### HOW TO INSTALLATE MONTERO'S GLAND PACKINGS

Remove all old packing, cleaning stuffing box and shaft.

2. Choose the most suitable packing for each service and choose also the correct cross-section of packing.



3. The best way to cut packing rings is to cut them on mandrel. Wind packing around properly sized mandrel, or use MONTERO'S CALIBRATED PACKING RING CUTTER.

- 4. Carefully insert each ring into the stuffing box (one ring of packing at a time). and press one carefully. Stagger joints of subsequent rings a minimum of 90 degrees.
- 5. After the last ring is installed, take up gland bolts finger tight or very slightly snugged up, don't jam the packing by excessive gland loading. Check lantern ring, if used, correct positioning relative to port.
- 6. Adjust packing (pumps) Allow packing to leak freelly starting up a newly packed pump. Take it up gradually on the gland as the packing seats, until leakage is reduced to a tolerable level.
- 7. Adjust packing (VALVES)

  Consult packing manufacturer and/or plant engeniering departament for guidance on torque specifications or percent of compression.
  - 7.1. Torque gland bolts to approximately 30% of full torque.7.2. Cycle the valve a number of times and apply full torque while valve is closed stroke position.
  - 7.3. Repeat step 2 three or four times.

TECHNICAL DATA	LENGTHS		
TECHNICAL DATA	inches	milímeters	
20	1/8	3	
18	5/32	4	
	3/16	5	
16		6	
	1/4	6,35	
14	5/16	8	
12	3/8	9.5	
		10	
10	7/16	- 11	
8		12	
	1/2	12,7	
6	9/16	14	
1,900 0,11		15	
4 50 R.P.M	5/8	16	
	11/16	18	
2	3/4	19	
ø Shaft m/m	13/16	20	
20 40 60 80 100 120 140	7/8	22	
	i	25	

PRESSURE						
I psi = 0.07 kg / cm <sup>2</sup> I bar = I kg / cm <sup>2</sup> = 14.22 psi						
TEMPERATU	JRE					
°C= - °F - 32 1.8						
°F = 32 + (°C	x 1.8)					
SPEED						
I meter/second = 195 feet/minute						
TOLERANCE	(+/-)	"	mn			
<1/4	<6,35	1/64	0,			
(>1/4-<1")	6,35 a 25,4	1/32	0,			
> "	>25,4	1/16	Ι,			

### TYPES OF BRAIDING









TOLERANCE WEIGHT +/-10%

## **OTHER SEALING PRODUCTS**



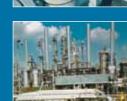




# **PACKINGS** FOR PUMPS **AND VALVES**













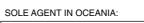




# MONTERO FyE, S.A.

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 ${\color{blue} \text{MONTERO FYE, S.A. guarantees the quality of all their products not being responsible for the inadequate} \\$ 





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### VALVE STEM SEALING RING SETS

### **SET OF RINGS MG 420+AGK**

Sets of pure expanded mineral graphite rings combined with MG-420 packing rings at each end give improved valve sealing over a wide range of pressures and temperatures. A range of grade is available: industrial, nuclear in both cases, with corrosion inhibitor GRAFOIL' GTB, GTJ and GTX marca GRAFTECH. with a variety of sections and densities. These sets give high value to valve manufacturers.

VALVE STEM SEALING SYSTEM FOR LOW FUGITIVE EMISIONS

Ecograflex sets are die formed rings sets made of pure mineral graphite rings from pure exfoliated tape with corrosion inhibitor, combining different packings giving types of sealing system sets.

Ecograflex's geometry and density design have been developed to solve fugitive emissions problems, on a wide range of chemical products, even with fire safe restrictions and in cryogenic conditions.

NEW Ecograflex X1000R combines GRAFOIL© GTX (Shell MESC SPE 85/203) shaped rings with NEW MG-1000 R packing rings to offer low fugitive emission service at high temperature and pressures. (TA LUFT

Ecograflex 420 combines GRAFOIL® shaped rings with MG-420 rings to offer low fugitive emission service Ecograftex 780 R combines GRAFOIL© shaped rings with MG-780 R rings to give low emissions service

in cryogenic and high temperature conditions (fire safe test certified packing as per API 589:607). Ecograflex 250 combines GRAFOIL® shaped rings with MF-250 rings for use on chemical services such as



# MG-974 P(Bar) 150 75 40

1-13

Compound packing made of special mineral yarns with high lubrication and chemical resistance, reinforced on the corners with a tough high abrasion resistance phenol yarn. This packing has high lubricating and mechanical resistance properties due to its diagonal braiding and the addition of synthetic yarns on the corners. It is suitable for use in damaged shafts because of its excellent elasticity and adaptability to the stuffing box. MG-974 has been designed for centrifugal pump applications, dynamic equipment and even for vacuum equipment. This packing is specially recommended for applications when emission control is necessary.

UPPLIED							
mm.	Kgs. box	mt/box ap rox.	Type of braiding				
6 8 10 12 14 16 19 22 25	0,5   	12 17 11 6,5 10 7,5 8,5 6,5 5,5	3 tracks 4 tracks				

MF-250						
	禹	F	<b>§</b>			
°C)		270				
Bar)	100	100	50			
m/sg)	1 2 15					
1	0-14					

Manufactured from pure PTFE filaments and impregnated with PTFE and a special lubricant. This packing is recommended for service where high resistance to chemical attack is required (FDA certificate).

### SUPPLIED mm. Kgs. box mt/box ap rox. lype or braiding

1 1 2 2 2 4 4 5 5	33 25 15 19 13 9 12 10 9 7	2 tracks 3 tracks 4 tracks
3	4	IL
		1 25 1 15 2 19 2 13 2 9 4 12

MS-315					
	Ā	曱	<b>\$</b>		
T(°C)	270				
P(Bar)	250	200	80		
V(m/sg)	1,5	2	15		
ρΗ	2-12				

This packing is produced from aramid filaments treated with PTFE and other lubricants. Because the packing has a high abrasion resistance, it is important that the installation instructions are followed carefully to prevent damage to the pump shaft.

### SUPPLIED

mm.	Kgs. box	mt/box ap rox.	Type of braiding
4 5 6		40 28 20	2 tracks
8 10	2 2 2 2	23,5 15,5	3 tracks
12 14 16		10 16 11	Ī
19 22	4 5 5	10 8	4 tracks
25	5	6	l I

300	,		MI	-26
F	<b>\$</b>		禹	F
270		T(°C)		270
125	70	P(Bar)	250	250
3	9	V(m/sg)	2	3

A high quality phenolic filament, impregnated with PTFE and special lubricants, is braided to give a packing good flexibility and adaptability with a low coefficient of friction. It performs well in the presence of abrasive materials.

### SUPPLIED

禹

V(m/sg) 2

box	mt/box	Type of			ap rux.
DUX	ap rox.	Type of braiding	4	l ı	33
	50	Γ	5	1	28
	33	2 tracks	6		16,5
	16	[, ,	8	2	19
2	16 25	3 tracks	10	2	13
2	22	Γ	12	2	10
2	11		14	4	14
1	16		16	4	11
1	12,5	4 tracks	19	5	10
5	12		22 25	5	8
5	12,5 12 9		25	5	5,
	7	П			

# MF-940

3 20

14.5

1-13

	禹
T(°C)	
P(Bar)	200
V(m/sg)	2
рН	

This packing is braided with corner yarns made of synthetic filament impregnated with PTFE and core yarns made of PTFE filaments with built in graphite. The synthetic filaments confer a good mechanical resistance without the pump shaft being endangered; and the PTFE with graphite ensure an excellent chemical resistance and heat dissipation. A very flexible packing with universal applications.

## mm. Kgs. box mt/box Type o

This packing is produced from

high quality PTFE filaments

with high graphite content. It

chemical resistance of PTF

SUPPLIED

with the high heat dissipation

28	2 tracks	with t	univers
16,5 19	3 tracks	SUPF	LIED
13 10		mm	. Kgs. b
14 11	4 tracks	6 8	l 2
10 8		10	2
8 5,5	L	12 14	2 2 2 4
		16	4
		19	5

	禹	F	\$
°C)		270	
(Bar)	200	200	20
(m/sg)	2	3	20
Н		0-14	

This packing is manufactured from PTFE yarns having a high content of encapsulated graphite. This packing can be considered of universal application except for strong oxidants like nitric acid, chromic, nitro hydrochloric acid and alkali materials. This packing is suitable for most types of stuffing boxes in rotary and alternative equipment and in valves in general.

### SUPPLIED

ox mt/box	Type of braiding
37 25 15,5 19 13 8,5 12,5 10 8,5 7,5	2 tracks 3 tracks 4 tracks

2-14 A combination of a core of PTFE filaments with high graphite content and corners of aramid filaments gives a packing which is suitable for operation at high pressure and high

speed simultaneously

MS-360

P(Bar) 250 200 80

### SUPPLIED

mm.	Kgs. box	mt/box ap rox.	Type of braiding
6 8 10 12 14 16 19 22 25	1 2 2 2 4 4 5 5	16 23 14,5 9 13 11 10 7,5 6,5	3 tracks 4 tracks

Gland packing made of pure expanded mineral graphite of the highest quality, with corrosion inhibitor. The advantages of pure expanded minera graphite are its flexibility, compressibility and incombustibility; it is self-lubricant, compatible with most fluids and in offers unlimited storage time. It is also available in a version finished with PTFE impregnation, Ref. MG 780 **P**, as blocking agent, used in many services in different equipment

MG-780

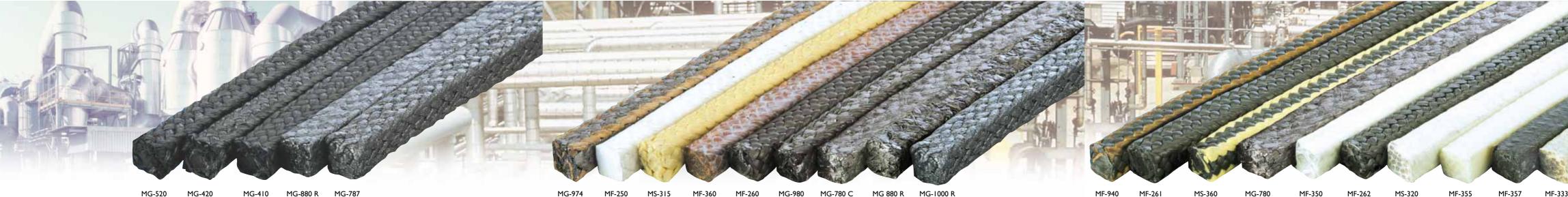
P(Bar) 310 50 20

0-14

### including pumps in multiple

SUPPLIED

			5 6	!	2!
юх	mt/box ap rox.	Type of braiding	8	2	13
5 5 5	24 15 11 12 8 6 8	2 tracks 3 tracks	10 12 14 16 19 22 25	2 2 4 4 5 5	12 8
	6 7	4 tracks			



## MG-520

	_		
	禹	F	<b>\$</b>
T(°C)		700	
P(Bar)	200	100	50
V(m/sg)	ı	3	30
рΗ	0-14		

This packing manufactured pure graphite, coated with graphite powder. Due to the high purity of the graphite this packing can work at the highest speeds and temperatures

### SUPPLIED

mm.	Kgs. box	mt/box ap rox.	Type of braiding
4 5	0,5 0,5	33 25	2 tracks
6 8	0,5 I	16,5 20	3 tracks
10	!	12	Ī
12 14	2	8 12,5	
16 19	2	9	4 tracks
22	2 2 3 3	7,5 6	
25	3	6	L

## MG-420 P(Bar) 200 100 50 V(m/sg) 1,5 2 25 pH 0-14 0-14

A packing produced from continuous filaments of high purity carbon, coated with graphite powder, it has a high thermal conductivity and can operate at high temperatures and speeds. It is also available with incone

# PTFE Ref. MG 420 P.

	INSS. DUX	ap rox.	braiding	
4	0,5	33	2 tracks	
5	0,5	25	L	
4 5 6 8	0,5	16,5	3 tracks	
		20	[	
10		12		
12		8		
14	2 2 3 3 3	12,5 9	4 tracks	
16	2			
19	3	10_		
22	3	7,5 6	ll	
25	3	6	l L	

ı	2 tracks	30112125					
	3 tracks	mm.	Kgs. box	mt/box ap rox.	Type braid		
	4 tracks	4 5 6 8 10 12 14 16 19 22 25	0,5 0,5 0,5 1 1 2 2 3 3	33 25 12,5 18 12 8 12,5 9,5 10 7,5	2 trad		

# MG-410 V(m/sg) 1,5 1,5 20

0-14 Packing manufactured from high quality carbon fibres and with a special graphite powder impregnation. This packing resists absorption, avoiding penetration of the fluid in the packing core, and has excellent lasticity properties and

adaptability to the stuffing box.

This braid is used in centrifugal

pumps, boiler feed pumps,

agitators, ball valves, rod

wire Ref. MG-420 I or

(spindle), globe

m	m.	Kgs. box	mt/box ap rox.	Type of braiding		
	4 5 6	0,5 0,5	36 22	2 tracks		
		0,5	16	3 tracks		
	8		17	ļĻ		
- 1		!	11	ll		
- 13	2		8	ll		
1.	4	2	11,5	4 tracks		
- 1	6	2	9	T U acks		
- 1	9	3	9,5			
2	2	3	7			
2	5	3	5,5	L		

# MG-780 R

	禹	曱	<b>\$</b>		
T(°C)		-200 a +650			
P(Bar)	310				
V(m/sg)					
рН		0-14			

This packing is prepared using pure, expanded, mineral graphite with inconel wire core for work at high pressures. It combines the exceptional properties of graphite with simplicity of use and opportunity to minimise stocks.

MG-780 R has got corrosion inhibitor and Fire Safe test approval (API 607: 589). Also available with special high temperature impregnation. Ref MG 780

111111.	INGS. DOX	ap rox.
4	0,5	20
5	0,5	15
4 5 6 8	0,5	11,5
		15,5
10		10
12	1	7
14	2	10
16	2	8,5 7
19	3	7
20	2 2 3 3	6
25	3	6 4

### MG-787

Packing made of pure expanded

	禹	曱	\$
T(°C)		-200 a +65	50
P(Bar)	350		
V(m/sg)			
рН		0-14	

mineral graphite yarns with corrosion inhibitor. In order to obtain a greater pressure resistance for use in valves, each strand is reinforced with a wire mesh cover, and braided by the diagonal system, giving excellent mechanical properties and reducing the possibility of braid extrusions. This packing can work at the highest pressures and temperatures and it can be used in all kind of valves.

### SUPPLIED

ım.	Kgs. box	mt/box ap rox.	Type o braidin
4	0,5	22	2 tracks
5 6	0,5 0,5	14 10	3 tracks
6 8	l i	- 11	Ļ
0		7	
2		5	
4	2	8	4 tracks
6 9	2	6	ruacks
9	3	6,5	
2	2 2 3 3	5	
5	3	4	IL .

	_		_
	禹	闸	8
T(°C)		600	
P(Bar)	200	75	:
V(m/sg)	1,5	2	3
ρΗ		0-14	

corrosion inhibitor in core and sides The incorporation of the carbon filament reinforcement at the corners enables this new universal packing to be applied in both static and dynamic applications, where the special thermal and chemical properties and the low friction coefficient of graphite are needed. It is also available with industrial quality grade Ref. MG-970 and with inconel insertion

Kgs. box	mt/box ap rox.	Type of braiding
0,5	22	2 tracks
0,5 0,5	14 10	3 tracks
ĺ	- 11	Ļ
	7 5	
2	8	4 tracks
2	6	T U acks
3	6,5	
3	5	

	Ā	曱	<b>\$</b>
T(°C)		600	
P(Bar)	200	75	35
V(m/sg)	1,5	2	30
рΗ		0-14	

MG-980

of high purity carbon filaments in corners and pure expanded mineral graphite yarns with a

This packing is manufactured from a combination

### SUPPLIED

Kgs. box	mt/box ap rox.	Type of braiding
0,5 I	12 14,5	3 tracks
İ	12,5	ľ
2	11 8,5	
2 2 3 3	9,5	4 tracks
3	7,5 5,5	

MG-780 C

Pii	0-14	
	g made of pure expande al graphite (99.85%) wi	
	tic carbon yarn insértic	
in ord	er to widen the range	(
use of	the expanded miner	7
graphi	te, not only in valves b	ι
in eau	inments with contrifue	٠,

and alternative movements too. SUPPLIED

		ap rox.	braiding
4	0,5	24	2 tracks
5	0,5	15	lΓ
4 5 6 8	0,5	11,5	3 tracks
8	- 1	12	<u>L</u>
10		8	
12	1	5,5	
14	2	8,5	4 tracks
16	2	6,5	I d'acks
19	2 2 3	7	
22	3	6,5 4	
25	3	4	L

# MG-880 R

	_		
	善	F	<b>\$</b>
T(°C)		-200 a +650	0
P(Bar)	310		
V(m/sg)			
рН		0-14	

This packing is prepared using

pure, expanded, mineral graphite nuclear grade with a Inconel wire core for work at high pressures. It combines the exceptional properties of graphite with simplicity of use and opportunity to minimise stocks.

# SUPPLIED

	11801201	ap rox.	braidir
4	0,5	20	2 track
5	0,5	15	lΓ
6	0,5	11,5	3 track
8	1	15,5	ΙĿ
10	1	10	ΙГ
12	1	7	
14	2	10	4 track
16	2	8,5	Tuack
19		7	
		6	
25	3	4	L
	6 8 10 12 14 16	5 0,5 6 0,5 8 1 10 1 12 1 14 2 16 2 19 3 20 3	4 0,5 20 5 0,5 11,5 6 0,5 11,5,5 10 1 10 12 1 10 14 2 10 16 2 8,5 19 3 7 20 3 6

# MG-1000 R

	禹	曱	<b>§</b>
(°C)		650	
(Bar)	450		
(m/sg)	2		
Н		0-14	

Gland packing made of high purity expanded graphite material (C-content > 99 %) over knitted with Inconel wire. It has got a special high temperature lubrication for high emperature and corrosion inhibitor as well. It is recommended for high pressure applications due its wire content and it has an excellent sealing effect and it fulfils fugitive emission and TA-Luft requirements.

Due to its special combination of materials it can be used with expanded graphite rings, in set of rings, or also alone.

valves specially designed for fugitive emission applications : TA luft in process.

## MF-262

	禹	F	<b>%</b>
T(°C)		250	
P(Bar)	150	150	15
V(m/sg)	2	3	15
-U		0.14	

Packing made of aramid spun yarn impregnated with PTFE This packing is manufactured with braided yarns of PTFE and graphite. PTFE yarns give packing is a reliable and the packing a good resistance to chemical attack. Packing suitable for all kinds of stuffing boxes in alternative and rotary equipment, and valves in general.

SUPPLIED

		up . oz.	
4 5 6 8 10 12 14 16 19 22	1 1 2 2 2 4 4 5 5	45 29 20 22 14 10 15 12 10 8	2 tracks 3 tracks 4 tracks
22 25	5 5	8 6	

### economic option for several types of equipment, with the possibility of making a graphite finished version, Ref. MS-320 G.

SUPPLIED

and Jubricants, MS 320

mm. Kgs. box mt/box ap rox. Type of braiding

10 15 12

pH 2-12

MS-320

working conditions with a great flexibility and It is also avilable with graphite impregnation Ref. MF-357.

MF-355

Packing manufactured from

white synthetic filament that

is impregnated with P.T.F.E.

The finished braid is given a

final, external treatment with

P.T.F.E. and special lubricants

in order to make easier the

start. Packing for moderate

mm.	Kgs. box	mt/box ap rox.	Type o braidin
4 5	ļ	44 27	2 tracks
6	į	20	3 tracks
8 10	2 2	23 14,5	ŀ
12 14	2 4	10,5 15	I
16	4 5	12	4 tracks
19 22	5	10,5 8	
25	5	6	IL

# 再 甲 纷 P(Bar) 100 60 V(m/sg) 1 2 This packing is manufactured

MF-333

using high quality natural fibre yarns with PTFE. The finished braid is given a final, external treatment with PTFE to give a packing with a low coefficient of friction, which has flexibility and is suitable for use in moderate working conditions.

### **SUPPLIED**

		up i ox.	Dialullig
4 5 6 8 10 12 14 16 19 20 25	1 1 2 2 2 2 4 4 5 5	44 28 20 23 15 10 16 12 11	2 tracks 3 tracks Capa s/

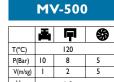
## 再 甲 纷 P(Bar) 100 80 50 2-12

MF-350

This packing is manufactured from "E" glass filament yarns individually lubricated and impregnated with PTFE.After braiding, it is externally coated with PTFE. This is an asbestos / PTFE packings.

### SUPPLIED mm. Kgs. box mt/box ap rox. Type o

4 5 6 8	I	28,5	2 tracks
5	- 1	25	
6	ı	13	Γ
	2	17,5	
10	2	12	3 tracks
12	2 2 4 4 5 5	12 8,5	
14	4	12,5	L
16 19	4	12,5 9,5 8 6 5	Γ
19	5	8	4 tracks
22 25	5	6	T ti acks
25	5	5	
			_



T(°C)	120		
P(Bar)	10	8	5
V(m/sg)	1	2	5
рН	6-8		
This packing is manufacture with cotton yarns, impregnate both inside and outside wit tallow. It is manufactured by the			

solid braiding system. It is intended for general use in hydraulic services both for pumps and valves at low requirements applications.

SUF	PL	IEC

mm.	Kgs. box	mt/box ap rox.	Type of braiding
4	5	250	Г
4 5 6	5	166	
6	5 5 5	111	
8	5	62	1
10	5	40	Capa s/ Capa
12		27	Capa
14	10	41	
16	10	31	
19	10	21	
22	10	16	
25	10	13	