



LIMITED

FIRST QUALITY BRAND

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SUGGESTIONS FOR TECHNICAL AND PURCHASE DEPARTMENTS

A quick choice of the tools suggested on board for both new ships and the ones already in service

DRY CARGO BOATS:

DECK DEPARTMENT (not equipped with air line on the deck)

- electric chipping hammer
- electric deck scaling machine for large surfaces
- electric derrick for provisions and stores from 500 to 2.000 kgs
- electric fans – several types

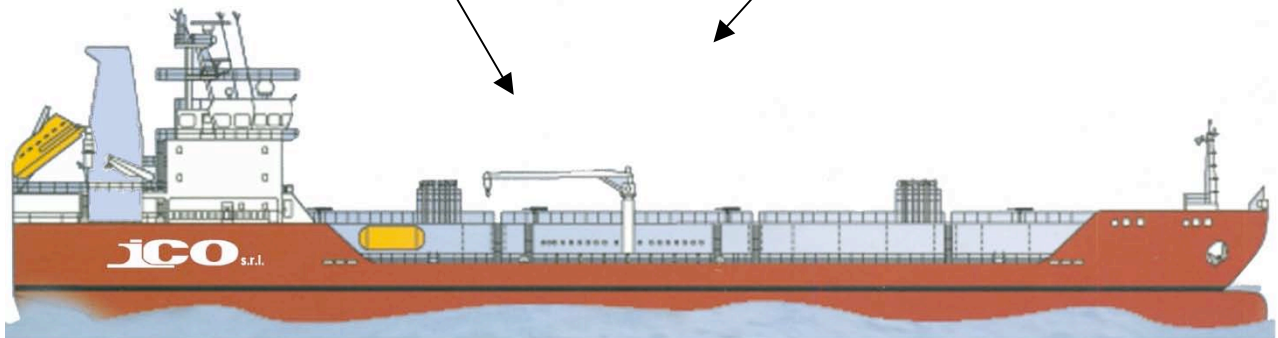
DECK DEPARTMENT (equipped with air line on deck)

- pneumatic 1,3,5-piston hammer
- pneumatic deck scaling machine for large surfaces
- pneumatic angle, vertical, horizontal grinding machine
- pneumatic sump pump turbine type
- pneumatic diaphragm pump – several types
- pneumatic sandblasting machine
- pneumatic needle chisel
- pneumatic chisel
- pneumatic or electric winch
- pneumatic fans – several types
- high pressure cleaning device
- garbage compactor

TANKER SHIP

DECK DEPARTMENT

- pneumatic 1,3,5-piston hammer
- pneumatic deck scaling machine for large surfaces
- pneumatic mucking winch from 80 to 300 kgs
- pneumatic spark-proof lamp
- pneumatic sandblasting machine
- pneumatic sump pump - turbine type
- pneumatic angle, vertical, horizontal grinding machine
- pneumatic crane for provisions
- fans – several types
- high pressure cleaning device
- garbage compactor



ENGINE DEPARTMENT

- pneumatic transfer pump
- pneumatic diaphragm pump – several types
- pneumatic pipe-cleaning equipment
- pneumatic bolt driver for different kinds of nuts and bolts
- pneumatic angle, vertical, horizontal grinding machine
- pneumatic drill

ENGINE DEPARTMENT

- pneumatic transfer pump
- pneumatic diaphragm pump – several types
- pneumatic pipe-cleaning equipment
- pneumatic bolt driver for different kinds of nuts and bolts
- pneumatic angle, vertical, horizontal grinding machine
- pneumatic drill
- pneumatic universal chisel

SCALING PISTON HAMMER

These hammers can be equipped with pistons in hardened steel, spark-proof bronze or tungsten carbide.

1 PISTON HAMMER

IMPA CODE 59.03.82

I.CO. CODE 800-0 X2 NEW TYPE



3 PISTON HAMMER

IMPA CODE 59.03.83

I.CO. CODE 797-0 NEW TYPE



7 PISTON HAMMER

IMPA CODE: 59.03.- -

I.CO. CODE: 16100-7

| IMPA CODE | | 59.03.82 | 59.03.83 | 59.03.- - |
|---------------------|-------|------------------|------------|-----------|
| ICO CODE | | 800-0 X2 N.T. | 797-0 N.T. | 16000- |
| Pistons | N. | 1 | 3 | 7 |
| Head Width | mm | 96 | 98 | 215 |
| Scaling Width | mm | 25 | 80 | 170 |
| Strikes per min | N. | 5700 | 7000 | 2000 |
| Feeding pressure | Bar | 5 | 5 | 6-8 |
| Air consumption | l/min | 350 | 700 | 1400 |
| Air inlet connector | Diam | ½" | ½" | ¾" |
| Air hose | Diam | 13mm | 13mm | 19mm |
| Weight | Kg | 2,5 | 3,7 | 48,0 |

FOR 1 PISTON HAMMER

IMPA CODE 59.03.87

I.CO. CODE 800-2 N.T.



FOR 3 PISTON HAMMER

IMPA CODE 59.03.88

I.CO. CODE 797-2 WIDIA



FOR 7 PISTON HAMMER

IMPA CODE 59.03.8-

I.CO. CODE 16000-39

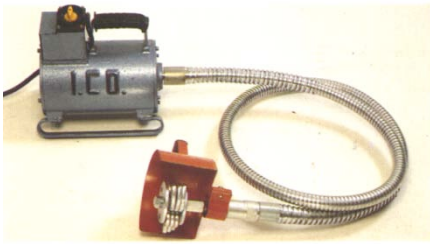


CHIPPING HAMMER "ICOFLEX"

The main feature of this machine is scraping rust and paints from any metal surface. It can also be transformed into a versatile tool able to perforate, cut and grind. There are many kinds of tools, according to the type of work, all interchangeable on the flexible shaft.

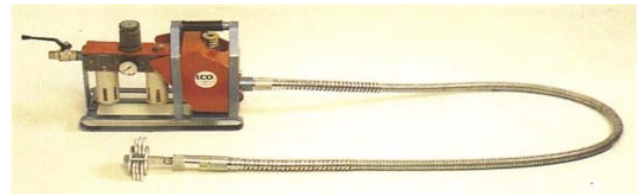
ELECTRIC type CHIPPING HAMMER

IMPA CODE: 59.12.43-44-11-12
I.CO. CODE 2240-S1 / 2100-S1 / 2240-TRF-S1



PNEUMATIC CHIPPING HAMMER

IMPA CODE: 59.12.82
I.CO. CODE 12550



| TYPE | PNEUMATIC | ELECTRIC AC Single phase | ELECTRIC AC Three phase | ELECTRIC DC | Technical Features: |
|------------------------|-----------|-----------------------------|----------------------------|-------------|---|
| IMPA CODE | 59.12.82 | 59.12.44 | 59.12.43 | 59.12.- - | COMPLETE CHIPPING HAMMER - TYPE 'S1' EITHER ELECTRIC OR PNEUMATIC - IS COMPOSED OF: |
| ICO CODE | 12550 | 2240-S1 | 2240-TRF-S1 | 2100-S1 | |
| Power [hp] | 1,5 | 1,0 | 1,0 | 0,8 | <ul style="list-style-type: none"> - N.1 ELECTRIC/PNEUMATIC MOTOR - N.1 FLEXIBLE SHAFT - N.1 THREE-CUTTER CHIPPING HEAD - N.1 NINE-HAMMER CHIPPING HEAD - N.6 PINS FOR ABOVE - N.1 SAFETY GUARD |
| Speed [g/min] | 3000 | 2800 | 2800 | 2700 | |
| Voltage [V] | - | 110/220 | 24/48/110/ 220/380/440 | 110/220 | |
| Feeding Pressure [Bar] | 7 | - | - | - | |
| Frequency [Hz] | - | 50/60 | 50/60 | - | NOTE: Different types of tools, adaptors for flexible shaft and spare parts for JAPANESE, ENGLISH, GERMAN and AMERICAN chipping hammers are available. |
| Weight [Kg] | 28 | 15 | 14 | 23 | |

FLEXIBLE SHAFT AND SPARE PARTS

Flexible shaft made of either galvanized steel or rubber coated sheath, standard length 2,5 m - tool connection 5/8" W - special lengths and connections on request.

COMPLETE FLEXIBLE SHAFT:

IMPA CODE I.CO. CODE

59.19.21 2220-ZN WITH GALVANIZED STEEL SHEATHING



HANDLE SPINDLE

IMPA CODE 59.19.23
I.CO. CODE 2220-3



HANDLE

IMPA CODE 59.19.24
I.CO. CODE 2220MN



CHIPPING HAMMER "ICOFLEX" - ACCESSORIES

SIX HAMMER HEAD
IMPA CODE 59.19.31
I.CO. CODE 2000-5M



NINE HAMMER HEAD
ISSA CODE 59.19.32
I.CO. CODE 2000-2M



TWELVE HAMMER HEAD
IMPA CODE 59.19.33
I.CO. CODE 2000-1M



THREE CUTTERS HEAD
IMPA CODE 59.19.34
I.CO. CODE 2000-5F



SIX CUTTERS HEAD
IMPA CODE 59.19.35
I.CO. CODE 2000-4F



I.CO. STEEL HAMMER
IMPA CODE 59.19.36
I.CO. CODE 2000-19



3 HOLE FLANGE
IMPA CODE 59.19.37
I.CO. CODE 2000-23



6 HOLE FLANGE
IMPA CODE 59.19.38
I.CO. CODE 2000-28



I.CO. STEEL CUTTER
IMPA CODE 59.19.39
I.CO. CODE 2000-24



PIVOT FOR HAMMERS
IMPA CODE 59.19.40
I.CO. CODE 2000-26



PIVOT FOR CUTTERS
IMPA CODE 59.19.41
I.CO. CODE 2000-22



**SPINDLE FOR WIRE BRUSH AND
CUP WIRE BRUSH**
IMPA CODE 59.19.42
I.CO. CODE 2000-29-C / T



SPINDLE FOR THREE CUTTER HEAD
IMPA CODE 59.19.43
I.CO. CODE 2000-21



SPINDLE FOR NINE HAMMER HEAD
IMPA CODE 59.19.44
I.CO. CODE 2000-25



**DOUBLE SPINDLE CENTRE PIN FOR 12 HAMMER &
DOUBLE WHEEL**
IMPA CODE 59.19.45
I.CO. CODE 2000-27



CHIPPING HAMMER "ICOFLEX" - ACCESSORIES

DOUBLE WIRE BRUSH

IMPA CODE 59.19.46
IMPA CODE 59.19.47
I.CO. CODE 2000-62R or S
2000-6/2R: TWISTED WIRE or
2000-6/2S: SINGLE WIRE



WIRE CUP BRUSH

IMPA CODE 59.19.48
IMPA CODE 59.19.49
I.CO. CODE 2000-7R or S
2000-7R: TWISTED WIRE or
2000-7S: SINGLE WIRE



WIRE WHEEL BRUSH

IMPA CODE 59.19.50 (R)
IMPA CODE 59.19.51 (S)
I.CO. CODE 2000-6R or S
2000-6R: TWISTED WIRE or
2000-6S: SINGLE WIRE



SPINDLE WITH CONNECTION

ISSA CODE 55.100.40
I.CO. CODE 2000-8



SAFETY GUARD

IMPA CODE 59.19.54
I.CO. CODE 2000-11



CIRCULAR SAW

IMPA CODE 59.19.55
I.CO. CODE 2000-10



EMERY WHEEL

ISSA CODE 55.100.41
I.CO. CODE 2000-9



LARGE SURFACES RUST REMOVAL MACHINES

This machine is designed for efficient removal of rust, paint and old covering from large surfaces. It's easy to control by the operator, thus improving quality and quantity of work. According to the need, there are many different types of completely interchangeable tools that can be applied to the standard drum. It's also possible to apply steel-wire, brass or nylon brushes etc.

ELECTRIC

IMPA CODE 59.19.65-66-68-69
I.CO. CODE 11500-0-200MM or 0-300MM

PNEUMATIC

IMPA CODE 59.19.61-63
I.CO. CODE 11400-0-200 or 0-300MM



| TYPE | | IMPA CODE | I.CO. CODE | IMPA CODE | I.CO. CODE |
|--|------|------------------|--------------|------------------|-------------|
| Pneumatic | | 59.19.61 | 11400-0-200 | 59.19.62 | 11400-0-300 |
| Electric | | 59.19.65 | 11500-0-200M | 59.19.66 | 11500-0-300 |
| CHARACTERISTICS: | | | | | |
| Scaling width | mm | 200 | | 300 | |
| min. drum/wall distance | mm | 45 | | 45 | |
| Efficiency | m²/h | 70 | | 100 | |
| drum speed | rpm | 1700 | | 1700 | |
| connection for dust suction diam. | mm | 40 | | 40 | |
| CHARACTERISTCS OF THE MOTOR: | | | | | |
| - PNEUMATIC MOTOR | | | | | |
| Air feeding press. | Bar | 6 | | 6 | |
| Consumption abt 120cbm/hr | HP | 5 | | 5 | |
| - ELECTRIC MOTOR KW 2.2 | | | | | |
| A.C. - Single phase or threephase—Hz 50/60 | | | | | |
| V. 110/220/380/440 * | HP | 3 | | 3 | |
| - Pneumatic | Kg | 65 | | 70 | |
| - Electric | Kg | 43 | | 48 | |
| Overall dimensions | mm | 355 x 1200 h.950 | | 455 x 1200 h.950 | |
| * different voltages on request. | | | | | |

RUST REMOVAL MACHINES - ACCESSORIES

HOW TO ORDER:

| IMPA CODE | I.CO. CODE | |
|-----------|--------------|--|
| 59.19.61 | 11400-0-200 | PNEUMATIC VERSION 200 mm |
| 59.19.62 | 11400-0-300 | PNEUMATIC VERSION 300 mm |
| 59.19.64 | 11500-0-200M | ELECTRIC VERSION 200 mm (specify power supply) |
| 59.19.65 | 11500-0-300M | ELECTRIC VERSION 300 mm (specify power supply) |

SPARE PARTS FOR LARGE SURFACE RUST REMOVER

STAR CUTTER DRUM

IMPA CODE I.CO. CODE

59.19.71 11700-0-S-200 200mm DRUM

59.19.72 11750-0-S-300 300mm DRUM

TUNGSTEN CARBIDE DRUM

IMPA CODE I.CO. CODE

59.19.73 11700-0-W-200 200mm DRUM

59.19.74 11750-0-W-300 300mm DRUM



STAR CUTTER



T.CARBIDE CUTTER



| IMPA CODE | I.CO. CODE | STEEL WIRE BRUSH |
|-----------|-------------|----------------------------|
| 59.19.77 | 11708-2-200 | 200mmBRUSH - TWISTED WIRE |
| 59.19.78 | 11708-3-200 | 200mm BRUSH - SIMPLE WIRE |
| 59.19.79 | 11758-2-300 | 300mm BRUSH - TWISTED WIRE |
| 59.19.80 | 11758-3-300 | 300mm BRUSH - SIMPLE WIRE |



| Item n° | Cutter or brush type | Application |
|----------------------------|---|--|
| 11700-7 | Star cutters 3/32" – 2 mm | Removal of old coatings, paints, oil and contaminations on factory floors, and so on, cleaning of ship decks and for ferry boat garages. |
| 11700-9 | Hexagonal tungsten carbide cutters ¼" (6 mm) | Same as above with possibility for roughening of concrete and asphalt, removal of toothed layers and old coatings. Extremely wear-resistant, designed for heavy duty operations. |
| 11700-11 | Special hexagonal tungsten carbide cutters 1" (22 mm) | For removal of thin rust layers, thermoplastic and cold plastic markings on asphalt and concrete, for milling - off floor layers based on thermoplastic. |
| 11700-13 (*) | Steel hammers mm.7 | Removal of thick layers of rust on irregular surfaces. |
| 11708-2-200 11758-2-300 | Twisted wire brushes | Removal of paint and rust deposits on sheets, cleaning and smoothing of surfaces after cutter treatment. |
| 11708-3-200 11758-3-300 | Single wire brushes | Removal of paint and rust deposits on sheets, polishing. |

(*) Use the centering bushes

These are indicative suggestions : the best choice is done with testes.

RUST REMOVAL MACHINES - ACCESSORIES

SPECIFICATION OF SPARE PARTS

DRUM BODY

IMPA CODE: 59.19.81-82
I.CO. CODE: 117001 & 11750-1



Flange

IMPA CODE: 59.19.83
I.CO. CODE 11700-2



Star cutter

IMPA CODE: 59.19.89
I.CO. CODE 11700-7



Tungsten carbide cutter

IMPA CODE: 59.19.90
I.CO. CODE 11700-9



Washer

IMPA CODE: 59.19.88
I.CO. CODE 11700-6



Steel Cutters

IMPA CODE: 59.19.92
I.CO. CODE 2000-24



Steel hammer

IMPA CODE: 59.19.91
I.CO. CODE 11700-13



Bush for hammer

IMPA CODE: 59.19.93
I.CO. CODE 11700-13B



| IMPA CODE | I.CO. CODE | PART NAME |
|-----------|------------|--|
| 59.19.81 | 11700-1 | Drum body 200 mm |
| 59.19.82 | 11750-1 | Drum body 300 mm |
| 59.19.83 | 11700-2 | Flange |
| 59.19.84 | 11700-3 | Cutter shaft (for 200 mm) |
| 59.19.85 | 11750-3 | Cutter shaft (for 300 mm) |
| 59.19.86 | 11700-4 | Screw for flange |
| 59.19.87 | 11700-5 | Elastic washer |
| 59.19.88 | 11700-6 | Washer |
| 59.19.89 | 11700-7 | Star cutter |
| 59.19.90 | 11700-9 | Tungsten carbide cutter |
| 59.19.__ | 11700-11 | Tungsten carbide widia cutter (on request) |
| 59.19.91 | 11700-13 | Steel hammer |



| DESCRIPTION | IMPA CODE | I.CO. CODE | Number for drum 200 mm | | Number for drum 300 mm | |
|--------------------|-----------|------------|------------------------|---------|------------------------|---------|
| | | | cutters | washers | cutters | washers |
| Star cutters | 59.19.89 | 11700-7 | 280 | 24 | 450 | 32 |
| Carbide cutters | 59.19.90 | 11700-9 | 68 | 80 | 108 | 148 |
| Steel cutters | 59.19.92 | 2000-24 | 38 | 10 | 60 | 32 |
| Hammers | 59.19.91 | 11120-13 | 56 | // | 104 | // |
| Bushes for hammers | 59.19.93 | 11700-13B | // | 12 | // | 16 |

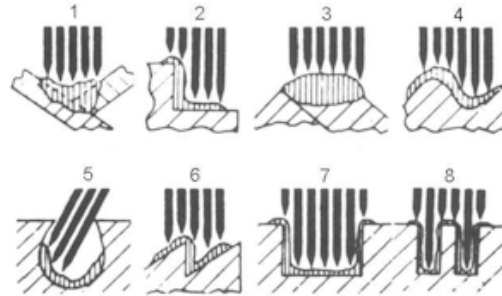
PNEUMATIC RATTLING NEEDLE CHISEL

Equipment suitable for chipping rust, old paints, welding, casting scales and various foulings from irregular, angular or bent surfaces. Each needle is independent from the other, thus permitting a perfect adherence to all irregular surfaces, with guarantee of very accurate cleaning. Due to the possibility of using spark proof needles, the machine is suitable for use in environments with risk of explosion.

PNEUMATIC RATTLING NEEDLE CHISEL
IMPA CODE: 59.05- -
ICO CODE 12200-0 Type 'A'/24



VARIOUS KINDS OF APPLICATION OF THE PNEUMATIC NEEDLE CHISEL, FOR SCALING ON IRREGULAR SURFACES.



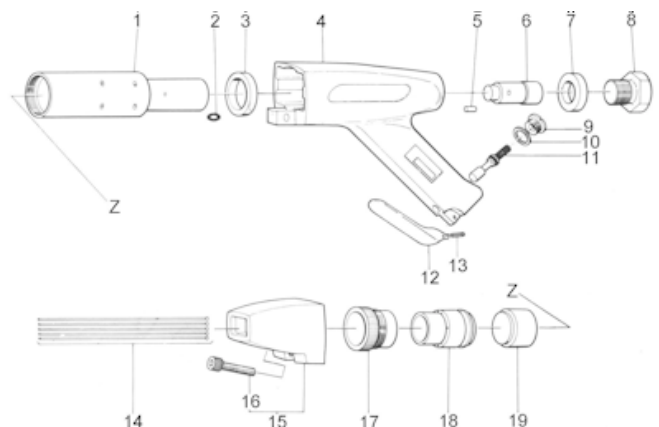
| I.CO. CODE | | 12200-23E | 12200-28E | 12200-L |
|------------------|---------------------|------------------------------------|---|-----------------|
| Handle type | | Pistol | Pistol | Straight |
| Blows per minute | Rpm | 3500 | 3500 | 4600 |
| Air consumption | m ³ /min | 0,22 | 0,25 | 0,25 |
| Air pressure | Bar | 6 | 6 | 6 |
| Connection | Inch | 3/8" gas | 3/8" gas | 1/4" gas |
| N° of Needles | mm | Diam 2 x 53 pcs Diam 3 x 23 pcs | Diam 2 x 66 pcs Diam 3 x 28 pcs Diam 4 x 14 pcs | Diam 3 x 19 pcs |
| Needles Length | mm | 180 | 180 | 180 |
| Overall Length | mm | 348 | 360 | 457 |
| Weight | Kg | 2,70 | 3,50 | 2,80 |

TECHNICAL DIAGRAM WITH SPECIFICATION OF SPARE PARTS:

| IMPA CODE | I.CO. CODE | N° | Part Name | Q'ty |
|-----------|-----------------|----|-------------------------------|-------|
| TP02241 | 12200-48 | 1 | Cylinder | 1 |
| TP11992 | 12200-43 | 2 | O Ring KS-9 | 1 |
| TP02250 | 12200-50 | 3 | Front Washer | 1 |
| TA90904 | 12200-01 | 4 | Housing Sub Ass'y | 1 set |
| TP01478 | 12200-23 | 5 | Cylinder Lock Pin | 1 |
| TP02242 | 12200-24 | 6 | Piston | 1 |
| TP02249 | 12200-22 | 7 | Rear Washer | 1 |
| TA93278 | 12200-13 | 8 | Rear Plug Ass'y | 1 |
| TP00389 | 12200-19 | 9 | Valve Cap | 1 |
| TP00388 | 12200-4B | 10 | Valve Packing | 1 |
| TA90037 | 12200-4 and 18 | 11 | Throttle Valve Ass'y | 1 set |
| TP01557 | 12200-2 | 12 | Throttle Lever | 1 |
| TQ00563 | 12200-6 | 13 | Spring Pin 3x 20 | 1 |
| 59.04.68 | 12200-41 | 14 | Needle Ø 3x180 mm | 23 |
| TA93189 | 12200-49 | 15 | Needle Guide Ass'y | 1 set |
| TQ01484 | 12200-39 | 16 | Hexagon Socket Head Bolt 8x35 | 1 |
| TP02246 | 12200-51 | 17 | Lock Ring | 1 |
| 59.04.76 | 12200-29 and 31 | 18 | Needle Supporter Ø 3 | 1 |
| TP02243 | 12200-28 | 19 | Throttle Anvil | 1 |

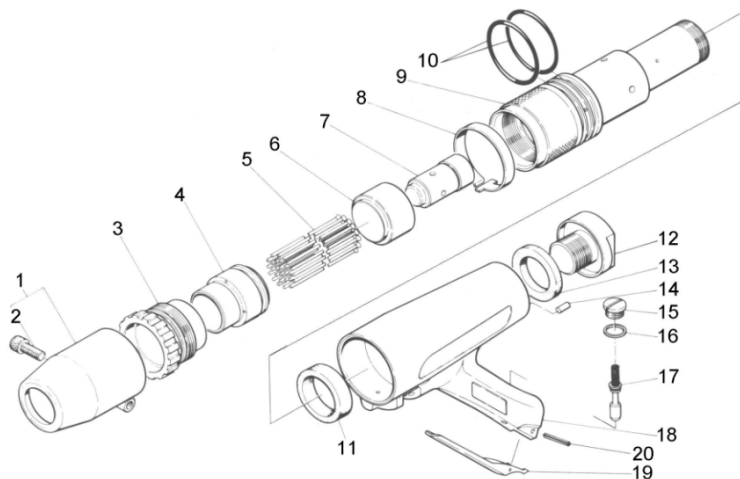
"JEX 24"

IMPA CODE: 59.05.36
I.CO. CODE 12200-23E



| N° | Part Name | Q'ty |
|----|---------------------------------|-------|
| 1 | Round Needle Guide Ass'y | 1 set |
| 2 | Hexagon Socket Head Bolt 8 x 25 | 1 |
| 3 | Stop Ring | 1 |
| 4 | Needle Supporter diam 3 | 1 |
| 5 | Needle Ø 3×180 mm | 28 |
| 6 | Throttle Anvil | 1 |
| 7 | Piston | 1 |
| 8 | Safety Band | 1 |
| 9 | Cylinder | 1 |
| 10 | O Ring W-4 | 2 |
| 11 | Front Washer | 1 |
| 12 | Rear Bolt Ass'y | 1 set |
| 13 | Rear Washer | 1 |
| 14 | Cylinder Lock Pin | 1 |
| 15 | Valve Cap | 1 |
| 16 | Valve Packing | 1 |
| 17 | Throttle Valve Ass'y | 1 set |
| 18 | Housing Sub Ass'y | 1 set |
| 19 | Throttle Lever | 1 |
| 20 | Spring Pin 3×20 | 1 |
| | Hex. Wrench Key | 1 |
| | Needle Ø 4×180 mm | 14 |
| | Reducer M16 × NPT 3/8 | 1 |
| | Needle Supporter Ø 4 | 1 |
| | Hose Nipple NPT 3/8 x 3/8 | 1 |
| | Needle Ø 2×180 mm | 66 |
| | Needle Supporter Ø 2 | 1 |

"JEX 28"
IMPA CODE:
I.CO. CODE: 12200-28E



ELECTRIC NEEDLE CHISEL

CODICE IMPA: 59.12.- -

CODICE ICO: ICO-32A



Technical features:

- power source (single phase) 220 V. / 240 V. – 50/60 Hz.
- rated power consumption: 200 W.
- rated time: 30 min
- stroke speed: 3,000 min / 1'
- needle: 32 (2x 180 mm) or 15 (3x180 mm) + n. 30 needles 3 x 180 mm + n. 1 needle holder for needles Ø 2
- mass (weight): 4.5 kg
- sound pressure level: no load 84.6 dB(A) / load 84.9 dB(A)
- sound power level: no load 95.6 dB(A) / load 95.9 dB(A)
- vibration emission value: motor 32.7 m/s² – handle 25.2 m/s²

UNIVERSAL PNEUMATIC CHISEL AND CHIPPER

Powerful hammers for general chipping and calking weld line, paint and rust removing in limited space.
Compact chippers in light weight pistol handle or straight handle, supplied with flat chisel.





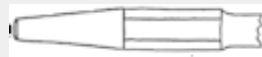

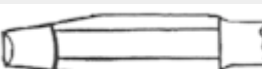
IMPA CODE 59.24.21
ICO CODE 850-00

IMPA CODE 59.24.23
I.CO. CODE 850-L



| IMPA CODE | | 59.24.22 | 59.24.23 |
|-----------------|-------|-------------|----------|
| I.CO. CODE | | 850-00 | 850-L |
| Blows per min | N° | 2000 | 2100 |
| Piston Stroke | mm | 30 | 89 |
| Piston size | mm | Ø 24,5×69,5 | Ø 19×60 |
| Hose Connection | Inch | ½" gas | ½" gas |
| Air Hose Ø | mm | 13 | 13 |
| Air Pressure | Bar | 6 | 6 |
| Air Consumption | l/min | 300 | 200 |
| Overall length | mm | 400 | 350 |
| Weight | Kg | 2,5 | 2,0 |
| Spring retainer | mm | Ø 14 | Ø 10 |

INTERCHANGEABLE TOOLS:

| IMPA CODE | I.CO. CODE | Drawing | Description & Use |
|-----------|------------|---|--|
| 59.24.26 | 850-26 |  | Normal chisel mm. 50: suitable to eliminate foundry & welding burrs, devel edges & light jobs. |
| 59.24.27 | 850-27A |  | Sheet shearing chisel: suitable for cutting rolled sheets mm. 1,5 - 2 thick. |
| 59.24.28 | 850-27B |  | Triangle cross cut chisel: suitable to eliminate fusion & welding blowholes & to prepare triangle grooves for welding. |
| 59.24.29 | 850-27C |  | Mason's point: suitable for drilling concrete or brick walls. |
| 59.24.30 | 850-27E |  | Nail punch: suitable to punch flat head nails against the plate to obtain better tightness. |
| 59.24.31 | 850-27D |  | Rammer: suitable to caulk plates. |
| 59.24.32 | 850-27F |  | Wails: suitable for rivetting |

Special tools will be made on request.

ICO PNEUMATIC GRINDING AND BRUSHING MACHINE Mod. 4" , 7" and 9"

The pneumatic grinding/brushing machine is suitable for sanding, rust removing, rough grinding and cutting. A wide range of models and tools is available for the various needs and applications. It's particularly suitable for heavy duty work in difficult conditions and can be equipped with grinding wheels, brushes, abrasive and cutting disks, polishing wheels and flexible fiber-pads for application of sandpaper, sand-cloth, felt polishing skin, etc.

IMPA CODE 59.03.01
I.CO. CODE 3602-00-E-4
VERTICAL TYPE - MOD. 4"



IMPA CODE 59.03.02
I.CO. CODE 3602-00-E-7
VERTICAL TYPE - MOD. 7"



IMPA CODE 59.03.03
I.CO. CODE 3602-00-E-9
VERTICAL TYPE - MOD. 9"



| I.CO. CODE | | 3602-00-E-4 | 3602-00-E-7 | 3602-00-E-9 |
|--|---------|-------------|-------------|-------------|
| Model | | 4" | 7" | 9" |
| Disk capacity | mm | 22x125 | 22x180 | 230 |
| Speed | RPM/min | 12.000 | 7.000 | 6.000 |
| Recommended air pressure | bar | 6,2 | 6,2 | 6,2 |
| Air connection | | 3/8" | 1/2" | 1/2" |
| Inner diameter air tube | mm | 10 | 13 | 13 |
| Average air consumption | l/sec | 9 | 18 | 33,3 |
| Weight | Kg | 1,8 | 3,5 | 5,1 |
| Lenght | mm | 225 | 338 | 185 |
| Sonorous pressure (PNEUROP8N-1) | DbA | 84 | 97,8 | 95 |
| Vibrations (ISO 8662-1) | m/sec2 | 2,5 | 3,56 | 8,7 |



PNEUMATIC GRINDING AND BRUSHING MACHINE - HORIZONTAL TYPE

Suitable for grinding and brushing using grinding stones and cylindrical brushes with overall max. diam mm 150.

IMPA CODE 59.03.33
I.CO. CODE 200-0



| IMPA CODE | 59.03.33 | |
|-------------------------|----------------|-----------|
| I.CO. CODE | 200-0 | |
| Version | BRUSH/ GRINDER | |
| Wheel max Ø | mm | 100/150 |
| Speed | RPM | 5000 |
| Tool spindle Ø | mm | Ø 12 / 16 |
| Hose connection | Inch | ½" |
| Normal working pressure | Atm | 6 / 7 |
| Overall length | mm | 510 |
| Weight | Kg | 3,5 |

HIGH PRESSURE CLEANING SYSTEMS

A complete range of multipurpose high quality systems. Hot and Cold water system available together with a complete range of accessories.

IMPA CODE: 59.07.- - /08.- -
I.CO. CODE: HYDRO 70 & UP

| Power | HJ24 | HJ22 | HJ53 | HJ100 |
|-------------------|-------------|--------------|-------------|---------------|
| Water System | COLD | HOT | COLD | COLD |
| Motor | 3-phase | 3-phase | 3-phase | 3-phase |
| Voltage | 400 V. | 400 V. | 400 V. | 400 V. |
| Power Consumption | 9,0 Kw. | 7,0 Kw. | 23,0 Kw. | 30 Kw. |
| Capacity | 1.400 l/h | 950 l/h | 1.500 l/h | 1.000 l/m |
| Sizes L x W x H | 700x600x720 | 1020x620x850 | 960x780x860 | 1275x580x1090 |
| Working Pressure | 230 BAR | 210 BAR | 500 BAR | 1.000 BAR |
| Weight | 95 | 150 | 260 | 450 |

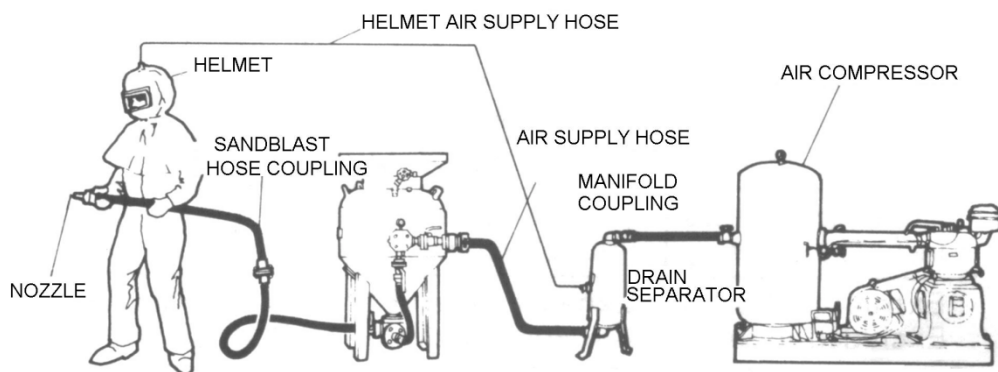


PNEUMATIC SANDBLASTER

Suitable for removal of rust, dirt, corrosion, old paint etc. from metal, plastic, concrete, stone, brick and glass surfaces. Ideal for efficient and continuous work - cleaning any hard surface quickly and preparing it perfectly for repainting without further preparation.

Available in a wide variety of models.

Versions listed below are standard, with usual accessories. Special equipments on request. Air compressors are to be ordered separately.



“SUPERBABY” PORTABLE TYPE

IMPA CODE 59.08.94
I.CO. CODE 300-00



IMPA CODE 59.08.____
I.CO. CODE 300-PA



Special spray gun designed for neutralising the dust and the sparks produced by sanding operation.

The equipment is supplied with standard operative and protective accessories.

Special accessories on request.

60 LT. SANDBLASTER

IMPA CODE 59.08.95
I.CO. CODE 300-60



Technical Features

| IMPA CODE | | 59.08.94 | 59.08.95 |
|----------------|-----|----------|----------|
| I.CO. CODE | | 300-00 | 300-60 |
| Capacity | l | 25 | 60 |
| Rated pressure | bar | 6 | 8 |
| Overall height | mm | 850 | 980 |
| Overall Ø | mm | 300 | 450 |
| Weight | Kg | 46 | 72 |

Specifications of air consumption and efficiency:

| Diameter of nozzle | mm | 5-6 | 6-8 | 6-12 |
|--------------------|--------|---------|---------|----------|
| Air consumption | m³/min | 1,0-2,4 | 2,4-5,0 | 2,4-12,0 |
| Working surface | m²/hr | 6,5-10 | 10-20 | 10-35 |

DRILLING MACHINE

Suitable for use on light and medium duty drilling. An air regulator located on the grip handle controls the power, adjusting it to different drilling surfaces.

Technical Features:

| IMPA CODE | | 59.03.42 | 59.03.47 | 59.03.48 | 59.03.51 |
|--------------------------|---------------------|----------|----------|----------|----------|
| I.CO. CODE | | AR-X10 | AR-X13 | AR-X16 | AR-X22 |
| bit capacity – Ø | mm | 10 | 13 | 16 | 22 |
| Speed no-load | rpm | 2000 | 1500 | 900 | 600 |
| Recommended air pressure | Kgf/cm ² | 6,0 | 6,0 | 6,0 | 6,0 |
| Air connection | | 3/8" | 3/8" | 1/2" | 3/4" |
| Internal air pipe Ø | mm | 10 | 10 | 13 | 19 |
| Air Consumption | m ³ /min | 0,55 | 0,65 | 1,1 | 1,1 |
| Power | kW | 0,44 | 0,53 | 0,96 | 0,96 |
| Length | mm | 156 | 187 | 433 | 433 |
| Weight | Kg | 1,1 | 2,6 | 5,5 | 5,5 |

**½" Reversible Air Drill
with rack chuck of 13 mm**
IMPA CODE: 59.03- -
I.CO. CODE: ARX-10, ARX-13, ARX-16 & ARX-22



PNEUMATIC IMPACT WRENCH / PNEUMATIC BOLT DRIVER

Designed for fast and efficient removal or fastening of nuts. Reversible action.
Powerful, solid, compact and extremely durable.

IMPA CODE 59.01.06
I.CO. CODE



A4

IMPA CODE 59.01.07
I.CO. CODE A5



IMPA CODE 59.01.09
I.CO. CODE A6-1



I.CO. produces, as well as the indicated special Impact Wrenches for marine engine bolts, also the entire range of Pneumatic Impact Wrenches, with tightening torque from Kgm 20 to Kgm 2400 - with bush connections from 1/2" to 2½".

Special pneumatic impact wrenches for marine engine bolts technical features:

| IMPA CODE | | 59.01.01 | 59.01.05 | 59.01.06 | 59.01.07 | 59.01.08 | 59.01.09 | 59.01.10 |
|---------------------|-----|----------|------------------|------------------|------------------|-------------|-------------|-------------|
| I.CO. CODE | | A2 | A3 | A4 | A5 | A6-0 | A6-1 | A6-2 |
| Bolt shank Ø | mm | 10-16 | 12-22 | 16-28 | 20-36 | 27-45 | 30-80 | 50-110 |
| Tightening torque | Kgm | 20-40 | 50-120 | 102-230 | 150-330 | 540 | 210-815 | 550-2400 |
| Square bush connect | | ½" | ¾" | 1" | 1" | 1 ½" | 1 ½" - 2" | 2 ½" |
| Air inlet | | 3/8" | ½" | ½" | ½" | ¾" | ¾" | 1" |
| handle type | | gun | gun/ rear closed | gun/ rear closed | gun/ rear closed | rear closed | two handles | two handles |
| Weight | Kg | 2,5 | 4,8 | 7,9 | 11 | 16 | 32 | 69 |

AIRLESS VARNISH SPRAYING—HIGH PRESSURE

The spray-paint system K30 is an airless piston pump with high delivery pneumatic motor which, generating high pressure, atomizes perfectly any kind of varnish with no air.

- Paint atomization adjustable from 0 to 240 bar
- Smoke lessness
- Direct suction from tank
- 5 Lt. overhead tank for small amounts
- Nozzle have dimension from 0.007" to 0.026"
- Hard metal valves with stainless seats and balls
- First-class packings
- Pneumatic motor with mechanical exchanger
- Low cost of maintenance and long duration
- Easy to use

| IMPA CODE | I.CO. CODE | Delivery | Ratio | Max Pressure | Feeding Pressure | Weight |
|-----------|------------|----------|-------|--------------|------------------|--------|
| 27.03.- - | 1000-R30-1 | 6 l | 30:1 | 240 bar | 8 bar | 24 Kg |

The high pressure pneumatic pump permits to make use of points at low-thinner content reducing a lot the work place pollution and helping the drying of the points.



IMPA CODE 27.03.- -
I.CO. CODE 1000-R30-1

LONG SPRAY GUN



IMPA CODE
27.03.- -
27.03.- -
27.03.- -

I.CO. CODE
1002-L/I Long spray gun m 0,9
1002-L/15 Long spray gun m 1,5
1002-L/20 Long spray gun m 2,4

PNEUMATIC DOUBLE DIAPHRAGM PUMP



The pneumatic diaphragm pump is flame proof, with adjustable capacity, equipped with exhaust mufflers and built-in lubricating device. Suitable for work: in suction, immersed, self-priming. It can be portable or fixed. It does not require auxiliary components. Resistant and reliable for heavy duty work.

It pumps liquids with high percentage of solid particles in suspension and is suitable for all kinds of products, such as chemicals, dirty water, etc. The pump has a very low maintenance cost thanks to its simple construction and few moving parts that can be easily detached and re-fitted.

The pump's parts in contact with the fluid can be in polypropylene, aluminium, cast iron or stainless steel; and the diaphragms can be made of Neoprene, Buna-N, Viton

Technical Features:

| IMPA CODE | | 59.16.01 | 59.16.02 | 59.16.03 | 59.16.04 |
|------------------------|-------|--------------|----------------|----------------|----------------|
| I.CO. CODE | | 12450-T2 | 12450-T4 | 12450-T8 | 12450-T15 |
| Overall dimensions | mm | 180x270x270h | 300x 360x 460h | 340x 400x 670h | 460x 510x 820h |
| Weight | Kg | 10 | 16 | 30 | 55 |
| Head | m | | 65 | 65 | 65 |
| Suction Lift Dry | Sec | 18 | 22 | 20 | 20 |
| Wet | Sec | 25 | 27 | 25 | 25 |
| Feeding | Atm | 7 | 7 | 7 | 7 |
| Standard diaphragms | | | | | |
| Air inlet | Ø | ¼" | ⅜" | ½" | ½" |
| Liquid outlet | Ø | ¾" | 1 ¼" | 2" | 3" |
| Liquid suction | Ø | 1" | 1 ½" | 2" | 3" |
| Delivery mt. 10 | l/min | | abt 230 | abt 450 | abt 680 |
| Delivery mt. 30 | l/min | | abt 150 | abt 300 | abt 580 |
| Delivery mt. 60 | l/min | | abt 65 | abt 80 | abt 340 |
| Max. Ø solid particles | mm | 3 | 5 | 8 | 10 |

A STANDARD LINE WITH SPECIAL ECONOMY PRICES IS AVAILABLE

PNEUMATIC PORTABLE TRANSFER PUMP

The TURBINE TYPE are strongly built equipments. Engine body in light alloy, tube set in steel or stainless steel. Suitable rapid transfer of oil, acid, solvent, fluids in general, from drum or other containers.

The PISTON TYPE are strongly built equipments. Engine body in light alloy, pistons in steel or stainless steel, seals in teflon, tube set in steel or stainless steel. Suitable for rapid transfer - even in aspiration - of oil, acid, solvent and other liquids, even very thick. The pump can be supplied in special versions - silenced according to EEC regulations or in electric version.



Technical Features:

| IMPA CODE | 59.16.66 | | 59.16.67 | 59.16.68 | 59.16.69 | 59.16.__ |
|--------------------|----------|-----------------|----------|------------|-----------------|-----------------|
| I.CO. CODE | 500-0 | | 500-00 | 17000-0 | 17000-00 | 500-EL |
| TYPE | TURBINE | | | PISTON | | ELECTRIC |
| Tubset material | STEEL | STAINLESS STEEL | | STEEL | STAINLESS STEEL | STAINLESS STEEL |
| Tubset Ø | mm | 40 or 48 | | 54 | | 50 |
| Tubset Legth | mm | 1000 | 1000 | 1000 | 1000 | 1000 |
| Max. head | m | 10-15 | 10-15 | 60 | 60 | 21 |
| Max delivery water | l/min | 240 | 240 | 35 | 35 | 160 |
| Max delivery oil * | l/min | 135 | 135 | 25 | 25 | 50 |
| Feeding pressure | Bar | 7 | 7 | 7 | 7 | = |
| Air Consumption | l/min | 1200 | 1200 | 75 | 75 | = |
| RPM | Nr | 6000 | 6000 | = | = | = |
| Strokes per min | Nr | = | = | 180 | 180 | = |
| Power | kW | 0,75 | 0,75 | = | = | 0,75 |
| Volts | V | = | = | = | = | 230/400 |
| Frequency | Hz | = | = | = | = | 50 |
| Air inlet | Ø | ½" x 13 mm | | ½" x 13 mm | | = |
| Liquid Outlet | Ø | 1 1/4" x 48/60 | | ¾" x 25 | | 1 1/4" x 25 |
| Weight | Kg | 8 | 7 | 8,5 | 8 | 12 |

* The oil max delivery depends on its viscosity.

PNEUMATIC SUMP PUMP

I.CO. pneumatic sump pump is a highly resistant centrifugal pump, built in nodular cast iron or bronze (spark-proof version) and has a remarkable shock resistance. The engine is sealed to avoid water leakage or penetration of sand or other particles. The impeller is in bronze and the transmission shafts are sleeved in bushings and special bearings. Equipped with lifting handle and suction filter.

ACCESSORIES:- Connections and pipes for air and water- Air filters and nebulizer- Mufflers conforming to EEC Regulations.

Technical Features:

| IMPA CODE | | 59.16.31 | 59.16.32 | 59.16.33 |
|--------------------------------|--------------------|------------------------------|------------------------|----------|
| I.CO. CODE | | 900-0-BN30 New Type | 900-0-BN60 New Type | 900-BZ |
| Type | | A | B | C |
| Body | | Cast Iron | Cast Iron | Bronze |
| Overall Dimensions | mm | 260 x 230 x 517 h. all types | | |
| Weight | Kg | 13,5 | 13 | 20 |
| Feeding Press. | Bar | 6-7 | 6-7 | 6-8 |
| Air Consumption | m ³ /hr | 50 | 50 | |
| Head | m | 25 | 30 | 40 |
| Delivery at mt.3 | l/min | 600 | 670 | |
| Delivery at mt.25 | l/min | 320 | 350 | |
| Delivery at mt.30 | l/min | = | 180 | |
| Air inlet connect & Hose Ø | | all types 3/4" | | |
| Liquid outlet connect & Hose Ø | | all types 2 1/2" | | |
| Air outlet connect & Hose Ø | | all types 1" x 32 mm | | |

PNEUMATIC SUMP PUMP

IMPA CODE 59.16.31

I.CO. CODE 900-0-BN 30/60 NEW TYPE



ELECTRIC SUMP PUMP

Suitable for permanent or portable application and ideal for loading anywhere there is an accumulation of water.

Technical Features:

- Power Supply furnished for a 110 Volt - Single Phase or 220 Volt - Three Phase.
- Lifting Capacity available for 7,5 mt with 0,25 CBM/min up to 40,0 mt with 1,3 m³/min.
- Discharge diameter available in 40 mm up to 80 mm

I.CO. can furnish different models of electric sump pump, contact us to have other details and technical specifications.

ELECTRIC SUMP PUMP

IMPA CODE 59.16.47

I.CO. CODE 900-0-EL



GREASE LUBRICATOR PUMP

The air operated pumps are suitable for high pressure lubrication while using all types of grease, fluid or thick and with short or long distribution. The use of first quality materials and an accurate assembly with rigorous final test guarantee reliability and endurance.

The Grease Kit with trolley is offered with:

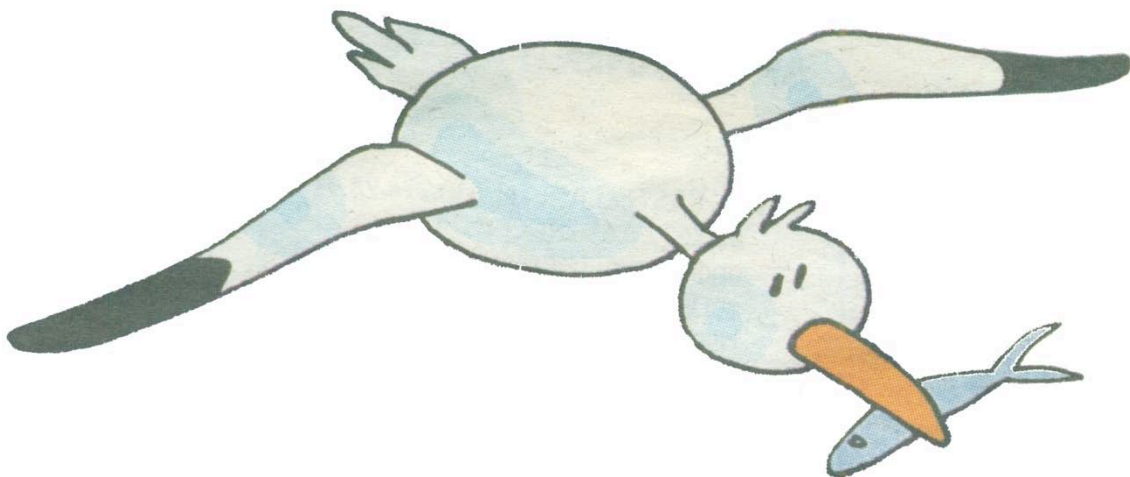
- 25 Kg drum air operated pump R=60:1
- 2 wheels trolley for 25 Kg. drums
- R2 1/4" distributor hose - 3 m length
- Grease gun with flexible pipe and 4 jaw fitting
- Follower plate for drums internal Ø 375 mm
- Drum cover Ø 400 mm

The follower plate is indispensable when high viscosity greases (NLGI 2-3) is used.

It assures the compression of the grease and eludes the forming of pocket air and the suction of grease that otherwise would remain on drum walls.

Available in other models for 50Kg –100Kg drum capacity.

IMPA CODE 61.71.- -
I.CO. CODE DA11C



PNEUMATIC SAFETY LAMP

I.CO Pneumatic Safety Lamp for ships, refineries and chemical industries is a special explosion proof lamp. It's made of sparkproof materials.

The compressed air activates a low tension (V.12-24) generator connected directly to the turbine by a differential pressure switch which keeps the power on a constant level, avoiding irregular rotation and consequent light oscillation.

The air circuit is designed in order to guarantee complete safety, preventing infiltration of hazardous gases and maintaining the lamp constantly cooled, thus preventing all risks of combustion and explosion. I.CO pneumatic safety lamp can be immersed and used for underwater inspections, equipped with proper air discharge conveyors.

It's also available a diffused lighting version of the pneumatic Safety Lamp.

IMPA CODE 33.06.37
I.CO. CODE 3110-W45



IMPA CODE 33.06.38
I.CO. CODE 3110-W44



CONSTRUCTION of I.CO. pneumatic Safety Lamp:

The lamp is exceptionally resistant and its casing is in sparkproof metal. The inner part is divided into: generator, switch and lamp chamber.

The lamp chamber comprises a hardened glass globe (12mm thick) and is further protected by a brass guard.

Technical Features:

| IMPA CODE | | 33.06.37 | 33.06.38 |
|-------------------------|---------------------|-------------|--------------------------------|
| I.CO. CODE | | 3110-W45 | 3110-W44 |
| Working Pressure | Bar | 5 - 7 | 5 - 8 |
| Halogen bulb | Watt | 250 | 250 |
| Single-phase generator | V | 24 | 24 |
| Power | Watt | 250 | 250 |
| Air Consumption | m ³ /min | 0,75 | 0,75 |
| Light flux | Lumen | 6000-9000 | 6000-9000 |
| Approval code | | Eex p II T5 | Eex II 2GD II T4 / Eex I M2 |
| Protection level | | IP56 | IP66 |
| Length excluding handle | mm | 290 | 280 |
| Weight | Kg | 13 | 9,5 |



AIR / STEAM or WATER TURBINE DRIVE SUPPLY AND EXHAUST

Type 'C' portable marine ventilators are rugged, dependable tube axial units that operate on steam, compressed air, or water. These ventilators offer maximum performance for wide range of on-board applications, for example: gas freeing, drying and ventilating operations on oil tankers and similar vessels, refineries and chemical industries. Models have flanged design in order to be mounted directly on tank opening; adapters are available to allow use of flexible duct to fit other openings.

AIR / STEAM TURBINE DRIVE SUPPLY AND EXHAUST
MODELS 4.600 to 8.400 cfm



IMPA CODE: 59.14.40-41
I.CO. CODE: C-12AW/15AWC

WATER TURBINE DRIVE SUPPLY AND EXHAUST
MODELS 4.70 to 7.400 cfm



IMPA CODE: 59.14.49-48
I.CO CODE: C-12A & C-15A

| STEAM/COMPRESSED AIR TURBINE DRIVEN | | WATER TURBINE DRIVE | |
|--|---|---|--|
| C-12A | C-15A | C-12AWC | C-15AWC |
| Supply model 5.350 cfm (9.090 m ³ /hr) Exhaust model 4.600 cfm (7.815 m ³ /hr) | Supply model 8.400 cfm (14.275 m ³ /hr) Exhaust model 6.500 cfm (11.044 m ³ /hr) | Supply model 5.000 cfm (8.495 m ³ /hr) Exhaust model 4.700 cfm (7.985 m ³ /hr) | Supply model 7.400 cfm (12.573 m ³ /hr) Exhaust model 5.750 cfm (9.769 m ³ /hr) |
| Features: Cast iron turbine housing with aluminium cover. Bronze turbine wheel. Cast aluminium fan and fan casing. Stainless steel fasteners, mounting studs and protective screen. | | Features: Cast aluminium turbine housing. Cast aluminium impeller. Cast aluminium inlet and outlet water connections. Grease sealed stainless steel ball bearings. Cast aluminium fan and fan casing. Stainless steel fasteners and protective screen. | |

| Model | C-12A | C-15A | C-12AWC | C-15AWC |
|--------------------|---------------|---------------|--------------|--------------|
| Ref. A | 12,6 (321) | 21,0 (533) | 14,8 (376) | 16,5 (419) |
| Ref. B | 14,2 (362) | 14,2 (362) | 14,2 (362) | 14,2 (362) |
| Ref. C | 20,5 (521) | 22,2 (565) | 22,5 (572) | 24,5 (622) |
| Ref. D | 12,5 (318) | 15,3 (389) | 12,5 (318) | 15,2 (387) |
| Ref. E | 15,3 (389) | 20,5 (521) | 15,3 (389) | 20,5 (521) |
| Ref. F | 16,8 (427) | 21,5 (546) | 16,8 (427) | 21,5 (546) |
| Bolt Slots: | | | | |
| Size | 0,93 (24) | 1,12 (28) | 0,93 (24) | 1,12 (28) |
| N° | 10 | 8 | 10 | 8 |
| Net * Weight | 100 lbs 45 Kg | 120 lbs 54 Kg | 40 lbs 18 Kg | 53 lbs 24 Kg |

DIMENSIONS - Inches (mm)

Ref. A – Max Height
 Ref. B – Height from the Base up to the Handles top
 Ref. C – Max Ø
 Ref. D – Rated Ø
 Ref. E – Base Bolt Circe
 Ref. F – Base External Ø

ACCESSORIES

Vaned aluminium adapters to mate C-15A and C-15AWC ventilators to standard "Butterworth" deck opening.
 Aluminium adapters for flexible duct attachment. Flexible duct in various diameters and lengths. Bonding Cable.

AIR TURBINE DRIVE SUPPLY**AIR TURBINE DRIVE SUPPLY**

| AIR TURBINE DRIVEN | AIR TURBINE DRIVEN |
|--|--|
| I.CO. CODE 75 | I.CO. CODE 12P |
| Supply model 3.470 m ³ /hr EX PROOF | Supply model 3.500 m ³ /hr |
| Dimensions: max height: 410 mm height: 410 mm max Ø : 430 mm rated Ø : 430 mm net weight: 14 kg | Dimensions: max height: 533 mm height: 533 mm max Ø : 533 mm rated Ø : 533 mm net weight: 16 kg |

AIR TURBINE DRIVE SUPPLY / EXHAUST**ELECTRIC SUPPLY / EXHAUST**

| PNEUMATIC | ELECTRIC |
|--|---|
| IMPA CODE: 59.14. – – I.CO. CODE: 8S1611S & 8S1020S | IMPA CODE: 59.14.17-19 I.CO. CODE: 200MM & 300MM |
| Technical Features: case Ø : 300 mm Total Dimension: 3850x350x440 mm Weight: 13,5 Kg Max Pressure: 100PSI (7BAR) RPM: 3000 | Technical Features: Ø : 300 mm Voltage: 220V Phase: Single RPM: 3000/3600 Air Volume: 77m ³ /min Pressure: 30mm/Aq Weight: 25 Kg |

AUTOMATIC EXPANDER FOR PIPES

TYPE A

Used to expand and flare the pipes at the same time. It's composed of a cage pin and 5 rolls, of which 2 flaring and 2 expanding. One of the expanding rolls is elongated in order to flatten the protuberance which usually forms inside the pipe, at the junction between expanding and flaring rolls.

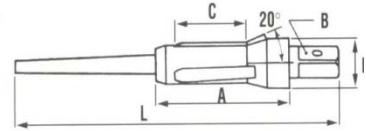
TYPE B

Equipped with thrust bearing pawl which rotates on ball bearings. The pawl is adjustable in order to vary depth of expansion. The pawl rests against the pipe head and is equipped with chamber spacer to allow lengthening of the pipe externally. Also available with rotating pawl and increased expansion depth.

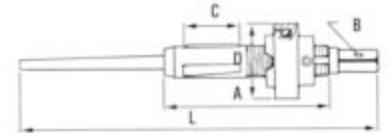
TYPE C

Suitable in all cases where only expansion is required and not flaring. Equipped with rotating pawl.

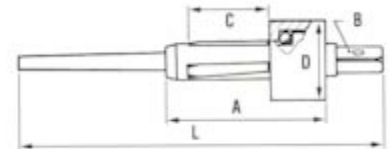
TYPE A— IMPA CODE 61.20. __



TYPE B— IMPA CODE 61.20. __



TYPE C — IMPA CODE 61.20. __



| IMPA CODE | | | | 61.20. __ Type C | | | 61.20. __ Type A | | | 61.20. __ Type B | | |
|-----------|-----------|----|-------|---------------------|----|-----|---------------------|----|-----|---------------------|-----|-----|
| Size | Expansion | C | Frame | A | D | L | A | D | L | A | D | L |
| 01 | 8-9,25 | | | | 21 | | | 13 | | | 31 | |
| 1 | 8,5-10 | | | | 21 | | | 14 | | | 31 | |
| 2 | 9-10,5 | | | | 22 | | | 14 | | | 31 | |
| 03 | 9,5-11 | | | | 22 | | | 15 | | | 32 | |
| 3 | 10-11,5 | | | | 23 | 130 | | 15 | 130 | | 32 | 165 |
| 04 | 10,5-12 | | | | 23 | | | 16 | | | 33 | |
| 4 | 11-12,5 | | | | 24 | | | 16 | | | 33 | |
| 05 | 11,5-13 | 25 | | 60 | 24 | | 62 | 17 | | 90 | 34 | |
| 5 | 12-13,5 | | | | 25 | | | 17 | | | 34 | |
| 06 | 12,5-14 | | 9 | | 25 | | | 18 | | | 35 | |
| 6 | 13-15 | | | | 26 | | | 18 | | | 36 | |
| 7 | 13,5-15,5 | | | | 26 | | | 19 | | | 37 | |
| 08 | 14-16 | | | | 27 | 145 | | 19 | 145 | 38 | 175 | |
| 8 | 14,5-16,5 | | | | 27 | | | 20 | | | 38 | |
| 09 | 15-17 | | | | 28 | | | 20 | | | 39 | |
| 9 | 15,5-17,5 | | | | 28 | | | 21 | | | 39 | |
| 10 | 16-18,5 | | | | 35 | | | 21 | | | 40 | |
| 011 | 17-20 | | | | 37 | | | 22 | | | 45 | |
| 11 | 18-21 | 30 | | 70 | 38 | | 67 | 23 | | 95 | 46 | |
| 12 | 19-22 | | | | 39 | | | 24 | | | 47 | |
| 13 | 20-23 | | | | 40 | 160 | | 25 | 160 | | 48 | 195 |
| 14 | 21-24,5 | | | | 41 | | | 27 | | | 52 | |

PNEUMATIC AND ELECTRIC PIPE CLEANING EQUIPMENT

Equipment designed for proper maintenance and internal cleaning of pipes of boilers, exchangers, refrigerators, condens well as pipes from chemical and food plants, and various other uses.

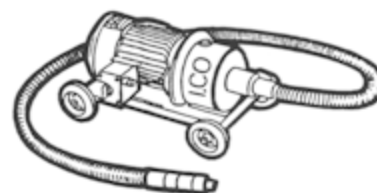
PNEUMATIC TURBINE
IMPA CODE 59.23.35
I.CO. CODE 4000-TYPE



ELECTRIC - TYPE 'A'
IMPA CODE 59.23.31
I.CO. CODE 1660-00-2F



ELECTRIC - TYPE 'B'
IMPA CODE 59.23.33
I.CO. CODE 1600-00-2F



CLEANING TOOLS FOR PNEUMATIC OR ELECTRIC PIPE CLEANING EQUIPMENT

| ISSA CODE | I.CO. CODE | Tool | | ISSA CODE | I.CO. CODE | Tool | |
|-----------|------------|-------------------------------|---|-----------|------------|-------------------------------------|---|
| 55.129.10 | 21 | Spindle type cutter |  | 55.129.17 | 28 | Oscillating cutter head |  |
| 55.129.11 | 22 | Conical cutter |  | 55.129.18 | 29 | Twin spiral cylindric brush |  |
| 55.129.12 | 23 | Expanding cleaner blade |  | 55.129.19 | 30 | Wheel cutter scaler |  |
| 55.129.13 | 24 | Eccentric cutter |  | 55.129.20 | 31 | Twin blade tungsten carbide cutter |  |
| 55.129.14 | 25 | Expanding cleaner brush |  | 55.129.21 | 32 | Three blade tungsten carbide cutter |  |
| 55.129.15 | 26 | Single spiral cylindric brush |  | 55.129.22 | 33 | Four blade tungsten carbide cutter |  |
| 55.129.16 | 27 | Expanding cutter head |  | | | | |

ROD TYPE PNEUMATIC SCALING EQUIPMENT

For cleaning the clogged condenser pipes. The rods are perforated to allow the passage of water, air or chemicals in or facilitate cooling of the equipment and elimination of residue.

Normally Tungsten Carbide cutters with holes for liquid passage are fitted on the equipment.

IMPA CODE 59.23.61
I.CO. CODE 3800

IMPA CODE 59.23.62
I.CO. CODE 12100



Technical Features:

| IMPA CODE | | 59.23.61 | 59.23.62 |
|------------------------|----|----------|----------|
| I.CO. CODE | | 3800 | 12100 |
| Scaling range inside Ø | mm | 8-25 | 26-45 |
| Power | HP | 1 | 1,2 |
| Rod Ø (length mt l) | mm | 6-16 | 20-25 |
| Max. scaling length | m | 5-10 | 10-12 |
| Weight | Kg | 6 | 8 |

ELECTRIC PIPE CLEANER TECHNICAL SPECIFICATIONS

Choice and use of the equipment:

The type of tool to be employed is chosen and selected according to:

- Inner Ø of pipe to be cleaned
- Structure of pipe: straight or with elbows
- Type and nature of scaling

| TYPE | 'A' | 'B' |
|-----------------------------------|--|------------------------------|
| IMPA Code n. | 59.23.32 | 59.23.33 |
| I.CO. Code | 1660-00-2F | 1600-00-2F |
| With speed variator | from RPM 300 to 2800 | - |
| Internal Ø of pipes to be cleaned | From 10 mm to 50 mm | From 50 mm to 160 mm or over |
| Single speed | - | Either RPM 1400 or 2800 |
| Motors available: | D.C.: V. 110/220 - A.C.: V. 24/48/110/220/380 (1 or 3 Phase) | |

TECHNICAL TABLE FOR CHOICE OF TOOLS

● Applicable tool ✗ Not applicable tool

When ordering, always specify type of equipment needed and inside diam. of pipe to be cleaned (For example: N. 1 Turbine type '5' for pipe inside Ø mm 30).

| Internal diam. of pipes to be cleaned [mm] | 9 14 | 10 15 | 15 18 | 18 21 | 21 25 | 24 29 | 29 33 | 34 45 | 44 55 | 55 65 | 66 85 | 85 115 | 115 160 | Over 160 |
|--|---------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|------------|-------------|
| Turbine Type | | 0 | 1 | 2 | 3 | 4/4R | 5/5R | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| Turbine Ø [mm] | | 13,2 | 14,5 | 17,3 | 19,5 | 22,5 | 27,5 | 34 | 40 | 50 | 63 | 80 | 100 | 100 |
| Threaded coupling | M4 | M5 | M6 | M6 | M6 | M8 | M10 | M10 | M12 | M14 | M16 | M22 | M22 | M22 |
| Pneum. Flexible Shaft-Type C | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| Air consumption [l/min] | 500/900 | 300 | 300 | 450 | 450 | 500 | 600 | 700 | 950 | 950 | 1600 | 1800 | 1800 | 1800 |
| Electric-Type A | ● | ● | ● | ● | ● | ● | ● | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ |
| Electric-Type B | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ● | ● | ● | ● | ● | ● | ● |
| Flexible shaft' Ø [mm] | 8 | 8 | 12 | 14 | 17 | 17 | 17 | 23 | 28 | 28 | 35 | 35 | 35 | 35 |
| TOOLS TYPE: | | | | | | | | | | | | | | |
| 21 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| 22 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| 23 | ✗ | ✗ | ✗ | ✗ | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| 24 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| 25 | ✗ | ✗ | ✗ | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| 26 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| 27 | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ● | ● | ● | ● | ● | ● | ● |
| 28 | ✗ | ✗ | ✗ | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| 29 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| 30 | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ● | ● | ● | ✗ | ✗ | ✗ |
| 31 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| 32 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| 33 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| Cardan joint | 00 | 0 | 1-3 | 1-3 | 1-3 | 4/4R | 5-6 | 5-6 | 7 | 8 | 9 | 10-12 | 10-12 | 10-12 |
| Flexible joint | 00 | 0 | 1-3 | 1-3 | 1-3 | 4/4R | 5-6 | 5-6 | 7 | 8 | 9 | 10-12 | 10-12 | 10-12 |

PNEUMATIC MUCKING WINCH

IMPA CODE 59.06.07 IMPA CODE 59.06.02
I.CO. CODE 1450-MW6 I.CO. CODE 1300-MW1



Machines of strong and reliable construction and equipped with wheel/screw endless reducer irreversible under load. Suitable for any lifting operation, also in areas where there is explosion danger.

Single motor/reducer group with cable, as well as winches with special structures for different applications can be supplied. The standard version is equipped with steel no-revolving cable. On request, it's possible to supply with Stainless Steel cables or with different length for longer depth.

Technical Features:

| IMPA CODE | | 59.06.02 | 59.06.03 | 59.06.04 | 59.06.05 | 59.06.06 | 59.06.07 |
|------------------|----------|----------|-------------|-------------|-------------|-------------|-------------|
| I.CO. CODE | | 1300-MW1 | 1350-MW2 | 1350-MW3 | 1400-MW4 | 1400-MW5 | 1450-MW6 |
| model | | Fixed | Directional | Directional | Directional | Directional | Directional |
| Lifting capacity | Kg | +70 -100 | +100-120 | +120-160 | +160-200 | +200-250 | +250-300 /+ |
| Lifting speed | m/ min | 37 | 18 | 12 | 15 | 14 | 14 |
| Steel rope Ø | mm mm | 5 | 5 | 5 | 5 | 5 | 5 |
| Length | m | 35 | 35 | 35 | 35 | 35 | 35 |
| Air hose | Ø | ½" | ½" | ½" | ½" | ½" | ½" |
| Weight | Kg | 50 | 85 | 85 | 95 | 100 | 100 |

Note: Standard rope length is indicated - different lengths available on request.

NEOPRENE RUBBER BUCKET

Special spark-proof bucket for tank cleaning. Made in hard neoprene rubber. While ordering please specify capacity.

| IMPA CODE | I.CO. CODE | Capacity | Height | Top Ø |
|-----------|------------|----------|--------|--------|
| 59.06.11 | 1300-BN-10 | l 10 | 335 mm | 260 mm |
| 59.06.12 | 1300-BN-20 | l 20 | 350 mm | 360 mm |

PNEUMATIC CASUALTY WINCH

Built in galvanised steel. Frame equipped with winding wheel and handles to allow quick and easy removal. Tested by the most important Classification International Registers.

Areas of use: TANKERS AND FREIGHTERS - FOR HOISTING INJURED MEN AND VARIOUS MATERIALS FROM TANKS, HOLDS, ETC.

IMPA CODE 59.06.09

I.CO. CODE 1500-MW7

| | | |
|----------------------------------|--------|--------------|
| Power | HP | 1 |
| Speed | m/min | 20 |
| Air pressure | atm | 6-7 |
| Air consumption | m³/min | 1,2 |
| Lifting capacity | Kg | 250 |
| Air inlet | Ø | ¾" x 19 mm |
| Lift from deck level | m | 15-20 |
| Ø of sparkless steel rope | Mm | 5 |
| Steel rope breaking point | Kg | 1500 |
| Overall dimensions | mm | 500x500x4000 |
| Weight | Kg | 60 |



PNEUMATIC AND ELECTRIC I.CO. PORTABLE DERRICK

The I.CO. PORTABLE DERRICK is a versatile, safe and durable equipment that can be used on board of almost any kind of vessel or rig.

IMPA CODE 59.06.____

I.CO. CODE 3527-00

The I.CO. DERRICK is extremely resistant, functional and it's painted for being corrosion-free. It's easy to carry, and to erect and it requires a very simple maintenance.

It has a wide range of applications, such as manouvering of ship stores, machinery spares, provisions, boats, hoses, gangways, ladders, cleaning of cargo holds etc. I.CO. DERRICK can be PNEUMATIC or ELECTRIC, and all versions are equipped with emergency manual control system.



Technical Features:

| max. lift. Capacity (Kg) | Lifting speed m/min | Standard lift depth m | Max. reach m |
|-----------------------------|------------------------|--------------------------|--------------|
| 500 | 20 | 50 | 2,5-6,0 |
| 750 | 15 | 50 | 2,5-6,0 |
| 1000 | 12 | 50 | 2,5-6,0 |

PNEUMATIC CHAIN HOIST

The pneumatic chain hoist offers a very good performance in any use condition, also in an heavy environment, without changing its characteristics, capacity and security.

Standard equipments:

- 3 meters lifting height;
- the commands: manual or push-button control at 2 meters;
- revolving suspension hook.

On request: rigid adaptors for the hook and different lifting height for each model can be supply.

Common characteristics:

- Air connector: 3/8 NPT - 3/4"
- Internal diameter for the advice feed pipe mm. 10-19

IMPA CODE 59.13.52-54-55-56-57-58-59-61
I.CO. CODE PP200 & UP



Versions with direct control or push-button control.

| I.CO. Code manual version | I.CO. Code push-button version | Lifting power | Max speed: meter/minute | | | | Air Consumption l/min | Weight Kg | |
|---------------------------------|--------------------------------------|------------------|-------------------------|------|-------|------|-----------------------------|-------------------|------------------------|
| | | | Full load | | Empty | | | manual version | push-button version |
| | | | up | down | up | down | | | |
| PM200 | PP200 | 200 | 30 | 60 | 60 | 40 | 1100 | 19 | 21 |
| PM250 | PP250 | 250 | 30 | 60 | 60 | 40 | 1100 | 19 | 21 |
| PM500 | PP500 | 500 | 12 | 20 | 20 | 17 | 1100 | 19 | 21 |
| PM1000 | PP1000 | 1000 | 6 | 17 | 13 | 9 | 1200 | 21.5 | 23.5 |
| PM2000 | PP2000 | 2000 | 3,5 | 8 | 7 | 5 | 1200 | 29 | 31 |

These values were obtained with a feed pressure of 6.2 bar

ELECTRIC CHAIN HOIST

The rugged dynamic body provide maximum protection for moving exceedingly heavy loads.

A wide range of models are available for **110 or 220 volt single phase** power supply and **220/380/440 three-phase**.

Lifting capacity from **0,125 tons up to 10 tons**.

IMPA CODE 59.13.____
I.CO. CODE PE200 & UP



MANUAL CHAIN HOIST

The Manual Chain Hoist is available with lifting capacity from **0,5 tons up to 20 tons**.

IMPA CODE 59.13.____
I.CO. CODE M200 & UP



PNEUMATIC MOTORS / COMPRESSED AIR LINES

REVERSIBLE PNEUMATIC MOTOR FOR DIFFERENT APPLICATION

Casing in nodular cast iron and internal gear in high resistance steel alloys.

Suitable for naval and industry use. Available with a worm reduction unit or gears suitable to the request necessity.

Available with power from 0,5 up to 7 CV.

IMPA CODE 59.06.____
I.CO. CODE MTPN



4/5/6-WAY AIR DISTRIBUTOR

IMPA CODE 59.08.9-
I.CO. CODE 170-0/170-OSP/170-00SP

The distributor allows the connection of 4, 5 or 6 pneumatic tools at the same time to a single air-line, and keep feeding constant pressure in each line. The distributor is equipped with handle for easy carrying, support skids, safety valve and pressure gauge. Air inlet and outlet are fitted with bronze ball valves and 'quick connections'.

A filter / nebulizer unit can also be provided on request, together with a pressure reducer to reduce pressure from Atm. 30 to 6. Construction in special steel.



GARBAGE COMPACTING PRESS

Equipment designed for naval, industrial and civil fields. For the naval field, the machine is in conformity with IMO-MARPOL anti sea-pollution Regulations in force and is designed in full conformity with safety rules. It can be installed on board of any kind of vessel or drilling platform. Available in different versions.

| | | |
|---------------------------|----------------------|--------------|
| IMPA CODE | 17.55.85 | |
| I.CO. CODE | 15500-T3 New Type | |
| TYPE | T3 | |
| Dimensions of base | mm | 620x670 |
| Pressing capacity | Ton | 3 |
| Power | HP | 2,2 |
| Diam. containing cylinder | mm | 550 |
| Overall Height: | | |
| - open | mm | 1740 |
| - closed | mm | 1740 |
| 3 Phase voltage | V | *220/380/440 |
| Net Weight | Kg | 220 |



Type 'T3' - PRESSING CAPACITY Ton 3
IMPA CODE 17.55.85
I.CO. CODE 15.500-T3-NEW TYPE



There are other outlets with higher flow rates up to 10 Tons.