain a quantitative result regarding the use of machine translation software by translation professionals and trainees, a survey created specifically for this study was conducted, covering the specific needs as effectively as possible. The instrument was validated by university professors Mr. Luigi De Angelis Soriano and Mr. David Hoyos Hernandez. The suggestions given by the professors were applied except for question number 8 in whose changes would not have fit the “scale system” of this type of question. The survey was applied to 30 students and alumni of the UCSG who studied the science of Translation and have some experience in the field. The survey was set to find out how much and how often MT is used in their work, which software programs are most commonly used, in which areas they apply this aid, and the benefits of using MT as part of the translation process.

7.1.2 Analysis chart

To identify the key focus of the editing process, the rendering of the machine translation tool was analyzed identifying the most frequent type of mistakes made by the machine. This analysis was carried out with a variation of the evaluation tools presented by Sonja Nießen, Franz Josef Och, Gregor Leusch, & Hermann Ney (2000) in their paper “An Evaluation Tool for Machine Translation: Fast Evaluation for MT Research”. The translation items were classified into Word Error Rate (WER) and Subjective Sentence Error Rate (SSER). The second part was applied in a more limited way than the original

proposal. The WER evaluation was performed manually, classifying the types of errors within Substitution, Deletion, Merging, and Insertion. This was calculated in percentage, having the full amount of errors as the hundred percent, as well as comparing the number of errors to the number of accurate translated keywords. SSEER focuses on analyzing sentences. Each sentence was classified into a different level from 0 to 10, from nonsense to perfect (see chart below). A percentage per level or score of translation was given, from which bar chart will demonstrate the variations of proficiency translations among the text.

0	≡	nonsense.
1	≡	some aspects of contents are conveyed.
	...	
5	≡	understandable with major syntactic errors.
	...	
9	≡	ok. Only slight errors in register or style or minimal syntax errors.
10	≡	perfect.

Table 5 Subjective Sentence Error Rate (SSEER) (Nießen, Och, Leusch, and Ney, 2000)

7.2RESULTS

7.2.1 Survey results

I. How many years of translation experience do you have?

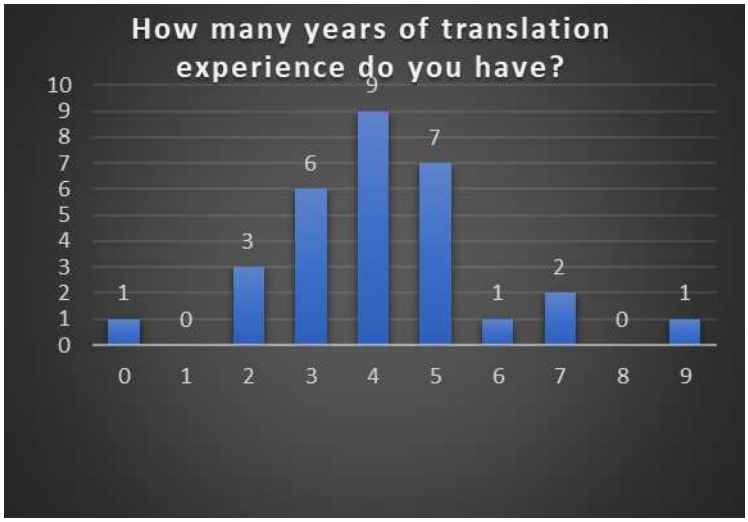

Figure 3 Years of translation experience

Most of the subjects surveyed claimed to have between 3 to 5 years of experience translating. Those with less experience are those who are current students and have not yet gathered experience or very minimal experience out of class. Those with higher experience are for those who are within the first generations of graduates and have increased their experience over the years. In general, the sample does not surpass 10 years of experience and just covers those who started gaining experience since before graduating.

II. Are you a:

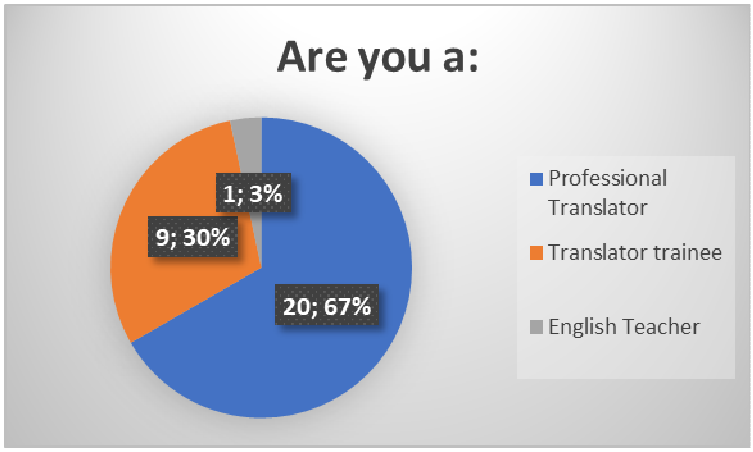

Figure 4 Profession

More than half of the people surveyed are professional translators, those alumni graduating over the different generations, while just over a quarter of them are translator trainees; those are currently taking their university studies.

III. Do you use machine translation software when carrying out a translation assignment?

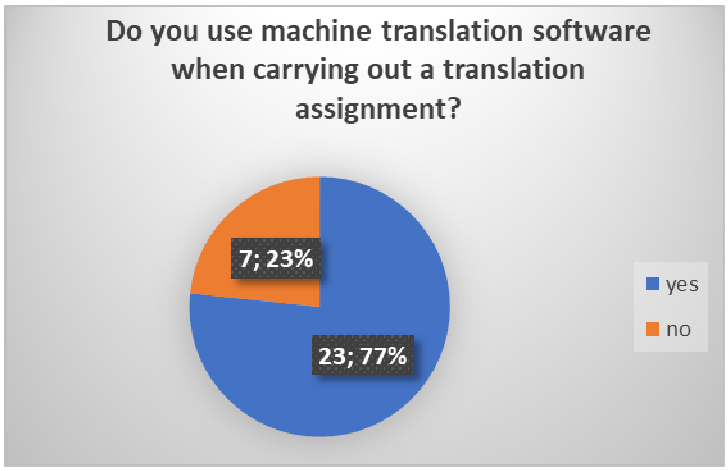

Figure 5 Use of MT

While carrying out a translation assignment, 77% of the translators use some type of machine translation software as part of their processes. 23% of them do not make use of these tools.

IV. Which machine translation software do you use?

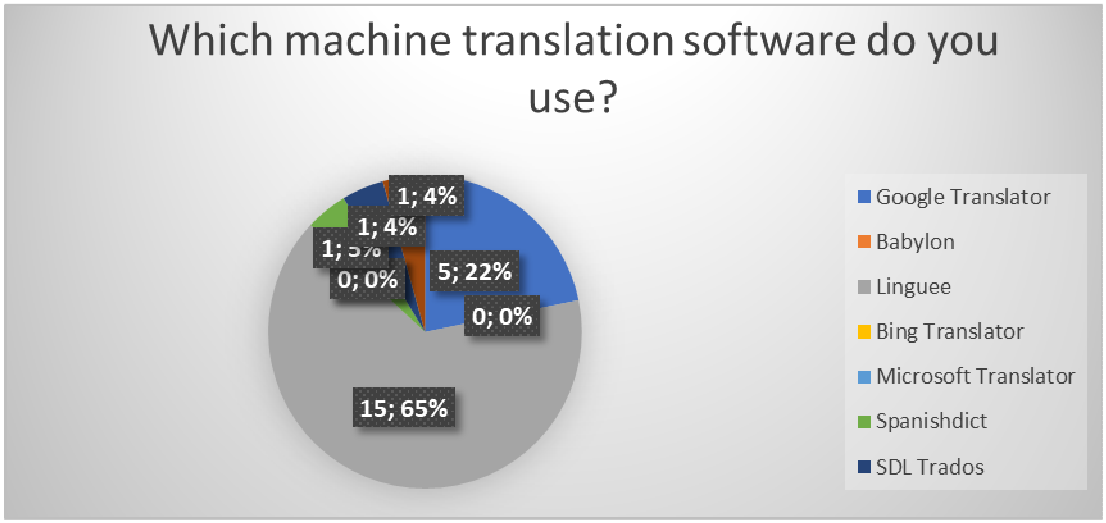

Figure 6 Machine Translation Software use

Two of the most popular machine translation software tools are Lingue and Google Translator. Lingue covers 65% of all, but has a more limited use than google translation, which might be used more depending on the translator's purpose.

V. Why do you use machine translation software during your translation processes?

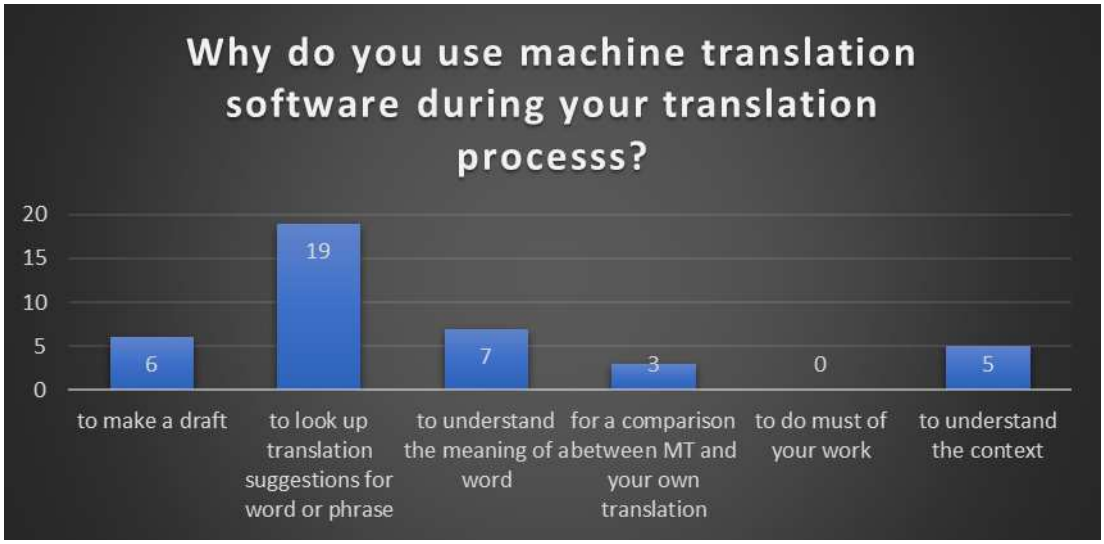

Figure 7 Reasons for MT use

The most common use of machine translation is done with the purpose of looking up translation suggestions for a word or phrase. These results go along with Lingue been the most used MT tool given that Lingue can only be used with words and phrases rather than with sentences or paragraphs. There is the second highest percentage of use of MT to understand a word or context. But it is also used to make a draft, to which using Google translator would be more useful as to cover the whole text in one. The latter is also used for comparison, which work as an inverted process of “looking for a suggestion” but in which one first comes with a possible solution and later evaluates it. There was no excessive use of machine translation in which one allows the machine to do “most of the work”.

VI. In which fields do you use MT?

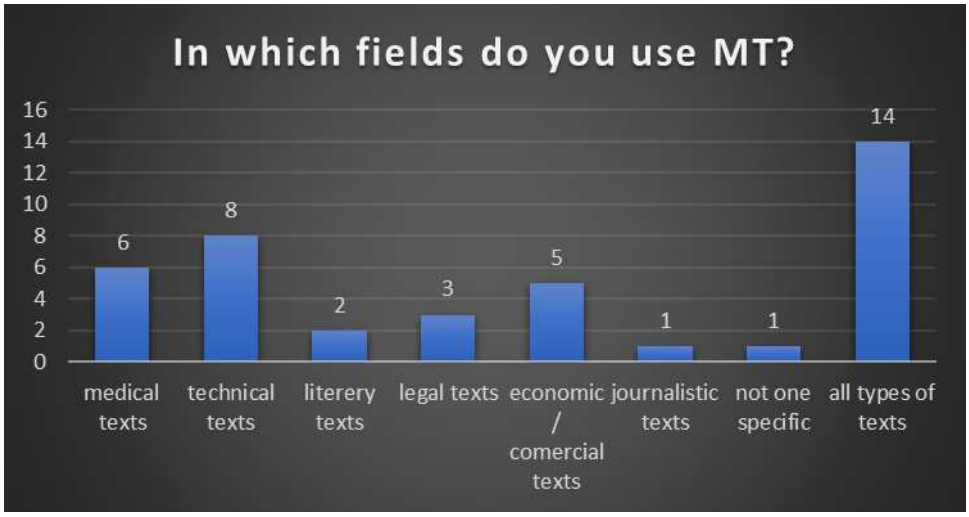

Figure 8 Fields where MT is applied

The most common use of machine translations tends to be repetitively in the fields of technical texts, medical and economic texts. It is however considered that MT is used in all areas, and not just strictly in those described, even though they do tend to work aside MT more often than other fields.

VII. How often do you use MT?

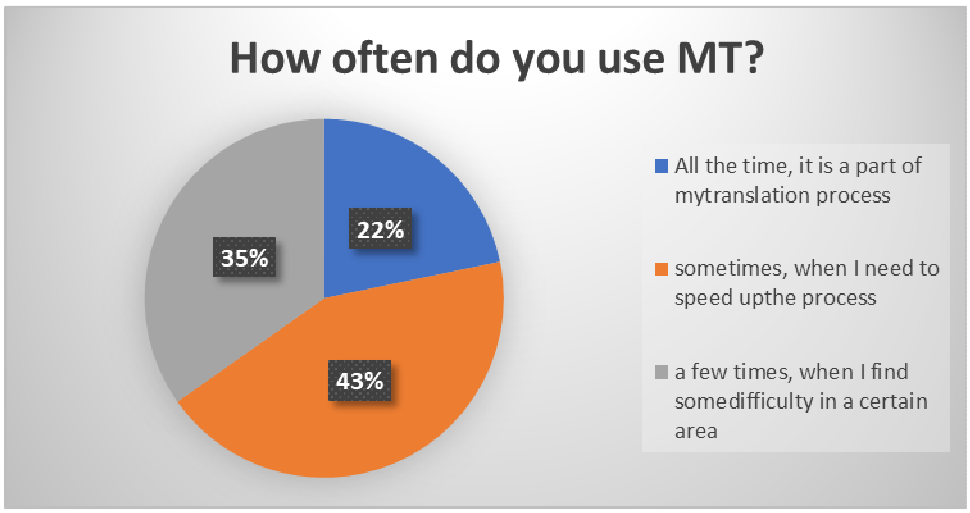

Figure 9 Frequency in the use of MT

There is a wide variety of discrepancy regarding the amount of use of machine translation. Whether some use it all the time, other people rarely used it, and another group of people consider it an occasional occurrence. The three groups reached a close third of the overall statistics each, having a slightly higher

percentage those who find themselves in between, nor much nor little use of MT, but sometimes as an ideal way to speed up the process.

VIII. How much editing do you make to the MT rendering?

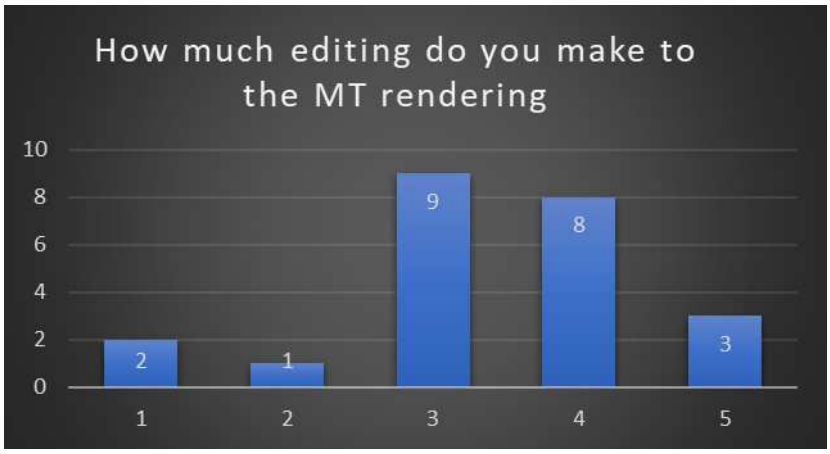

Figure 10 Editing MT rendered product

After using machine translation, all products must be revised and edited, to which degree may vary for every person. In a scale from 1 to 5, been 1 the smallest amount of editing and 5 the highest, most translators edited from half the product to a complete edition of the document. A small amount of people complete the editing process when there is more work to be done to the MT rendering. Just three of the people surveyed admitted doing slightly to barely no editing (level 1-2 of editing).

IX. On average, how much time do you spend translating one page (400 words) of a specialized language document from English into Spanish without MTS?

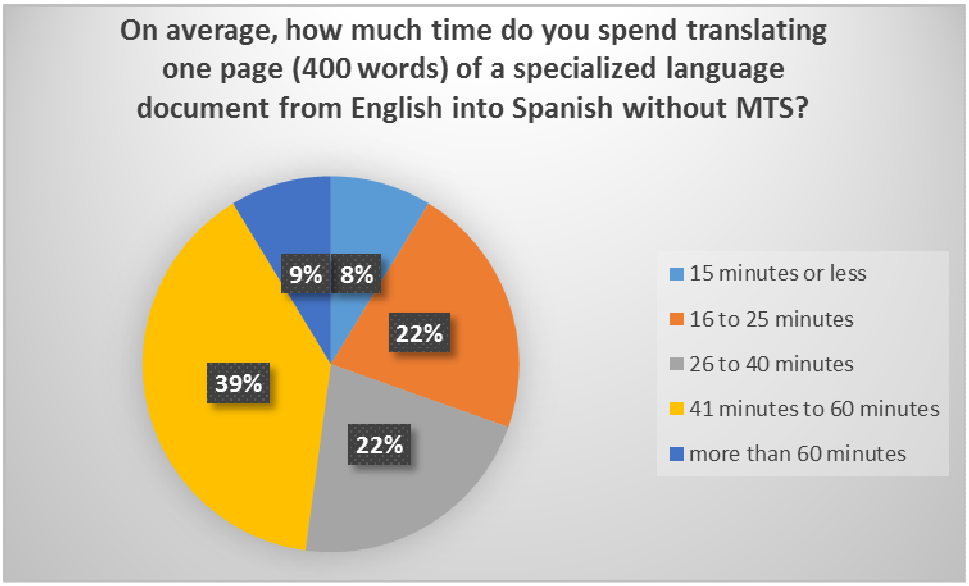

Figure 11 Time spend translating a document from Eng to Spa

When translating from English into Spanish, without the aid of MT, 39% of the translators surveyed take from 41 minutes to 60 minutes in translating a 400-word document. An equal amount of 22% take from 16 to 25 minutes or from 16 to 40 minutes doing the same translation, giving us an average of people taking form a quarter of an hour to a full hour of work. There were a few exceptions that there either too slow or too fast, among which 9% take as long as over an hour; and 8% can finish it as fast as within 15 minutes.

On average, how much time do spend translating one page (400 words) of a specialized language document from English into Spanish using MTS?

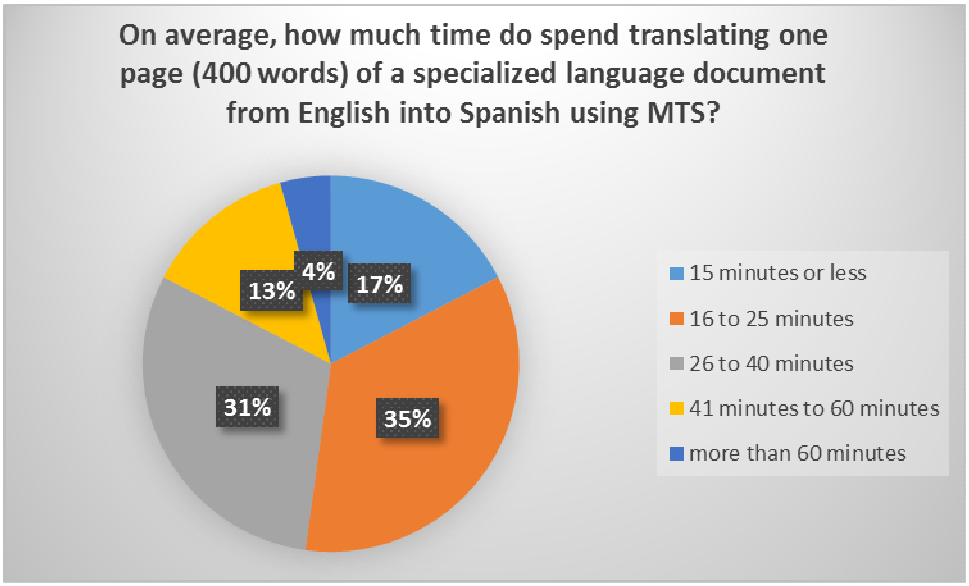

Figure 12 Time spend translating a document from Spa to Eng

When translating the same type of document with the aid of MT, better time-related results were achieved regarding completion of the process. Just a total of 17% of the surveyees take over 41 minutes. Between 31% and 35% of the people take from 26 to 40 minutes or 16 to 25 minutes respectively, covering half of the translators with an average of 25 minutes per 400 words. The fastest translators working in less than 15 minutes cover a 17% of the surveyees, which is double the amount of those who work with no aid.

7.2.2 WER results

S= Substitution D=Deletion M=Merging I=Insertion

Example	S	D	M	I
A 3-phaced AC motor **Motor trinfásico de CA**			X	
The worm **El tornillo sin fin**				X
When either.. or **Cuando … o ..**			X	
When .. is pressed **Cuando se presiona…**	X			
The light… shall be onx **La luz estará encendida**	X			
Switching on **Encenderse**			X	
Clutching in **Embrague**			X	
As long as **Siempre que**			X	
In order to **Para**			X	
Start up **Encender**			X	
Press push button **Presione el botón**		X		
Proceed as follow **Proceder de la siguiente forma**				X
Push-button **Botón**		X		
Would be inoperative **No funcionará**	X			

Forward run **Avance**			X	
Counter force **Contrafuerza**			X	
b.- **segundo.-**	X			
Take the recouping wrench off **Retire la llave de recuperación**			X	
If yes.. **En caso afirmativo…**				X
Run condition again **Funcionar nuevamente**		X		
At the top **En la parte superior**				X
Facing down **Hacia abajo**		X		
Front lay photocell **Fotocélula frontal**		X		
At the bottom **En la parte inferior**				X
It checks wether… **Verifica su…**		X		
If no sheet is detected **Si no se detecta ninguna hoja**	X			
Shall light up **Se encenderá**		X		
Three reflexión photocell **Fotocélula de reflexión 3**	X			
Excessively high paper piling **Acumularía excesiva de papel**		X		
The cylinder reaches out **El cilindro se extenderá**	X			
Then stop the roller **Pare el rodillo**		X		
Ejected and pushed out **Expulsada y expulsada**	X			

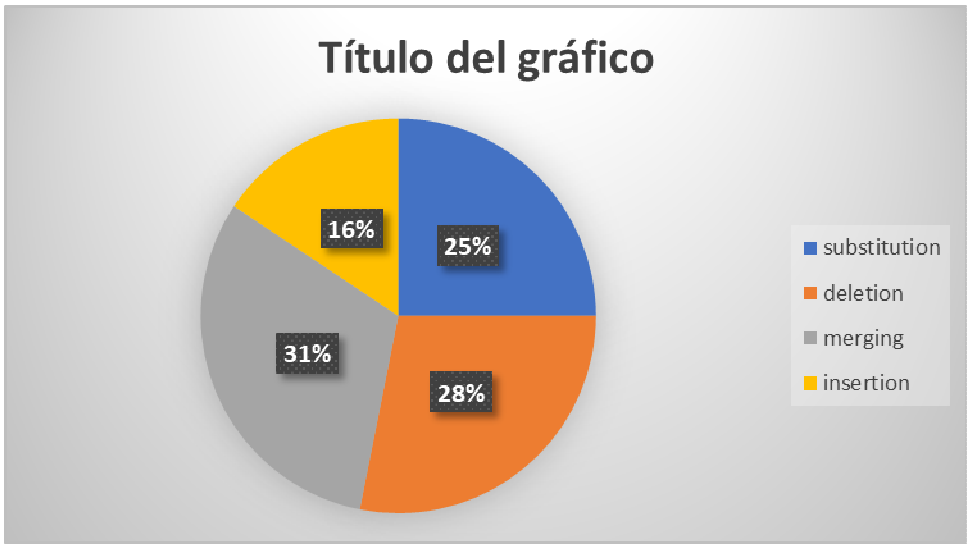

Figure 13 WER results

7.2.3 SEER Results

	MT version	1-10	Human translation version
1)	La máquina es accionada por un motor trifásico de CA con control de velocidad del inversor.	7	La máquina funciona como un motor de Corriente Alterna de tres fases con control invertido de velocidad.
2)	El motor impulsa el tornillo sin fin a través de un volante y un embrague / freno neumático.	8	El motor conduce el engranaje de tornillo perenne usando un volante y un freno/embrague neumático.
3)	El embrague funciona cuando se presiona el botón de avance lento (28) o el botón de funcionamiento continuo (27).	10	El embrague opera cuando el botón de marcha intermitente (28) es presionado o el botón de corrida continua (27) es presionado.

4)	El gusano mueve la viga inferior de la platina a través de un mecanismo que consiste en una manivela y alterna.	7	El engranaje de tornillo perenne mueve la viga más baja del plato de prensa mediante de un mecanismo consistente de un volante de manivela y cabillas.
5)	La velocidad del motor principal de la máquina se establece a través de un inversor, controlado por un potenciómetro.	10	La velocidad del motor de la máquina es fijado mediante un inversor, controlado por un potenciómetro.
6)	Potenciómetro a cero = velocidad mínima de la máquina, es decir, 1200 ciclos / hora.	10	Potenciómetro en cero = velocidad mínima de la máquina, siendo esta 1200 ciclos/hora.
7)	Potenciómetro a 10 = velocidad máxima de la máquina, es decir 4500 ciclos / hora.	10	Potenciómetro a 10 = velocidad máxima de la máquina, siendo esta 4500 ciclos/hora.
8)	Para aumentar la velocidad, coloque el potenciómetro en la posición que representa la velocidad deseada, presione el botón (46), la luz en el botón estará encendida, luego con aceleración progresiva hasta la velocidad establecida en los potenciómetros, para presionar	8	Para incrementar la velocidad, coloque el potenciómetro en la posición que representa la velocidad deseada. Presione el pulsador (46), la luz del botón deberá encenderse; luego, con aceleración progresiva

	el botón de nuevo para disminuir la velocidad hasta la velocidad de rastreo.		hasta el nivel fijado. Presionar el botón de nuevo para disminuir la velocidad hasta la velocidad de gateo.
9)	Después de encender el motor principal, un temporizador de 10 segundos evita el embrague de la máquina siempre que el motor y el volante no hayan alcanzado su velocidad máxima.	10	Luego de encender el motor principal, un temporizador de 10 segundos previene el embrague de la máquina siempre y cuando el motor y el volante no hayan alcanzado su velocidad tope.
10)	El primer toque en el botón jog o de ejecución continua simplemente opera un hooter.	6	Presionar una vez el botón de marcha intermitente o de marcha continua, solamente hace funcionar una alarma.
11)	Cuando la sirena se detiene, el botón se debe volver a activar para encender la máquina.	9	Cuando la alarma se detiene, el botón tiene que ser presionado de nuevo para hacer arrancar la máquina.
12)	La sincronización general y también la verificación de transferencia de hoja operada por sensores, controlados por PLC a través de un codificador conectado a la unidad principal,	7	La sincronización general, así como también la revisión de transporte operada por sensor, controlada por el PLC, mediante un codificador

	la sincronización general en el tiempo de transferencia de hoja puede ajustarse a través de LCD de programa en PLC a través de pantalla LCD.		unido al mecanismo de accionamiento principal. Y la sincronización general de la temporización de transporte de láminas, puede ser ajustada usando un programa de LCD en un PLC (Controlador de lógica programable) mediante una pantalla de cristal líquido.
13)	Encienda el interruptor principal.	10	Encienda el interruptor principal
14)	Gire el interruptor de selección (41) para encender los circuitos de control.	10	Gire el interruptor (41) para encender los circuitos de control
15)	Arranque el motor principal a través del botón pulsador (42).	9	Encienda el motor principal con el pulsador (42)
16)	Gire el interruptor de selección (48) para activar el circuito de detección del sensor.	8	Gire el interruptor (48) para accionar el sensor de detección de circuitos
17)	Encienda la bomba de vacío de presión a través del interruptor (25).	8	Encienda la bomba de arranque a presión usando el interruptor (25)
18)	Presione el botón (47) para hacer jog o (44) para ejecución continua	8	Oprima el pulsador (47) para marcha intermitente o el pulsador (44) para

			corrida continua
19)	El accionamiento manual es necesario en los siguientes casos:	10	Accionamiento manual es necesario en los siguientes casos:
20)	Para liberar la platina de su posición de bloqueo superior, si el trote no es suficiente.	9	Para sacar el plato de su posición fija en la parte superior, si es que la marcha intermitente no es suficiente
21)	Para restaurar el dispositivo de acoplamiento de límite de torque.	10	Para restaurar el dispositivo de acoplamiento para límite el torque.
22)	Detenga el motor principal.	10	Detenga el motor principal.
23)	No presione una parada de emergencia porque el botón de liberación del freno no funcionará.	9	No presione ningún detenido de emergencia, ya que al hacer esto, el pulsador para soltar el freno quedará no operativo.
24)	Inserte y empuje la llave de trinquete en el extremo del eje (figura 2.3).	9	Inserte y presione el trinquete al final del eje.
25)	Gire el interruptor de seguridad (39) a 1 posición.	7	Coloque el interruptor de seguridad (39) en la

			posición 1.
26)	Entonces el embrague estará encendido.	10	El embrague estará encendido.
27)	Y opere la llave de trinquete.	10	Opere el trinquete
28)	Gire el interruptor selector (39) a la posición 0.	9	Coloque el interruptor (39) en la posición 0.
29)	Quite la llave de trinquete, tire de la palanca hacia abajo y extráigala rueda dentada para separar el eje y el accionamiento manual.	9	Remueva la manivela de arranque del trinquete, jale la palanca hacia abajo y saque el engranaje para separar el eje y el mecanismo de accionamiento manual.
30)	Tire de la palanca hacia abajo para desembragar el extremo del eje a la unidad principal.	9	Jale la palanca hacia abajo para desenganchar el engranaje final del eje de accionamiento principal.
31)	Para restaurar el dispositivo de acoplamiento de límite de torque.	9	Para restaurar el dispositivo de acoplamiento para limitar el torque.
32)	Cuando el movimiento de la barra de agarre se ve forzado a disminuir o detenerse por cualquier obstáculo y la contrafuerza producida supera	8	Cuando el movimiento de la barra de pinzas de cogida. forzado a disminuir o a detenerse debido a cualquier obstáculo y la

	el límite de torque establecido, el Dispositivo de Acoplamiento de límite de torque se desconectará para evitar que el índice y el sistema de transmisión principal relacionado se dañen por la sacudida.		fuerza contraria resultante es mayor al límite puesto para el torque, el Dispositivo de Acoplamiento para limitar el torque se desconectado para prevenir que el sistema índice y el mecanismo de accionamiento principal sean afectados por el shock.
33)	En caso de que así ocurriera, la luz indicadora 5 estará encendida y señalizando el desembrague del dispositivo de acoplamiento del límite de torque y la sincronización de la barra de la pinza con la máquina principal apagada.	9	En caso de ocurrir, la luz del indicador 5 se encenderá para mostrar que se ha realizado el desenganche del embrague del dispositivo de acoplamiento para limitar el torque, y que el tiempo de ejecución para la barra de las pinzas de cogida con la máquina principales ha agotado.
34)	En este caso, el dispositivo de acoplamiento del límite de par necesita restaurarse siguiendo los siguientes procedimientos	8	En este caso, el dispositivo de acoplamiento para limitar el torque deberá ser restaurado siguiendo las siguientes indicaciones:
35)	Abra la puerta de seguridad	9	Abra la puerta transparente

	transparente en la alimentación.		de seguridad en la alimentación de entrada.
36)	Coloque la llave de recuperación en la brida de la rueda dentada de la cadena con la barra de extensión.	8	Encaje la llave en el reborde o pestaña del diente de la cadena de engranaje con la barra de extensión.
37)	Gire la llave de recuperación hacia abajo hasta que el dispositivo se restaure en la posición de recuperación.	9	Gire la llave hacia abajo hasta que el dispositivo regrese a la posición de la llave.
38)	En este momento se escuchará un clic.	10	Al hacer esto se podrá apreciar un sonido como un “clic”.
39)	Presione el botón 49 (P1-7) y verifique las luces indicadoras para ver si está apagado.	10	Oprima el botón 49 (P1-7) y revise las luces indicadoras para constatar que este apagado.
40)	En caso afirmativo, se restablece el dispositivo de límite de par, si el botón 49 no funciona y la luz indicadora está encendida, debe repetir los pasos anteriores (1-3).	9	Si está apagado, el dispositivo limitante de torque queda restaurado. Si el pulsador 49 no funciona y las luces indicadoras están encendidas, se necesitará repetir los pasos del 1 al 3.

41)	Retire la llave de recuperación y cierre la puerta.	10	Saque la llave y cierre la puerta.
42)	Maneje manualmente la máquina según los pasos mencionados en 1,2,3 para verificar si el tiempo entre la barra de agarre y la máquina es correcto.	9	Manualmente opere la máquina según los pasos mencionados en 1,2,3 para comprobar el tiempo entre la barra de pinza y la máquina esta correcta.
43)	En caso afirmativo, la máquina está lista para funcionar nuevamente.	10	Si así lo es, la máquina está lista para efectuar otra corrida.
44)	Reducción de engranaje y sistema de seguridad para accionamiento manual.	10	Trinquete reducido y sistema de seguridad para el mecanismo de accionamiento manual
45)	Inserta y empuja la llave de trinquete en el extremo del eje.	10	Inserta y empuja la llave de trinquete al final del eje.
46)	Cheque chequeo de viaje	1	Revisión de lámina transportadora
47)	La fotocélula está en la parte superior, hacia abajo.	9	La célula Fotoeléctrica está en la parte superior, apuntando hacia abajo.
48)	Para verificar si la hoja llega	9	Revisar si la lámina llega

	temprano.		temprano.
49)	En el grado de la máquina 200°-205°, la fotocélula de alimentación PH2 comprueba la llegada de la hoja, si llega la hoja, la luz 18 estará encendida, la máquina se detendrá.	9	cuando la máquina está 200°-205° grados, la célula fotoeléctrica de alimentación de entrada PH2 revisa la llegada de la lámina, si la misma llega, la luz 18 se enciende, y la máquina se detiene.
50)	Dos fotocélulas de fibra en la parte inferior.	10	Dos células fotoeléctricas de fibra en el fondo.
51)	Para verificar el tiempo de llegada de la hoja en la parte frontal.	9	Para revisar el tiempo de llegada de la lámina en el front Lay.
52)	Justo después de que la barra de sujeción comienza a moverse, verifica si la hoja se ha llevado.	10	Justo después de la barra sujetadora comience a moverse, se revisa si es que la lámina ha sido llevada.
53)	Si no se detecta ninguna hoja, pero la fotocélula de alimentación (18) detectó la hoja, la máquina se detendrá.	10	Si no se llega a detectar lámina alguna, pero la Célula Fotoeléctrica de alimentación de entrada (18) sí la detectó. La máquina se detendrá.

54)	La fotocélula está en la parte superior hacia abajo.	9	La célula fotoeléctrica está en la parte más alta y apuntando hacia abajo
55)	Si la fotocélula (16) ha detectado una lámina durante el ciclo anterior, la fotocélula (12) verifica si ha aparecido en la salida de la platina.	9	Si la célula fotoeléctrica (16) ha detectado la lámina durante ciclos previos, la Célula Fotoeléctrica (12) revisa si esta ha aparecido en la desembocadura del plato de prensa.
56)	La hoja se verifica en una posición desde el borde frontal, en un punto previamente elegido, que está determinado por el disco ajustable del programa en el PLC.	9	La lámina es revisada en una posición desde el borde frontal, en un punto previamente elegido, el cual es determinado por el disco ajustable del programa en el PLC.
57)	La fotocélula detecta si una hoja ha aparecido por completo desde la sección de troquelado, desde una posición en la mesa de soporte de troquelado.	8	La Célula Fotoeléctrica detecta si es que la lámina ha aparecido en su totalidad desde la sección de troquelado, desde una posición en la mesa de troqueladora de apoyo.
58)	Si no se detecta ninguna hoja, muestra que la hoja ha caído en la sección de troquelado,	8	Si ninguna lámina es detectada, se mostrará que la lámina ha caído en la

	entonces la lámpara 12 se encenderá y la máquina se detendrá.		sección de troquelado, entonces la lámpara 12 deberá encenderse y la máquina se detendrá.
59)	Para comprobar si el espacio entre el final de la hoja y la siguiente barra de pinzas es libre, lo que significa que la hoja no se ha caído dentro del separador.	7	Revisa el espacio entre el borde de la lámina y la siguiente barra sujetadora está disponible, lo que significa que la lámina no ha sido puesta dentro del removedor.
60)	En caso de falla, la lámpara se enciende y la máquina se detiene.	10	En caso de falla, las lámparas se encenderán y la máquina se detendrá.
61)	La fotocélula está en la parte superior, hacia abajo.	9	La Célula Fotoeléctrica está en la parte más alta, apuntando hacia abajo.
62)	Ajuste la posición lateral de las fotocélulas para asegurarse de que esté ubicada en el lugar correcto.	10	Ajustar la posición lateral de la Células Fotoeléctricas para asegurarse que esté puesta en el lugar indicado.
63)	Idéntico a la celda de salida de la platina.	8	Idéntico a la célula de la desembocadura del plato de prensa.
64)	Además, estas fotocélulas proporcionan los pulsos de conteo necesario para la	9	Además, estas Células Fotoeléctricas proveen el conteo de pulsos necesario

	separación de lotes.		para la separación de lotes.
65)	En caso de falla, la lámpara (11) se enciende y la máquina se detiene.	10	En caso de falla, la lámpara (11) se encenderá y la máquina se detendrá.
66)	La fotocélula de reflexión tres está montada frente a su reflector.	8	La Célula Fotoeléctrica de tres reflexiones está montada opuesta a su reflector.
67)	Compruebe si el papel cae normalmente en la sección de entrega.	9	Revisar si el papel cae con normalidad en la sección de suministro.
68)	Un ajuste incorrecto del contador puede causar una acumulación excesiva de papel.	9	Una configuración errónea del contador puede causar un apilamiento excesivo de papel.
69)	En caso de falla, la lámpara (10) se enciende y la máquina se detiene.	10	En caso de falla, la lámpara (10) se encenderá y la máquina se detendrá.
70)	La celda de reflexión montada frente a su reflejo.	9	La célula de reflexión está montada opuesta a su reflexión
71)	Compruebe si hay alguna obstrucción antes de que el cilindro se extienda.	9	Revisa si existe alguna obstrucción antes de que el cilindro salga.

72)	Verifique la subida y la parada de la plataforma de elevación principal y la extracción del cilindro.	8	Revisa el alza y el detenido de la plataforma principal de elevación y el retiro del cilindro.
73)	La celda de reflexión está montada frente a un reflector.	9	La célula de reflexión está montada opuesta a un reflector.
74)	Para verificar si está despejado antes de que salgan los cilindros.	9	Revisar si está despejado antes de que el cilindro salga.
75)	En caso de falla, la lámpara (10A) se enciende y la máquina se detiene.	10	En caso de falla, la lámpara (10A) se enciende y la máquina se detiene.
76)	Además, comprueba el palet principal que llega al llegar, detiene el palet principal y luego los cilindros se retiran.	6	Además, revisa la llegada de la plataforma principal, detiene la plataforma principal y luego, los cilindros se retiran.
77)	La celda de reflexión está montada frente a un reflejo.	10	La célula de reflexión está montada frente a una reflexión.
78)	Para verificar si la pila de papel es expulsada y expulsada a la mesa de entrega, pare el rodillo girando y deje que la plataforma	6	Revisa si la pila de papel es expulsada y empujada fuera de la mesa de suministro, luego detiene el giro hacia dentro del rodillo

	principal suba.		y permite a la plataforma principal subir.

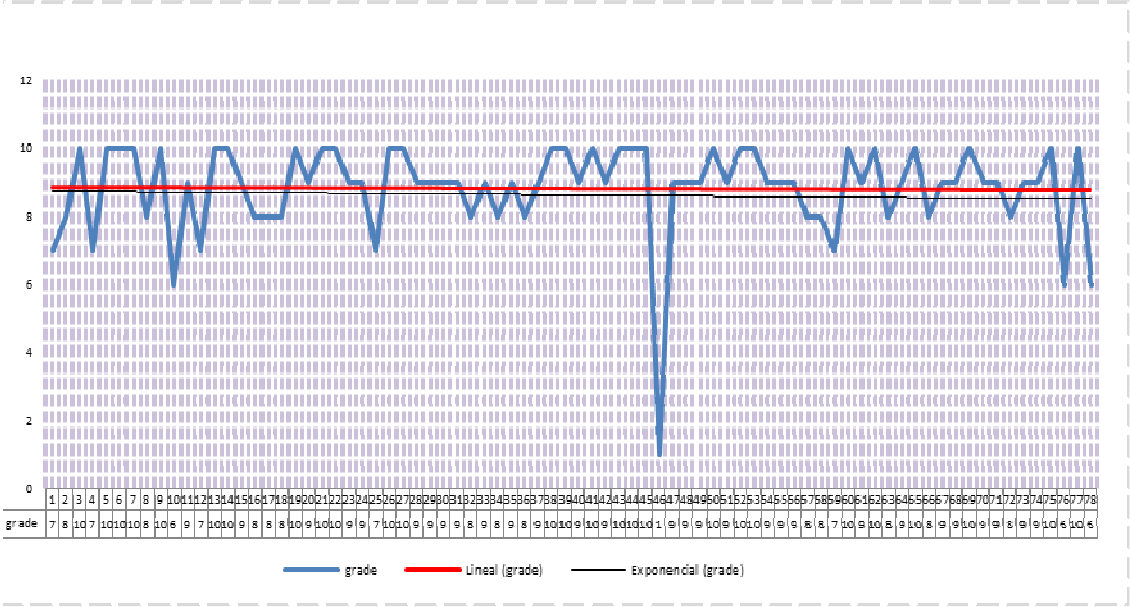

Figure 14 Mean, median and Mode on the MT rendering sentence-by-sentence evaluation

Thorugh the analysis of the product given by the MT, each sentence got a grade from 1 to 10 regarding its qualty as suggested by the SEER model explained earlier. The mean of this results, meaning the average grade received, was 6.17 out of 10. This is because, even though almot 90% of the results attained a grade equal or higher than 8, 0,78% of the times it would retrieve a completely nonsensical result with barely some aspects of the content conveyed. E.g., out of 78 sentences in total, sentence number 46 was assigned a grade of 1/10 for translating “sheet traveling check” into “cheque chequeo de viaje”. The median grade was 9 out of 10, which is the middle number which allows us a capacity of planning on the amount of editing needed regarding the MT product. The mode was also a grade of 9/10, which was the result of 28 sentence, just one above the number of sentences which were assigned a 10/10.

8. CONCLUSION AND RECOMMENDATIONS

The most appropriate fields in which MT can be applied are technical and medical documents. Within the technical field, the results on the quality of MT rendering were highly positive, i.e. MT processes are quite accurate with average editing required.

It is necessary to identify the type of text one must translate and decide whether it is one in which the use of MT will provide useful results. In certain cases, it is more appropriate to opt for minimal use of MT aid, especially in fields where more complex sentence structures are the rule.

Translators can be aided by MT tools when there are doubtful and need further suggestions to make informed decisions on rendering words or phrases. It is recommended that the process is carried out in sections, and not through complete input of the whole document.

Accurate rendering can be achieved through modification of the input. Segmentation of the source text is necessary so that the software can perform more successful analysis of each sentence and produce more adequate renderings.

Segmentation processes and text extraction for creating input documents are procedures required so as to achieve simplification of the format, retrieve the right type of file, and repair errors that may occur in the transfer due to the incompatibility of the type of file. The sample used in this study consisted of many chapters which hold a high amount of technical images (non-textual features), and irregular formats; therefore, considering that the only features available for free in Google translate do not provide text extraction options, the sections selected for analysis were the ones that contained the least amount of non-textual information and irregularities in the format.

If the ST is a pdf file, it is recommended to convert it into word. The MT tool may cut sentences, as it does not read the pdf file accurately and each new line is presented as a new paragraph, sometimes cutting in the middle of a sentence or even a word. The activation of the pilcrow allows a view of these errors which must be corrected as part of the preparation of the input. Long paragraphs must be divided manually, and all symbols and images must be extracted so as to achieve a simple-text-format for input. If the latter is not performed, the MT tools

may have trouble reading the file and may not produce even automatic segmentation before the automatic translation.

The most common type of error produced by machine translation tools in the technical specialized field were merging, seconded by deletion. In both cases there was omission of information, which was perceived as merging two concepts into one or over-repeating information that did not need be rendered to convey the idea.

It is important to analyze the whole paragraph when attempting to identify a case of omission or merging. While the tool may consider the idea conveyed, the information omitted may be presented given a cohesion mistake retrieved by the MT tool, and only a human mind can analyze whether the connection of ideas is correct. If not, important information of the text may be missing, which, in the technical field posits, severe drawbacks in the form and contents of the final product leading to misinterpretations and ill use of the given device, machinery, etc.

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APPENDICES

APPENDICES 1

SURVEYS (30)

Analysis of the use of machine translation among professional translator and translator trainees. The why and how of its use. Which software do they use and why, how often, and how useful is it.

1-How many years of translation experience do you have?

__4____

2-Are you a:

- o Professional translator
- o Translator trainee
- o Other:_____

3-Do you use machine translation software when carrying out a translation assignment?

Yes__X__ No ____

(If you mark an X next to "No" then you have finished the survey, if not then please continue)

4-Which machine translation software do you use?

- o Google Translator
- o Babylon
- o Linguee
- o Bing translator
- o Microsoft Translator
- o Others:_____

5-Why do you use machine translation software during your translation process? (choose all which apply)

- o To make a draft
- o To look up translation suggestions of a word or phrase
- o To understand the meaning of a word
- o For a comparison between MT and your own translation
- o To do most of your work
- o To understand the context
- o Other: _____

6-In which fields do you use MT? (choose all which apply)

- o Not one specific
- o Medical texts
- o Technical texts
- o Literary texts
- o Legal texts
- o Economic / commercial texts
- o Journalistic texts
- o All types of text

7-How often do you use MT?

- o All the time, it is part of my translation process
- o Sometimes, when I need to speed up the process
- o A few times, when I find some difficulty in a certain area

8-How much editing do you make to the MT rendering?

Just a few syntactic, semantic and punctuation Improvements	1	2	3	4	5	Rephrase most of the document

9-

A-In average, how much time do you spend translating one page (400 words) of a specialized language document from English to Spanish without MTS?

- o 15 minutes or less
- o 16 to 25 minutes
- o 26 to 40 minutes
- o 41 to 60 minutes
- o more than 60 minutes

B- In average, how much time do spend translating one page (400 words) of a specialized language document from English to Spanish using MTS?

- o 15 minutes or less
- o 16 to 25 minutes
- o 26 to 40 minutes
- o 41 to 60 minutes
- o more than 60 minutes

APPENDICES 2

SOURCE TEXT

Chapter 2

MAIN DRIVE

2. MAIN DRIVE

2.1 DESCRIPTION

The machine is driven by a 3-phase AC motor with inverter speed control.

The motor drives the worm through a flywheel and a pneumatic clutch/brake. The clutch operates when either the jog button (28) or the continuous run button (27) is depressed. The worm moves the lower beam of the platen through a mechanism consisting of wheel crank and toggles.

2.2 SPEED CONTROL

The speed of the main motor of the machine is set through an inverter, controlled by a potentiometer.

Potentiometer at zero = minimum speed of machine, that is 1200 cycles/hour.

Potentiometer at 10 = maximum speed of machine, that is 4500 cycles/hour.

To increase the speed, set the potentiometer at the position which represents the speed desired, press push button (46), light in the button shall be on, then with progressive acceleration up to the rate set on the potentiometers, to press the push button again to decrease the speed down to crawling speed.

2.3 START-UP OF MOTOR AND MACHINE

After switching-on the main motor, a 10-second timer prevents the clutching-in of the machine as long as the motor and flywheel has not reached their full speed. The first push on the jog or continuous run button merely operates a hooter. When the hooter stops, the button is to be actuated again in order to start up the machine.

2.4 GENERAL SYNCHRONIZATION

The general synchronization and also the sheet transfer check operated by sensors, controlled by PLC through an encoder linked to the main drive, the general synchronization at sheet transfer timing can be adjusted through program LCD in PLC through LCD screen.

2.5 START-UP

1. Switch on the main switch.

2. Turn select switch (41) to switch on control circuits.

3. Start the main motor through push button (42).

4. Turn select switch (48) to actuate sensor detect circuit.

5. Start the pressure-vacuum pump through switch (25).

6. Depress push-button (47) for jog or (44) for continuous run

2.6 MANUAL DRIVE

Manual drive is necessary in the following cases:

1. To release the platen from its upper locked position, if jogging is not sufficient (see 6.3).

2. To restore torque limit coupling device.

Proceed as follows:

1. Stop the main motor. Do not depress an emergency stop, because the brake release push-button would be inoperative.

2. Insert and push in the ratchet wrench at the end of the shaft (fig. 2.3). Turn the safety switch (39) to 1 position. Then clutch will be on. And operate the ratchet wrench. (see fig. 2.1)

Right: Reverse run.

Left: Forward run.

3. Turn selector switch(39) to position 0.Remove ratchet spanner, pull lever down and pull out

gearwheel to separate the shaft and manual drive.

Pull the lever down to declutch the shaft end to the main drive.

4. To restore torque limit coupling device.

When gripper bar’s movement is forced to slow down or to stop by any obstacle and the counter force produced is over the torque limit set, the torque limit Coupling Device will be disconnected to prevent the index and related main drive system from damage by the shock. Should it be happened, the indicator light 5 shall be on and signaling the declutch of the torque limit coupling device and the timing of the gripper bar with the main machine is out. In this case the torque limit coupling device needs to be restored per following procedures:

a. Open the transparent safety door at in feed.

b. Fit the recouping wrench on to the flange of the chain sprocket wheel with the extension bar.

c. Turn the recouping wrench downward till the device is restored at the recouping position. At

this moment a click noise shall be heard. (see fig. 2.1)

d. Depress push button 49(P1-7) and check the indicator lights to see if it is turned off. If yes, the torque limit device is restored, If push button 49 doesn’t work and indicator light is on, need to repeat the above steps(1-3).

e. Take the recouping wrench off and close the door.

f. Manually drive the machine per steps mentioned in 1,2,3 to check if the timing between gripper bar and machine is correct. If yes, machine is in ready to run condition again.

TORQUE LIMIT CLUTCH

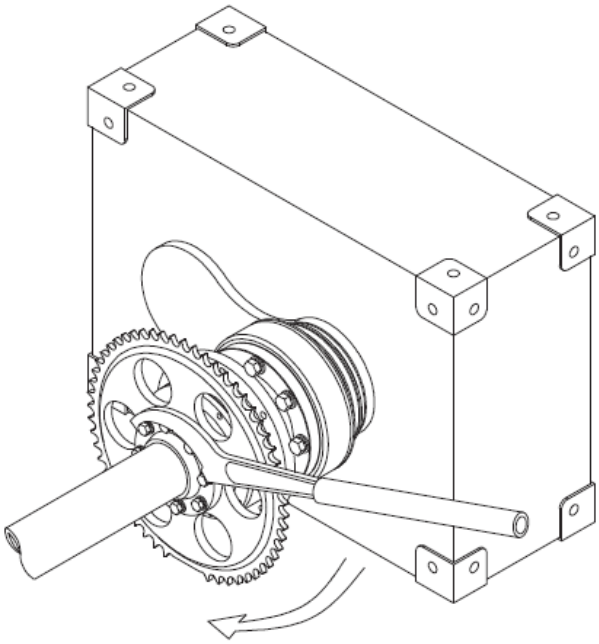


Fig. 2.1

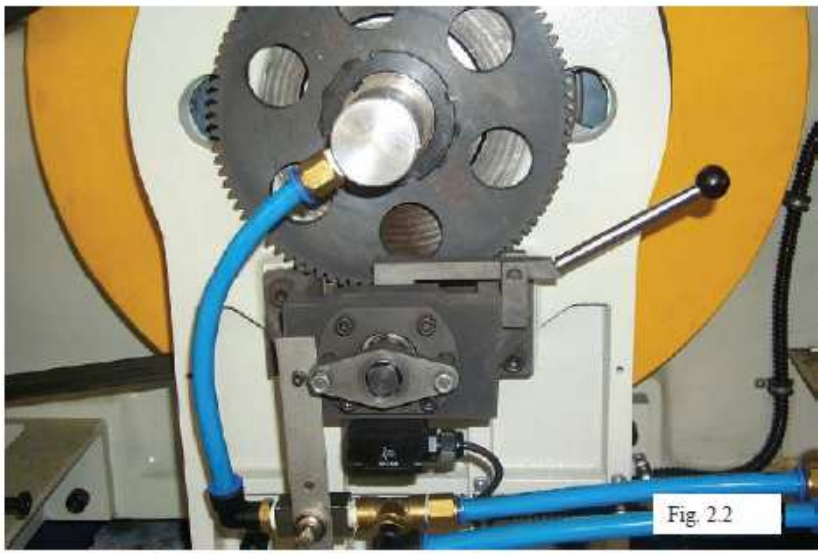


Fig. 2.2

Reduced gear and safety system for manual drive.


Fig. 2.3

Insert and push in the ratchet wrench at the end of the shaft.

Chapter 3

SHEET TRAVELING CHECK

3. SHEET TRAVELING CHECK

3.1 FUNCTIONS OF THE PHOTOCELLS (fig. 3.1)

3.1.1 Infeed Photocell (18)

The photocell is at the top, facing down.

Purpose:

To check if sheet arrives early. At machine degree 200□□205□, infeed photocell PH2 check to the sheet arrival, if sheet arrives, light 18 will be on, machine stops.

3.1.2 Front Lay Photocell (16)

Two fiber photocells at the bottom.

Purposes

1) To check the sheet arrival timing at front lay.

2) Just after the gripper bar starts moving, it checks whether the sheet has been carried away. If no sheet is detected, but the Infeed photocell(18) did detect the sheet, machine will stop.

3.1.3 Platen Outlet Photocell (12)

The photocell is at the top facing down.

Purposes

1) If photocell (16) has detected a sheet during the previous cycle, photocell (12) checks whether it has appeared at the platen outlet. The sheet is checked on a position from the front edge, at a previously chosen point, which is determined by the adjustable disk of program in PLC. The photocell detects whether a sheet has appeared completely from the diecutting section, from a position at the diecutting support table. If no sheet is detected, it shows the sheet has dropped in the diecutting section, then lamp 12 shall light up and the machine stop.

2) To check whether the space between the end of the sheet and the following gripper bar is free, which means that the sheet has not been dropped inside the stripper. In the event of a fault, lamp lights up and the machine stops.

3.1.4 Stripper Outlet Photocell (11)

The photocell is at the top, facing down.

Adjust the side position of the photocells to make sure it is located on the right spot.

Purposes

Identical to the platen outlet cell. Furthermore, these photocells provide the counting pulses

needed for the batch separation. In the event of a fault, lamp (11) light up and the machine stops.

3.1.5 Delivery Center Photocell

The three reflection photocell is mounted opposite to its reflector.

Purpose

1Check whether the paper drops normally into the delivery section.

2 Wrong setting of the counter may cause the excessively high paper piling.

In the event of a fault, lamp (10) lights up and the machine stops.

3.1.6 Delivery pile height photocell (10)

The reflection cell mounted opposite to their reflection.

Purpose

1) Check if there is any obstruction before the cylinder reaches out.

2) Check the rise and stop of the main lifting platform and the withdrawing of the cylinder.

3.1.7 Delivery counter/ejector auxiliary cylinder photocell (10A)

The reflection cell is mounted opposite to a reflector.

Purpose

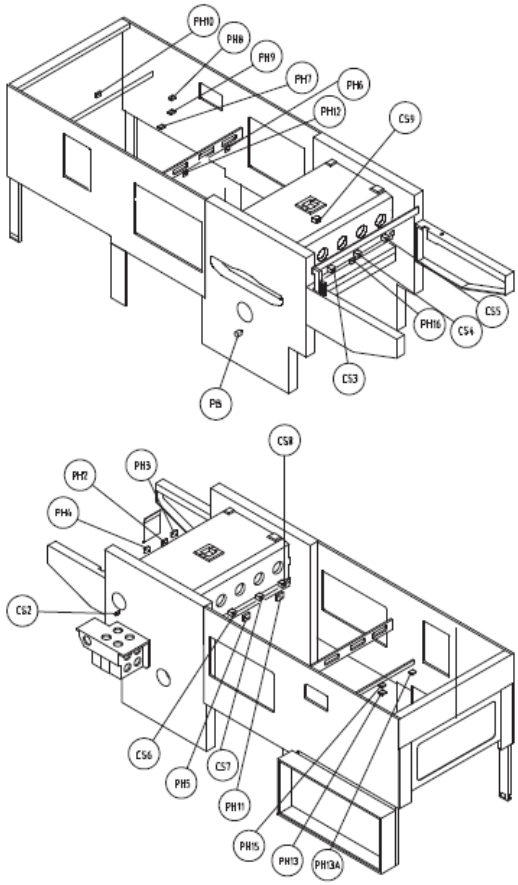
To check if it is clear before the cylinders come out. In case of a fault, lamp (10A) lights up and the machine stops. Furthermore, it checks the main pallet coming up arrival, stop the main pallet, then cylinders withdraw.

3.1.8 Delivery output cell (9)

The reflection cell is mounted opposite to a reflection.

Purpose

To check if the paper pile is ejected and pushed out to the delivery table, then stop the roller in turning and allow the main pallet to go up.



PHOTOCELL LOCATION DIAGRAM

APPENDICES 3

TARGET TEXT HUMAN VERSION

Capítulo 2

ACCIONAMIENTO PRINCIPAL

2. MECANISMO DE ACCIONAMIENTO MANUAL

2.1 DESCRIPCIÓN

La máquina funciona como un motor de Corriente Alterna de tres fases con control de invertido de velocidad.

El motor conduce el engranaje de tornillo perenne usando un volante y un freno/embrague neumático. El embrague o cuando el botón de marcha intermitente (27) es presionado o el botón de corrida continua (27) es presionado. El engranaje de tornillo perenne mueve la viga más baja del plato de prensa mediante de un mecanismo consistente de un volante de manivela y cabillas.

2.2 CONTROL DE VELOCIDAD

La velocidad del motor de la máquina es fijado mediante un inversor, controlado por un potenciómetro.

Potenciómetro en cero = velocidad mínima de la máquina, siendo esta 1200 ciclos/hora.

Potenciómetro a 10 = velocidad máxima de la máquina, siendo esta 4500 ciclos/hora.

Para incrementar la velocidad, coloque el potenciómetro en la posición que representa la velocidad deseada. Presione el pulsador (46), la luz del botón deberá encenderse; luego, con aceleración progresiva hasta el nivel fijado. Presionar el botón de nuevo para disminuir la velocidad hasta la velocidad de gateo.

2.3 ARRANQUE DEL MOTOR Y LA MÁQUINA

Luego de encender el motor principal, un temporizador de 10 segundos previene el embrague de la máquina siempre y cuando el motor y el volante no hayan alcanzado su velocidad tope.

Presionar una vez el botón de marcha intermitente o de marcha continua, solamente hace funcionar una alarma. Cuando la alarma se detiene, el botón tiene que ser presionado de nuevo para hacer arrancar la máquina.

2.4 SINCRONIZACIÓN GENERAL

La sincronización general, así como también la revisión de transporte operada por sensor, controlada por el PLC, mediante un codificador unido al mecanismo de accionamiento principal. Y la sincronización general de la temporización de transporte de láminas, puede ser ajustada usando un programa de LCD en un PLC (Controlador de lógica programable) mediante una pantalla de cristal líquido.

2.5 ARRANQUE

1. Encienda el interruptor principal

2. Gire el interruptor (41) para encender los circuitos de control

3. Encienda el motor principal con el pulsador (42)

4. Gire el interruptor (48) para accionar el sensor de detección de circuitos

5. Encienda la bomba de arranque a presión usando el interruptor (25)

6. Oprima el pulsador (47) para marcha intermitente o el pulsador (44) para corrida continua

2.6 MECANISMO DE ACCIONAMIENTO MANUAL

Accionamiento manual es necesario en los siguientes casos:

1. Para sacar el plato de su posición fija en la parte superior, si es que la marcha intermitente no es suficiente (ver 6.3)

2. Para restaurar el dispositivo de acoplamiento para límite el torque.

Proceda de la siguiente forma:

1. Detenga el motor principal No presione ningún detenido de emergencia, ya que al hacer esto, el pulsador para soltar el freno quedará no operativo.

2. Inserte y presione el trinquete al final del eje (figura 2.3). Coloque el interruptor de seguridad (39) en la posición 1. El embrague estará encendido. Opere el trinquete (ver figura 2.1)

Derecha: Corrida en Reversa.

Izquierda: Corrida hacia delante.

3. Coloque el interruptor (39) en la posición 0. Remueva la manivela de arranque del trinquete, jale la palanca hacia abajo y saque el engranaje para separar el eje y el mecanismo de accionamiento manual. Jale la palanca

hacia abajo para desenganchar el engranaje final del eje de accionamiento principal.

4. Para restaurar el dispositivo de acoplamiento para limitar el torque.

Cuando el movimiento de la barra de pinzas de cogida. forzado a disminuir o a detenerse debido a cualquier obstáculo y la fuerza contraria resultante es mayor al límite puesto para el torque, el Dispositivo de acoplamiento para limitar el torque se desconectado para prevenir que el sistema índice y el mecanismo de accionamiento principal sean afectados por el shock. En caso ocurrir, la luz del indicador 5 se encenderá para mostrar que se ha realizado el desenganche del embrague del dispositivo de acoplamiento para limitar el torque, y que el tiempo de ejecución para la barra de las pinzas de cogida con la máquina principales ha agotado. En este caso, el dispositivo de acoplamiento para limitar el torque deberá ser restaurado siguiendo las siguientes indicaciones:

a. Abra la puerta transparente de seguridad en la alimentación de entrada.

b. Encaje la llave en el reborde o pestaña del diente de la cadena de engranaje con la barra de extensión.

c. Gire la llave hacia abajo hasta que el dispositivo regrese a la posición de la llave. Al hacer esto se podrá apreciar un sonido como un “clic”. (ver figura 2.1)

d. Oprima el botón 49 (P1-7) y revise las luces indicadoras para constatar que este apagado. Si está apagado, el dispositivo limitante de torque queda restaurad. Si el pulsador 49 no funciona y las luces indicadoras están encendidas, se necesitará repetir los pasos del 1 al 3.

e. Saque la llave y cierre la puerta.

f. Manualmente opera la máquina según los pasos mencionados en 1,2,3 para comprobar si la temporización entre la barra de pinza y la máquina esta correcta. Si así lo es, la máquina está lista para efectuar otra corrida.

LIMITE EMBRAGUE PARA TORQUE

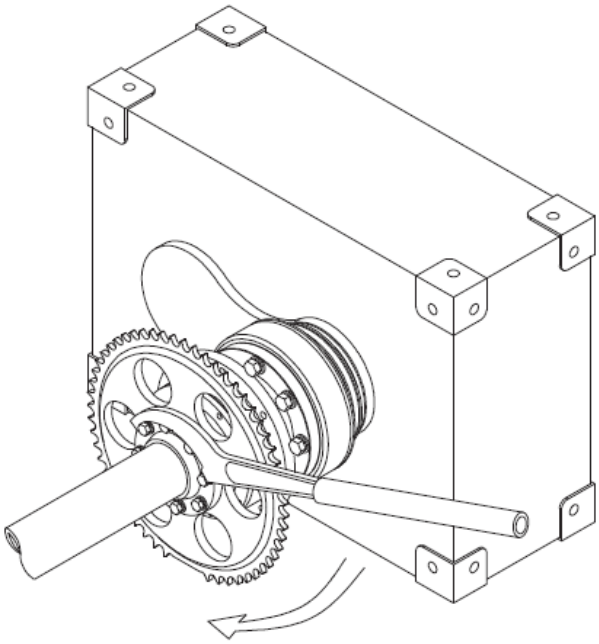


Fig. 2.1

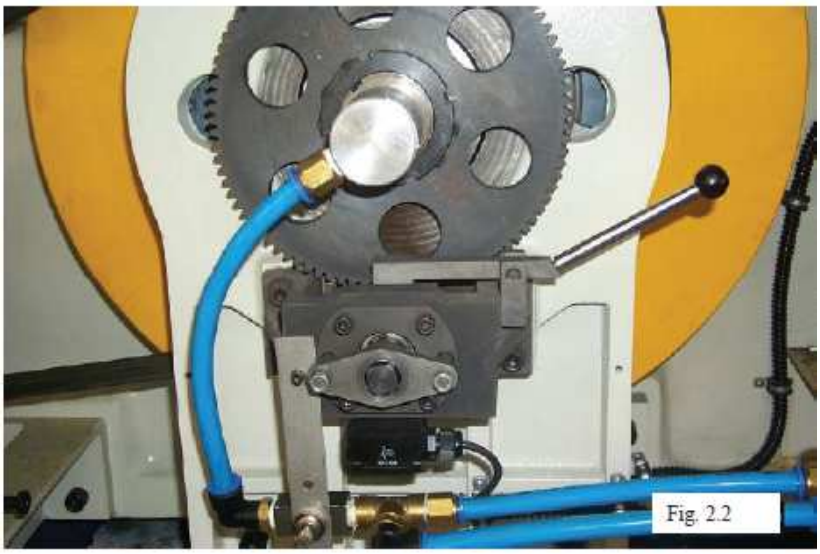


Fig. 2.2

Trinquete reducido y sistema de seguridad para el mecanismo de accionamiento manual


Fig. 2.3

Inserta y empuja la llave de trinquete al final del eje.

Capítulo 3

REVISIÓN DE LÁMINA TRANSPORTADORA

3. REVISIÓN DE LÁMINA TRANSPORTADORA

3.1 FUNCIONES DE LAS CÉLULAS FOTOELÉCTRICAS (figura 3.1)

3.1.1 células fotoeléctricas de alimentación de entrada (18)

La célula Fotoeléctrica está en la parte superior, apuntando hacia abajo.

Propósito:

Revisa si la lámina llega temprano. cuando la máquina está 200°-205° grados, la célula fotoeléctrica de alimentación de entrada PH2 revisa la llegada de la lámina, si la misma llega, la luz 18 se enciende, y la máquina se detiene.

3.1.2 Célula Fotoeléctrica del Front Lay (16)

Dos células fotoeléctricas de fibra en el fondo.

Propósitos:

1) Para revisar el tiempo de llegada de la lámina en el front Lay.

2) Justo después de la barra sujetadora comience a moverse, se revisa si es que la lámina ha sido llevada. Si no se llega a detectar lámina alguna, pero la Célula Fotoeléctrica de alimentación de entrada (18) sí la detectó. La máquina se detendrá.

3.1.3 Célula fotoeléctrica de la desembocadura del plato de prensa (12)

La célula fotoeléctrica está en la parte más alta y apuntando hacia abajo

Propósitos:

1) Si la célula fotoeléctrica (16) ha detectado la lámina durante ciclos previos, la Célula Fotoeléctrica (12) revisa si esta ha aparecido en la desembocadura del plato de prensa. La lámina es revisada en una posición desde el borde frontal, en un punto previamente elegido, el cual es determinado por el disco ajustable del programa en el PLC. La Célula Fotoeléctrica detecta si es que la lámina ha aparecido en su totalidad desde la sección de troquelado, desde una posición en la mesa de troqueladora de apoyo. Si ninguna lámina es detectada, se mostrará que la lámina ha caído en la sección de troquelado, entonces la lámpara 12 deberá encenderse y la máquina se detendrá.

2) Revisa el espacio entre el borde de la lámina y la siguiente barra sujetadora está disponible, lo que significa que la lámina no ha sido puesta dentro del removedor. En caso de falla, las lámparas se encenderán y la máquina se detendrá.

3.1.4 Célula Fotoeléctrica del extremo del Removedor de Desperdicios (11)

La Célula Fotoeléctrica está en la parte más alta, apuntando hacia abajo.

Ajustar la posición lateral de la Células Fotoeléctricas para asegurarse que esté puesta en el lugar indicado.

Propósitos:

Idéntico a la célula de la desembocadura del plato de prensa.

Además, estas Células Fotoeléctricas proveen el conteo de pulsos necesario para la separación de lotes. En caso de falla, la lámpara (11) se encenderá y la máquina se detendrá.

3.1.5 Célula Fotoeléctrica del centro de suministros

La Célula Fotoeléctrica de tres reflexiones está montada opuesta a su reflector.

Propósito:

1) Revisar si el papel cae con normalidad en la sección de suministro.

2) Una configuración errónea del contador puede causar un apilamiento excesivo de papel. En caso de falla, la lámpara (10) se encenderá y la máquina se detendrá.

3.1.6 Célula Fotoeléctrica de altura de apilado de suministro (10)

La célula de reflexión está montada opuesta a su reflexión

Propósito:

1) Revisa si existe alguna obstrucción antes de que el cilindro salga.

2) Revisa el alza y el detenido de la plataforma principal de elevación y el retiro del cilindro.

3.1.7 Célula Fotoeléctrica de contador/eyector de suministro del Cilindro Auxiliar (10A)

La célula de reflexión está montada opuesta a un reflector.

Propósito:

Revisar si está despejado antes de que el cilindro salga. En caso de falla, la lámpara (10A) se enciende y la máquina se detiene. Además, revisa la llegada de la plataforma principal, detiene la plataforma principal y luego, los cilindros se retiran.

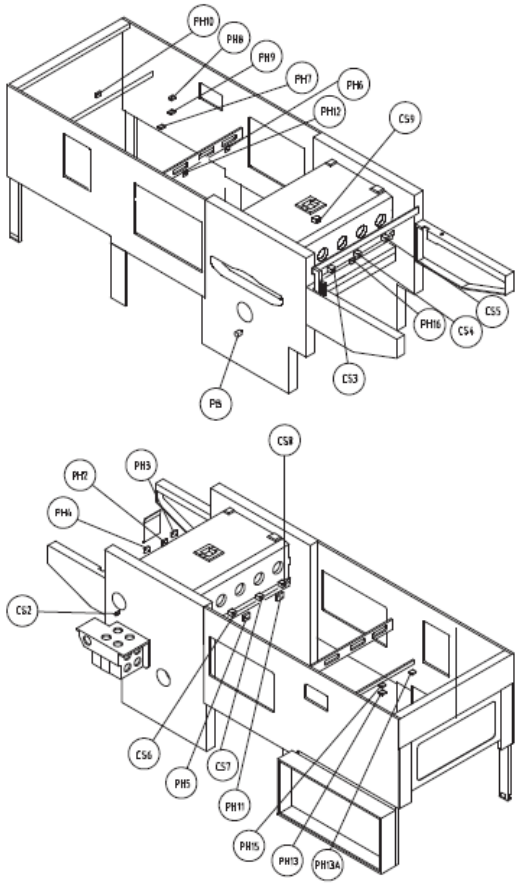
3.1.8 Célula de Suministro de salida (9)

La célula de reflexión está montada frente a una reflexión.

Propósito:

Revisa si la pila de papel es expulsada y empujada fuera de la mesa de suministro, luego detiene el giro hacia dentro del rodillo y permite a la plataforma principal subir.

DIAGRAMA DE UBICACIÓN DE CÉLULA FOTOELÉCTRICA


PH10
PH8
PH9
PH7
PH6
PH12
CS9
CS5
PH16
CS4
CS3
PB
CS8
PH3
PH2
PH4
CS2
CS6
CS7
PH5
PH11
PH15
PH13
PH13A

APPENDICES 4

TARGET TEXT MACHINE VERSION

Capítulo 2

ACCIONAMIENTO PRINCIPAL

2. MECANISMO DE ACCIONAMIENTO MANUAL

2. DISCO PRINCIPAL

2.1 DESCRIPCIÓN

La máquina es accionada por un motor trifásico de CA con control de velocidad del inversor.

El motor impulsa el tornillo sin fin a través de un volante y un embrague / freno neumático. El embrague funciona cuando se presiona el botón de avance lento (28) o el botón de funcionamiento continuo (27). El gusano mueve la viga inferior de la platina a través de un mecanismo que consiste en una manivela y alterna.

2.2 CONTROL DE VELOCIDAD

La velocidad del motor principal de la máquina se establece a través de un inversor, controlado por un potenciómetro.

Potenciómetro a cero = velocidad mínima de la máquina, es decir, 1200 ciclos / hora.

Potenciómetro a 10 = velocidad máxima de la máquina, es decir 4500 ciclos / hora.

Para aumentar la velocidad, coloque el potenciómetro en la posición que representa la velocidad deseada, presione el botón (46), la luz en el botón estará encendida, luego con aceleración progresiva hasta la velocidad establecida en los potenciómetros, para presionar el botón de nuevo para disminuir la velocidad hasta la velocidad de rastreo.

2.3 PUESTA EN MARCHA DEL MOTOR Y LA MÁQUINA

Después de encender el motor principal, un temporizador de 10 segundos evita el embrague de la máquina siempre que el motor y el volante no hayan alcanzado su velocidad máxima. El primer toque en el botón jog o de ejecución continua simplemente opera un hooter. Cuando el asta se detiene, el botón se debe volver a activar para encender la máquina.

2.4 SINCRONIZACIÓN GENERAL

La sincronización general y también la verificación de transferencia de hoja operada por sensores, controlados por PLC a través de un codificador conectado a la unidad principal, la sincronización general en el tiempo de transferencia de hoja puede ajustarse a través de LCD de programa en PLC a través de pantalla LCD.

2.5 PUESTA EN MARCHA

1. Encienda el interruptor principal.

2. Gire el interruptor de selección (41) para encender los circuitos de control.

3. Arranque el motor principal a través del botón pulsador (42).

4. Gire el interruptor de selección (48) para activar el circuito de detección del sensor.

5. Encienda la bomba de vacío de presión a través del interruptor (25).

6. Presione el botón (47) para hacer jog o (44) para ejecución continua

2.6 MANIOBRA MANUAL

El accionamiento manual es necesario en los siguientes casos:

1. Para liberar la platina de su posición de bloqueo superior, si el trote no es suficiente (ver 6.3).

2. Para restaurar el dispositivo de acoplamiento de límite de torque.

Proceder de la siguiente:

1. Detenga el motor principal. No presione una parada de emergencia porque el botón de liberación del freno no funcionará.

2. Inserte y empuje la llave de trinquete en el extremo del eje (figura 2.3). Gire el interruptor de seguridad (39) a 1 posición. Entonces el embrague estará encendido. Y opere la llave de trinquete. (ver figura 2.1)

Derecha: marcha atrás.

Izquierda: avance.

3. Gire el interruptor selector (39) a la posición 0. Quite la llave de trinquete, tire de la palanca hacia abajo y extráigala rueda dentada para separar el eje y el accionamiento manual.

Tire de la palanca hacia abajo para desembragar el extremo del eje a la unidad principal.

4. Para restaurar el dispositivo de acoplamiento de límite de torque.

Cuando el movimiento de la barra de agarre se ve forzado a disminuir o detenerse por cualquier obstáculo y la contrafuerza producida supera el límite de torque establecido, el Dispositivo de acoplamiento de límite de torque se desconectará para evitar que el índice y el sistema de transmisión principal relacionado se dañen por la sacudida. En caso de que así ocurriera, la luz indicadora 5 estará encendida y señalizando el desembrague del dispositivo de acoplamiento del límite de torque y la sincronización de la barra de la pinza con la máquina principal apagada. En este caso, el dispositivo de acoplamiento del límite de par necesita restaurarse siguiendo los siguientes procedimientos:

a. Abra la puerta de seguridad transparente en la alimentación.

segundo. Coloque la llave de recuperación en la brida de la rueda dentada de la cadena con la barra de extensión.

do. Gire la llave de recuperación hacia abajo hasta que el dispositivo se restaure en la posición de recuperación. En este momento se escuchará un clic. (ver figura 2.1)

re. Presione el botón 49 (P1-7) y verifique las luces indicadoras para ver si está apagado. En caso afirmativo, se restablece el dispositivo de límite de par, si el botón 49 no funciona y la luz indicadora está encendida, debe repetir los pasos anteriores (1-3).

mi. Retire la llave de recuperación y cierre la puerta.

F. Maneje manualmente la máquina según los pasos mencionados en 1,2,3 para verificar si el tiempo entre la barra de agarre y la máquina es correcto. En caso afirmativo, la máquina está lista para funcionar nuevamente.

EMBRAGUE DE LÍMITE DE PAR

Reducción de engranaje y sistema de seguridad para accionamiento manual.

Inserta y empuja la llave de trinquete en el extremo del eje.

Capítulo 3

CHEQUE CHEQUEO DE VIAJE

3. CHEQUE VIAJAR DE VIAJE

3.1 FUNCIONES DE LAS FOTOCÉLULAS (figura 3.1)

3.1.1 Fotocélula de alimentación (18)

La fotocélula está en la parte superior, hacia abajo.

Propósito:

Para verificar si la hoja llega temprano. En el grado de la máquina 200□□205□, la fotocélula de alimentación PH2 comprueba la llegada de la hoja, si llega la hoja, la luz 18 estará encendida, la máquina se detendrá.

3.1.2 Fotocélula Frontal (16)

Dos fotocélulas de fibra en la parte inferior.

Propósitos

1) Para verificar el tiempo de llegada de la hoja en la parte frontal.

2) Justo después de que la barra de sujeción comienza a moverse, verifica si la hoja se ha llevado. Si no se detecta ninguna hoja, pero la fotocélula de alimentación (18) detectó la hoja, la máquina se detendrá.

3.1.3 Fotocélula de salida de platina (12)

La fotocélula está en la parte superior hacia abajo.

Propósitos

1) Si la fotocélula (16) ha detectado una lámina durante el ciclo anterior, la fotocélula (12) verifica si ha aparecido en la salida de la platina. La hoja se verifica en una posición desde el borde frontal, en un punto previamente elegido, que está determinado por el disco ajustable del programa en el PLC. La fotocélula detecta si una hoja ha aparecido por completo desde la sección de troquelado, desde una posición en la mesa de soporte de troquelado. Si no se detecta ninguna hoja, muestra que la hoja ha caído en la sección de troquelado, entonces la lámpara 12 se encenderá y la máquina se detendrá.

2) Para comprobar si el espacio entre el final de la hoja y la siguiente barra de pinzas es libre, lo que significa que la hoja no se ha caído dentro del separador. En caso de falla, la lámpara se enciende y la máquina se detiene.

3.1.4 Fotocélula de salida del extractor (11)

La fotocélula está en la parte superior, hacia abajo.

Ajuste la posición lateral de las fotocélulas para asegurarse de que esté ubicada en el lugar correcto.

Propósitos

Idéntico a la celda de salida de la platina. Además, estas fotocélulas proporcionan los pulsos de conteo necesario para la separación de lotes. En caso de falla, la lámpara (11) se enciende y la máquina se detiene.

3.1.5 Fotocélula del centro de entrega

La fotocélula de reflexión tres está montada frente a su reflector.

Propósito

1Compruebe si el papel cae normalmente en la sección de entrega.

2 Un ajuste incorrecto del contador puede causar una acumulación excesiva de papel.

En caso de falla, la lámpara (10) se enciende y la máquina se detiene.

3.1.6 Fotocélula de altura de la pila de entrega (10)

La celda de reflexión montada frente a su reflejo.

Propósito

1) Compruebe si hay alguna obstrucción antes de que el cilindro se extienda.

2) Verifique la subida y la parada de la plataforma de elevación principal y la extracción del cilindro.

3.1.7 Fotocélula de cilindro auxiliar de contador de suministro / eyector (10A)

La celda de reflexión está montada frente a un reflector.

Propósito

Para verificar si está despejado antes de que salgan los cilindros. En caso de falla, la lámpara (10A) se enciende y la máquina se detiene. Además, comprueba el palet principal que llega al llegar, detiene el palet principal y luego los cilindros se retiran.

3.1.8 Celda de salida de entrega (9)

La celda de reflexión está montada frente a un reflejo.

Propósito

Para verificar si la pila de papel es expulsada y expulsada a la mesa de entrega, pare el rodillo girando y deje que la plataforma principal suba.

DIAGRAMA DE UBICACIÓN DE LAS FOTOCÉLULAS

DECLARACIÓN Y AUTORIZACIÓN

Yo, **Castro Egas, Susana María**, con C.C: # **0922503925** autor/a del trabajo de titulación: **Analysis of the use of MT among professional translators and translator trainees of the School of English Language at UCSG.** previo a la obtención del título de **Licenciada en Lengua Inglesa con mención en traducción** en la Universidad Católica de Santiago de Guayaquil.

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REPOSITORIO NACIONAL EN CIENCIA Y TECNOLOGÍA

FICHA DE REGISTRO DE TESIS/TRABAJO DE TITULACIÓN

TÍTULO Y SUBTÍTULO:	**Analysis of the use of MT among professional translators and translator trainees of the School of English Language at UCSG.**		
AUTOR(ES)	**Susana María, Castro Egas**		
REVISOR(ES)/TUTOR(ES)	**Sara Ines Rivadeneira Enriquez**		
INSTITUCIÓN:	Universidad Católica de Santiago de Guayaquil		
FACULTAD:	**Facultad de Artes y Humanidades**		
CARRERA:	**Licenciatura en Lengua Inglesa con Mención en Traducción**		
TITULO OBTENIDO:	**Licenciada en Lengua Inglesa con Mención en Traducción**		
FECHA DE PUBLICACIÓN:	**17** de **Septiembre** de **2018**	**No. DE PÁGINAS:**	**94 páginas**
ÁREAS TEMÁTICAS:	**Linguistics, Translation, Editing**		
PALABRAS CLAVES/ KEYWORDS:	**Machine Translation, editing, rendering, quality, software, product.**		

RESUMEN/ABSTRACT (150-250 palabras):

This project explains the concept of Machine Translation and contrasts it with similar concepts. It provides details regarding the different types of machine translation, their origins and development through time and real-life use among translators as part of their translation processes. Different types of editing are presented, processes are defined and matched with the correspondent type of translation process. Further research was conducted to determine the most popular machine translation software among translation professionals and students, the frequency of use, the fields in which the use of MT is more commonplace, the purpose of using it, and the benefits of working with the software compared to full human translation processes. This study also provides a comparative evaluation of a product rendered through machine translation analyzing the quality of such product. It identifies the type of errors that most frequently occur as well as the ratings of each sentence rendered. This allowed to point out the aspects that need a strong focus in the post-editing process so that the final product is enhanced and validated.

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