

INOVATRI LOCAÇÕES, COMÉRCIO E SERVIÇOS LTDA

CNPJ: 14.830.472/0001-86 | I.E.: 286.462.533.110

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Máquina de Ranhura Elétrica 8-24pol

Descrição do Produto: A POLIGROOVER 8-24 é uma máquina elétrica hidráulica de ranhura com matrizes(rolos), projetada especificamente para ranhurar tubos de aço cabono de 8" a 24" (diâmetro externo de $\Phi 219$ mm a $\Phi 630$ mm).

Características principais: Hidráulico potente e limitador de curso, que garantem maior precisão e eficiência na profundidade das ranhuras.

Operação por motoredutor de alta performance, combinada com o estabilizador de tubos para garantir alta qualidade de ranhura e produtividade.

O equipamento não possui pedal elétrico, a operação é direta através do botão liga-desliga.

Suporte para tubos hidráulico dobrável, facilitando a operação e reduzindo o esforço físico do operador na obra.

Máquina de ranhura 8-24Pol.:



Matrizes:



Suporte hidráulico para tubos:



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Especificações Técnicas:

Especificação	Detalhe
Capacidade de ranhura em tubo	8"-24" (Ø219 mm – Ø630 mm), SCH40
Espessura máx. da parede	13 mm
Velocidade de saída	15 rpm
Peso bruto (G.W.)	340 kg
Dimensões da máquina	102 x 75 x 147 cm

Acessórios inclusos (para tubo SCH40)

Código dos acessórios	Descrição	Peso bruto (kg)
SP080400	Suporte para tubos	55
SP080143A	Matriz inferior 8"-12" (Ø219-Ø325)	9
SP080143B	Matriz inferior 14"-16" (Ø377-Ø426)	8,675
SP080143C	Matriz inferior 18"-24" (Ø480-Ø630)	8,515
SP080139A	Matriz superior 8"-20" (Ø219-Ø530)	1,29
SP080139B	Matriz superior 24" (Ø630)	1,32

Parâmetros do Motor

Fase	Tensão (V)	Frequência (Hz)
Trifásico	220V/380V/415V/440V	50/60 Hz

Considerações finais:

A POLIGROOVER 8-24 é a solução ideal para quem busca eficiência, robustez e precisão em ranhuras de grandes diâmetros. Seu desempenho confiável, aliado à praticidade operacional e ao conjunto completo de acessórios, garante produtividade e segurança para aplicações em obras, montagens industriais e serviços de campo.

Entre em contato com a **INOVATRI** e solicite uma cotação ou mais informações técnicas. Nossa equipe está pronta para atender você com agilidade e compromisso.

Table of Contents

I.	Major applications and scope	2
II.	Technological Parameters	2
III.	Major Parts	3
IV.	Driving System	3
V.	Electric System	4
VI.	Operations and Adjustments	4
VII.	Precautions	9
VIII.	Maintenance	12
IX.	Troubleshooting	13
X.	Grooving machine's exploded view	15

I. Major applications and scope

This machine is applicable for forming circular channel at the end of seamless steel tubing, galvanized pipes, plastic-lining pipes and stainless steel pipes etc, to facilitate the mounting of circular pipe clamps. It's an ideal tool for construction industry and pipeline construction sectors.

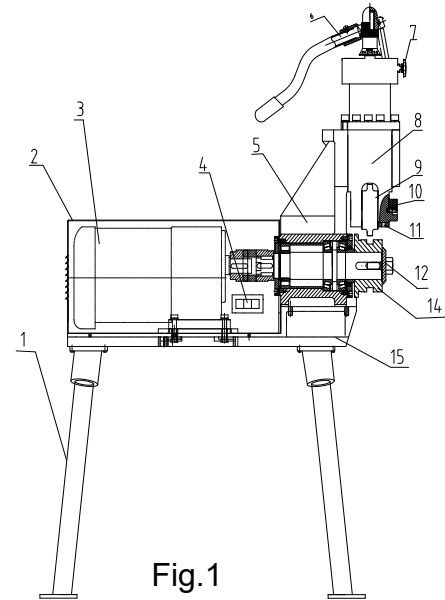
II. Technological Parameters

Max. diameter allowed for pipes to be channeled.....	630mm
Min. diameter allowed for pipes to be channeled.....	219mm
Max. wall thickness allowed for pipes to be channeled.....	12mm
Max. working pressure.....	10000kg
Max. oil cylinder pressure	35Mpa
Capacity of oil tank.....	200ml
Speed.....	15 rpm
Electric motor	Single-phase, 1500W
Overall dimensions (WxDxH)	1010mmx810mmx1400mm
Net weight.....	284kg

III. Major parts

Fig.1 TWG-IVA Roll Grooving Machine

- | | |
|-----------------------------|---------------------------------|
| 1. Support Foot | 9. Pinch roller |
| 2. Electric Motor Housing | 10. Pinch roller shaft |
| 3. Reduction Motor | 11. Fastening screw M10 |
| 4. Switch | 12. Fastening screw for spindle |
| 5. Unit Head | 13. Knurl wheel |
| 6. Handle | 14. Main shaft |
| 7. Relief Valve | 15. Block |
| 8. Pinch Roller guide shaft | |



IV. Driving System

The major moving unit of this machine consists of a rotating spindle directly driven by a reduction motor through cross slide coupling, resulting in a reduced loss of mechanic power. The feeding movement is realized by manual hydraulic system.

V. Electric System

Refer to **Fig.2** for the Electric Circuit Diagram of this Grooving Machine. Consists of an electric motor, a clockwise/ anti-clockwise switch and cables. Turning clockwise, anticlockwise and stop are controlled by the switch. An electric motor is the only load. The power supply shall agree with the requirements of motor: three phase. Sound earthing of ground wire (black) is required prior to starting the machine.

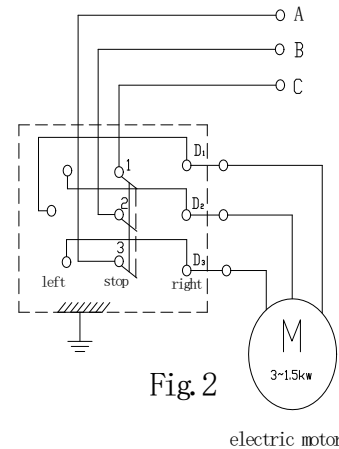


Fig.2

electric motor

Fig.2

VI. Operation and Adjustment

Let the machine run idle to check whether it's normal. Place the steel tubes on the knurl wheel and hydraulic bracket. Turn the handle (**refer to Fig. 3**) to vary the height of hydraulic bracket so that the steel tube and spindle are parallel. The bracket shall be placed at a position equal to 3/4 of the length of whole tube. At the beginning of operation, let the steel tube rotate without further action to observe whether the tube will move outward. If it moves, you shall either vary the direction and height of bracket or toggle the clockwise/anti-clockwise switch to change the rotating direction of motor to keep the tube unmoved

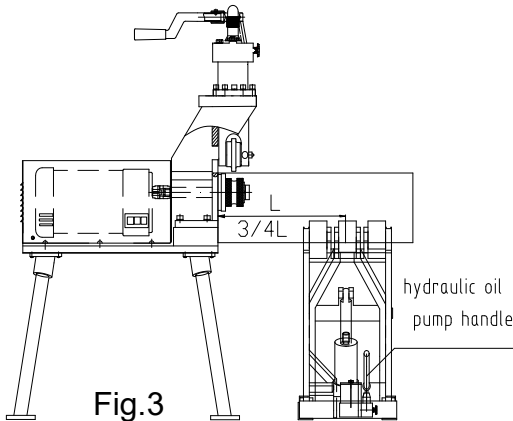


Fig.3

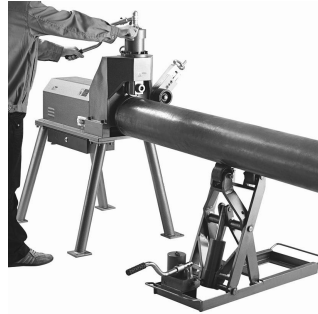


Fig.4

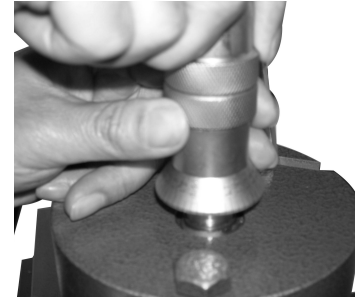


Fig.5

Before applying pressure, turn the idler pulley shelf of handle, let idler pulley touch steel pipe slowly, then fasten the fastening nut for idler pulley (**Fig.4**). Tighten the relief valve. Turn the handle at a faster speed at the beginning to form the initial channel. And then, you shall turn slowly. The steel tube shall be rotated at least one turn for each applying of pressure. Limit and depth adjustment of channel. First loosen the limit nut. Measure and cut the first channel followed by fastening for limit nut (**Fig.5**). For the following channels, it means the desired channeling depth has been attained when the force to apply to the handle increases, and you shall stop turning the handle to let the pinch roller roll at the original position for 1-2 turns before opening the relief valve (**Fig. 6**) to allow

the pinch roller leave the tube. The pinch roller holder will return to its highest position automatically. The above procedure shall occur while the machine is kept on. Remove the filler plug to add hydraulic oil. (loosen the relief valve.) **(Fig. 6).** Unscrew the discharge screw before discharging all the dirt used oil.

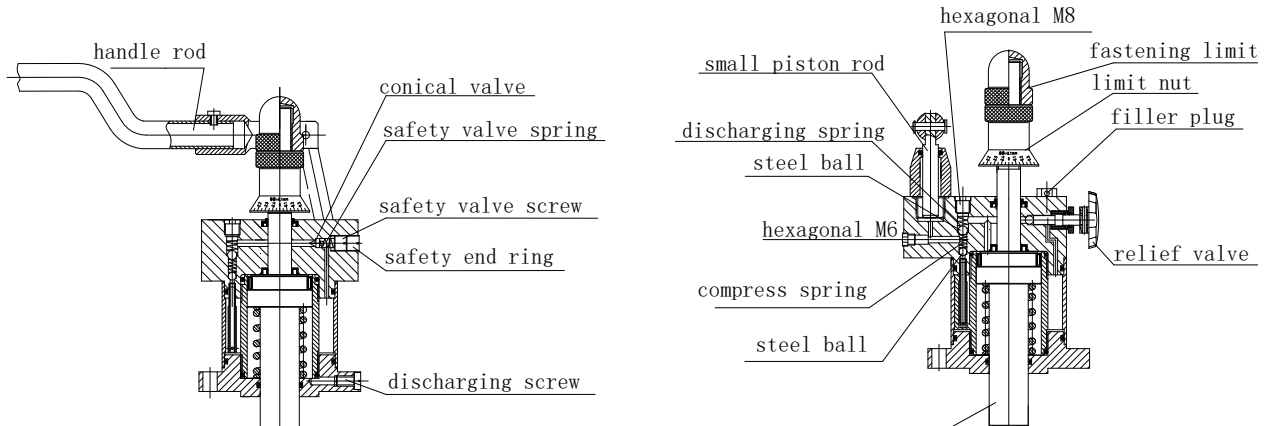


Fig.6

If you want to remove the whole oil cylinder from the unit head, first you shall move pinch roller shaft and pinch roller down, then let pinch roller guide shaft to the highest position, loosen ten screws M10 of pump base, lift up the whole oil pump with upright, you can see oil cylinder and pinch roller guide shaft matched of T model groove, let oil pump followed open-ended direction of T model groove and move out. So the whole of oil pump shall divorce from unit head **(See Fig.7- 9)** .

When the replacement of pinch roller, you shall return the pinch roller guide shaft to the highest position **(See Fig.8)** while holding pinch roller with your hand, pull pinch roller shaft out (whether the needles in axletree are complete or not, to make sure that none of them can be lacked), replace the new pinch roller, similar to the above, replace matched knurl wheel **(refer to table 1)**, remove locking screw for the spindle.



Fig.7



Fig.8



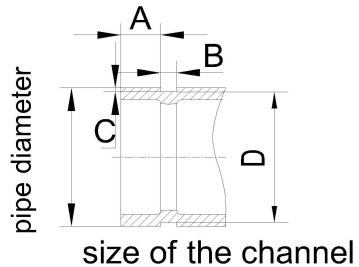
Fig.9



Fig.10

(Table 1)

Model of Pinch Roller	Model of Knurl Wheel	Nominal Pipe Dia. (inch)	Actual Pipe Dia. (mm)	A $\pm$ 0.5 (mm)	B $\pm$ 0.5 (mm)	C $\pm$ 0.5 (mm)	Diameter of Groove Bottom D	
							Max	Min
Small-Size pinch roller	Small knurl wheel	8"	219	19.05	11.91	2.34	214.40	213.76
		10"	273	19.05	11.91	2.39	268.28	267.59
		12"	325	19.05	11.91	2.77	318.29	317.53
	Medium sized knurl wheel	14"	377	23.83	11.91	2.94	371.12	370.36
		16"	426	23.83	11.91	3.27	419.16	418.57
	Large knurl wheel	18"	480	25.40	11.91	3.45	473.10	472.20
		20"	530	25.40	11.91	3.73	522.53	521.64
	Large pinch roller	24"	630	25.40	13.46	4.37	621.26	620.37



In case of steel tubes of large diameter to be channeled, the tube may swing violently in the process of channeling due to irregularity or poor quality of steel tube, and a poor channeling or even failure may be resulted. To solve this problem, we particularly supply an optional jockey roller which can be moved to touch the steel tube by turning the handwheel for the purpose of reduced vibration (See Fig.11).

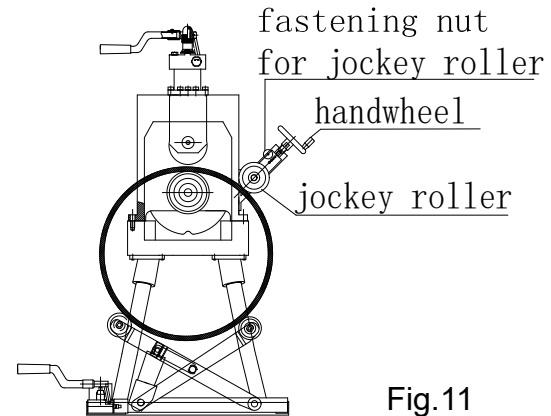


Fig.11

VII. Precautions

The operator is required to read this Manual in details to be familiar with the structure, buttons , handles, driving and lubricating systems of the machine prior to operation. Never operate the machine until you have got to know all the information related to operation and safety.



1. Safety Mark

Electric Shock

The mark indicates risk of electric shock and requires the operator to be

careful.



Mechanical injury

This mark indicates the operator may be injured by mechanical parts.



Warning!

This mark indicates the operator may have risks of injury and even death due to improper operation.



Notice !

This mark indicates contents which the operator shall observe. Otherwise, unexpected results or even human injury may be produced.

2. General Notices

2.1 The operators shall observe in-house safety rules .

2.2 The machine shall be operated by a dedicated person who are well-trained , familiar with the User's Manual and fully aware of the functions of each part .

2.3 Before starting the machine, you shall make sure all the handles, buttons and protective facilities are at their intended places, and all the humans are sufficiently far away from the machine.

2.4 When the machine is running, don't touch any moving parts. Don't attempt to remove debris or shoot troubles until the machine comes to stop.

2.5 Refill the oil as instructed in the Manual before starting the machine. Make sure the hydraulic oil cylinder is full. **(20# oil in the summer and 10 # oil in the winter).**

2.6 The grease nozzles in the front of pinch roller shaft and on the power head shall be refilled with grease each shift respectively, after removing the dusts around the orifice.

3. Safety protective measures on electric control system

An earthing wire and a proper fuse are required in the power line. The voltage and frequency of motor shall be consistent with the power supply.; Overload running shall be avoided.



4. Miscellaneous

4.1 Use appropriate lifting apparatus in mounting and dismounting to avoid damaging the machine.



4.2 The knurl wheels shall be properly selected according to Table 1 in a bid to obtain optimized channeling results.

4.3 The steel tubing to be channeled shall have smooth and flat end face.

- 4.4 During maintenance of the machine, the needle roller bearings shall be lubricated with grease before re-assembling.
- 4.5 In case the machine rocks when channeling a large tubing, be sure to equip with guide wheels and anchor bolts to fix the four legs and stand to the ground(**Fig.12**).

viii. Maintenance

1. Check whether the moving units and the machine can work normally or not. Check whether the hydraulic is sufficient. If not, fill it. After each use, clean the working surface and coat with anti-rust oil. Add lubrication grease to all the joints of moving units.
2. The grease nozzle in front of the pinch roller shaft shall be lubricated each shift. Various moving units shall be lubricated at least 1-2 times each shift.
3. The replaced knurl wheel and pinch roller (with the needles on the needle bearing, fastened with butter, lined with plastic cover) shall be properly kept after being coated with anti-rust oil for next use.
4. Use hydraulic oil of proper brand number as instructed in the Manual. Remove all the dusts near the filler aperture before adding oil.



Fig.12

IX. Troubleshooting

Problem	Causes	Solutions
No pressure in the oil cylinder. No action resulted from turning the handle.	1. Insufficient hydraulic oil.	Add hydraulic oil
	2. Dirt oil blocks the hole.	Replace the hydraulic oil (See Fig. 6)
	3. Leakage occurs to the check valve	Remove the screws and spring. Knock the small steel balls lightly to force out the air-tight surface. (See Fig.6)
The piston will move forward when the handle is forced downward, but it will return when the handle is released.	1. Dirt oil blocks the hole.	Replace the hydraulic oil (See Fig. 6)
	2. Leakage occurs to the check valve	Remove the screws and spring. Knock the small steel balls lightly to force out the airtight surface. (See Fig. 6)
	3. Leakage occurs to other position	Trace the problem and correct.

Insufficient oil cylinder pressure	The spring of safety valve breaks down	Replace the safety valve. (See Fig. 6)
The tube escapes	1. Improper direction and height of bracket.	Vary the direction and height of bracket.
	2. Improper direction of steel tube	Toggle the clock-wise/anti-clockwise switch to change the rotation direction of spindle
	3. Rough end face of steel tube	Grind the end face.