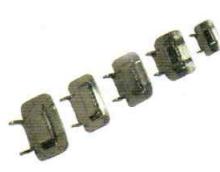


**Steel**

CODE	Size mm	CODE	Size mm	CODE	Size mm	Unit Per Pcs
61 40 51	8-14	61 40 55	22-32	61 40 59	68 - 85	
52	11-17	56	32-44	60	77 - 95	
53	13-20	57	46-56	61	87 - 112	
54	15-24	58	58-75			



Banding Buckle

Banding Screw Buckle

**Stainless Steel**

CODE	Size mm	CODE	Size mm	CODE	Size mm	Unit Per Pcs
61 40 65	8-14	61 40 69	22-32	61 40 73	68 - 85	
66	11-17	70	32-44	74	77 - 95	
67	13-20	71	46-56	75	87 - 112	
68	15-24	72	58-75			

Banding Tool : Tensioning capability over 1 ton weight 2 kg.

Banding Band : 30 mtrs/roll of 5 sizes stainless steel made.

Banding Buckle : 100 pcs/box of 5 sizes stainless steel made.

Banding Screw Buckle : 50 and 25 pcs/box 3 sizes.

**Hose Bands****Extra Heavy Duty**

Abrazaderas de Manguera/Reforzadas

High Strength Hose Band 软管卡箍

**Double Bolt****Interlock**

Made from malleable iron.

Made from structural steel.



Unit Per Pcs.

Double Bolt Type			Interlock Type		
CODE	For Hose O.D. mm	CODE	For Hose O.D. mm	CODE	For Hose O.D. mm
61 37 94	30 - 40	61 40 86	140-153	61 40 92	31.0 - 35.0
99	35 - 45	61 38 40	155-165	93	40.0 - 44.0
61 38 00	40 - 50	61 40 87	165-175	94	47.5 - 52.5
03	45 - 55	61 38 48	170-180	95	56.5 - 60.5
04	50 - 60	49	180-190	96	73.0 - 77.0
61 40 80	60 - 65	61 40 88	195-205		
61 38 18	65 - 75	61 38 50	200-210		
61 40 81	78 - 85	61 40 89	215-225		
82	85 - 95	61 38 60	220-230		
83	90 - 100	72	230-240		
61 38 30	100 - 110	61 38 73	240-250		
38	115 - 125	61 40 90	285-300		
39	135 - 145				

**Banding Clamps & Tools**

Abrazaderas y Herramientas バンドクランプ 卡箍工具

These products have a wide range of applications for hose and pipe fastening and are used in almost all industries. Tensioning tools, band, buckles, performed clamps, hose couplings, mounting brackets, accessories and spare parts offer a universal and economical fastening system. The products will connect, clamp, fasten, secure and fix hose, pipe, cables, signs, boards, etc.



Banding Tool



Banding Band

**Straub Couplings**

Acoplamientos Straub ストラブカップリング 管接头

A very useful clamp for connecting pipes easily and quickly without using pipe fittings or doing welding work. Designed for use with casing, rubber sleeve, bolt nut and washers. A grip type and flexible type are available.



Grip Type



Flex Type

Main Material	Stainless Steel SUS 316, 304 & Galvanized	
Rubber Sleeves	EPDM	For Seawater, Air, Inert Gas, etc.
	NBR	For Oil, Organic Gas
Working Pressure	Up to 16 kgf/cm <sup>2</sup>	

EPDM denotes Ethylene Propylene Dien Rubber

NBR denotes Acrylonitrile-butadiene Rubber



**How to order: CODE**

Pipe coupling, Straub, grip type(Grip-L or Metal Grip), MATERIAL of SLEEVE, NOMINAL SIZE

Unit Per Pc.

**Straub-Grip-L Type**

Rubber (EPDM) Sleeve			Rubber (NBR) Sleeve		
CODE	Nominal Size	Pipe OD mm	CODE	Nominal Size	Pipe OD mm
61 41 20	20A	26 - 28	61 41 26	20A	26 - 28
21	25	33 - 35	27	25	33 - 35
22	32	37 - 39	28	32	37 - 39
23	40	47 - 49	29	40	47 - 49
31	50	57 - 61	41	50	57 - 61
61 41 32	65	74 - 78	61 41 42	65	74 - 78
33	80	87 - 93	43	80	87 - 93
34	100	112 - 118	44	100	112 - 118
35	125	137 - 142	45	125	137 - 142
36	150	165 - 171*	46	150	165 - 171*
61 41 24	200	217 - 221**	61 41 30	200	217 - 221**
25	250	270 - 276***	37	250	270 - 276***

Working Pressure: \* 13 bar, \*\* 10 bar, \*\*\* 4 bar

Unit Per Pc.

**Straub-Metal-Grip Type - Significantly stronger design**

Rubber (EPDM) Sleeve			Rubber (NBR) Sleeve		
CODE	Nominal Size	Pipe OD mm	CODE	Nominal Size	Pipe OD mm
61 41 38	150	165 - 171*	61 41 47	150	165 - 171*
39	200	217 - 221**	48	200	217 - 221**
40	250	270 - 276***	49	250	270 - 276***

Working Pressure: \*16 bar (SUS304), \*\*16 bar (SUS304), \*\*\*12 bar (Galvanized)

**How to order: CODE**

Pipe coupling, Straub, flex type, MATERIAL of SLEEVE, NOMINAL SIZE

Unit Per Pc.

**Straub-Flex Type**

Rubber (EPDM) Sleeve			Rubber (NBR) Sleeve		
CODE	Nominal Size	Pipe OD mm	CODE	Nominal Size	Pipe OD mm
61 41 59	40A	47 - 50	61 41 69	40A	47 - 50
50	50	57 - 61	60	50	57 - 61
51	65	74 - 78	61	65	74 - 78
52	80	87 - 93	62	80	87 - 93
53	100	112 - 118	63	100	112 - 118
61 41 54	125	137 - 142	61 41 64	125	137 - 142
55	150	165 - 171	65	150	165 - 171
56	200	211 - 221*	66	200	211 - 221*
57	250	263 - 273**	67	250	263 - 273**
58	300	314 - 324***	68	300	314 - 324***

Working Pressure: \* 10 bar, \*\* 8 bar, \*\*\* 7 bar

**Fire Proof Jackets for Straub Coupling**

The Fire Proof Jacket can be added to Straub Couplings that have already been installed, quickly and easily upgraded to the Fire-Fence version, in case fire protection is required. Available for models Straub-Metal-Grip and Straub Grip-L. Please specify the size of coupling when ordering.

**How to order: CODE**

Straub-FireFence Upgrade Kit to Straub-Metal-Grip or Straub-Grip-L coupling, NOMINAL SIZE

Unit Per Pc.

**Straub-FireFence Upgrade Kit**

to Straub-Grip-L Couplings			to Straub-Metal-Grip Couplings		
CODE	Nominal Size	Pipe OD mm	CODE	Nominal Size	Pipe OD mm
61 42 71	20A	26.9	61 42 83	20A	26.9
72	25	33.7	84	25	33.7
73	32	38.0	85	32	38.0
74	40	48.3	86	40	48.3
75	50	60.3	87	50	60.3
61 42 76	65	76.1	61 42 88	65	76.1
77	80	88.9	89	80	88.9
78	100	114.3	90	100	114.3
79	125	139.7	91	125	139.7
80	150	168.3	92	150	168.3
61 42 81	200	219.1	61 42 93	200	219.1
82	250	273.0	94	250	273.0

**Straub Clamps**

Abrazaderas Straub ストラブクランプ 管夾



A clamp for the quick repair of pit holes, punctures or splits in steel pipe. Repairs leaks on water, gas, oil and pressure steam lines up to normal working pressure 16 kgf/cm². The features are the same as the Straub Couplings. Coupling material is Stainless Steel SUS316.

**How to order: CODE**

Pipe clamp, Straub, MATERIAL of SLEEVE, NOMINAL SIZE

Unit Per Pc.

**Straub-Open-Flex Type**

Rubber (EPDM) Sleeve			Rubber (NBR) Sleeve		
CODE	Nominal Size	Pipe OD mm	CODE	Nominal Size	Pipe OD mm
61 41 79	40A	47 - 50	61 41 89	40A	47 - 50
70	50	57 - 61	80	50	57 - 61
71	65	74 - 78	81	65	74 - 78
72	80	87 - 93	82	80	87 - 93
73	100	112 - 118	83	100	112 - 118
61 41 74	125	137 - 142	61 41 84	125	137 - 142
75	150	165 - 171	85	150	165 - 171
76	200	211 - 221*	86	200	211 - 221*
77	250	263 - 273**	87	250	263 - 273**
78	300	314 - 324***	88	300	314 - 324***

Working Pressure: \* 10 bar, \*\* 8 bar, \*\*\* 7 bar

**Rapid Response Clamps**Abrazadera de respuesta rápida  
緊急修理用クランプ 緊急修理用夹具

The fastest and easiest way to temporarily repair pipe leaks and bursts. Taking less than 60 seconds to install by one operator and featuring a fully self contained design, which does not require the use of tools. Made from marine-grade stainless steel and featuring an innovative patented design, the system features a choice of three grades of material in the lip-seal,

making it suitable for water, potable water, steam, gas and most chemicals/petroleum liquids.

It fits pipe sizes ranging from 1.5" - 36" (DN38 mm - DN930 mm) and is available in four clamp widths, with each covering a wide range of diameters. It is a reusable repair clamp and can be applied to pressurized pipes up to 20 bar. Clamps are all ABS approved.

#### Material Specification

Casing	Stainless Steel SS 316
Lip-Seal	Nitrile, Neoprene or Therban
Working Temperature	Up to 165 DEG C

#### How to order: CODE

Rapid Response Clamp, NOMINAL SIZE, CLAMP WIDTH, SEAL (NITRILE, NEOPRENE or THERBAN)

Unit Per Pcs.

CODE	Pipe Dia to Seal mm (inch)	Clamp Width (mm)	Effective Seal Width (mm)	Number of Cam Lock Handles
61 53 01 02 03 04	38 - 75 (1.5" - 3")	70	40	Single (1)
		148	118	Double (2)
		210	180	Triple (3)
		272	242	Quad (4)
61 53 09 10 11 12	75 - 100 (3" - 4")	70	40	Single (1)
		148	118	Double (2)
		210	180	Triple (3)
		272	242	Quad (4)
61 53 13 14 15 16	100 - 220 (4" - 8")	70	40	Single (1)
		148	118	Double (2)
		210	180	Triple (3)
		272	242	Quad (4)
61 53 17 18 19 20	220 - 350 (8" - 14")	70	40	Single (1)
		148	118	Double (2)
		210	180	Triple (3)
		272	242	Quad (4)
61 53 21 22 23 24	350 - 500 (14" - 20")	70	40	Single (1)
		148	118	Double (2)
		210	180	Triple (3)
		272	242	Quad (4)

\*Larger sizes up to DN930 (36") are available upon request.

Name of Mfr.: World Wide Metric Inc.

#### Material Specification

	Type I	Type IV
Casing	AISI 304/DIN 1.4301	AISI 316L/DIN 1.4301
Fasteners	Alloy Steel, PTFE Coated	AISI 316 / 316L
Gasket	EPDM (NBR is available on request)	
Working Pressure		16 Bar

#### How to order: CODE

Pipe coupling, TEEKAY Axilock-FP, Fire Resistant, NOMINAL SIZE, MATERIAL (Type I or Type IV), GASKET (EPDM or NBR), and SPECIFY THE SHIP'S CLASSIFICATION

Unit Per Pcs.

CODE	Pipe OD (mm)	O.D. Tolerance (mm)	CODE	Pipe OD (mm)	O.D. Tolerance (mm)
61 42 30 31 32 33	21.3	21.0 - 21.6	61 42 51 52 53 54	98.0	97.0 - 100.0
	26.9	26.6 - 27.3		101.6	100.5 - 103.5
	28.0	27.7 - 28.4		104.0	103.0 - 106.0
	30.0	29.7 - 30.4		108.0	107.0 - 110.0
34	33.7	33.3 - 34.1	55	110.0	109.0 - 112.0
61 42 35 36 37 38	35.0	34.7 - 35.4	61 42 56 57 58 59	114.3	113.0 - 116.0
	38.0	37.0 - 39.0		118.0	117.0 - 120.0
	42.4	41.4 - 43.4		127.0	126.0 - 129.0
	44.5	43.5 - 45.5		129.0	128.0 - 131.0
39	48.3	47.3 - 49.3	60	133.0	132.0 - 135.0
61 42 40 41 42 43	54.0	53.0 - 55.0	61 42 61 62 63 64	139.7	139.0 - 142.0
	57.0	56.0 - 58.0		141.3	140.5 - 143.5
	60.3	59.0 - 62.0		144.0	143.0 - 146.0
	63.0	62.0 - 65.0		154.0	153.0 - 156.0
44	67.0	66.0 - 69.0	65	159.0	158.0 - 161.0
61 42 45 46 47 48	70.0	69.0 - 72.0	61 42 66 67 68 69	165.0	164.0 - 167.0
	73.0	72.0 - 75.0		168.3	167.0 - 170.0
	76.1	75.0 - 78.0		170.0	169.0 - 172.0
	82.5	81.5 - 84.5		193.7	193.0 - 196.0
49	84.0	83.0 - 86.0	70	219.1	218.0 - 221.0
61 42 50	88.9	88.0 - 91.0			

Note: Working pressure for pipe OD 193.7 mm and 219.1 mm is 12 Bar

Name of Mfr.: Teekay Couplings Ltd.

## Fire Resistant Couplings

### Teekay Axilock-FP

Acoplamientos resistentes al fuego

耐火性カップリング 防火型管道连接器



The Teekay Axilock-FP represents the ultimate in high security fire protected mechanical pipe couplings. With its unique internal fire sleeve and double casing design, it is plain to see why this coupling is the primary pipe connection of choice in the marine and naval market sectors. The Axilock-FP has been tested to military standards for shock and fire resistance and is fully compliant with current IACS regulations, including ISO19921/19922 fire testing and ISO1182 non-combustibility testing.

Available in two types for material selection, Type I(AISI 304) and Type IV(AISI 316L). Type approved by all the major marine classification bodies so please specify the ship classification when ordering.

## Repair Clamp Joints for Elbow Pipe

Grapa de sujeción para reparación de codos de tuberías

エルボーバイプ用クランプジョイント 卷管用夹紧接头

To protect and repair the leakage on cracked or welded elbow (tee, cross) pipes line.



Unit Per Pcs.						
CODE	Type	Size	Length mm	W/P kgf/cm <sup>2</sup>		T.Q. (N.m)
				Industrial	Ship	
61 40 08	RCH-E	15A	26.3	22	11	3 - 5
09	RCH-E	20A	26.3	18	8	3 - 5
12	RCH-E	25A	26.3	18	8	3 - 5
13	RCH-E	32A	26.3	18	8	3 - 5
20	RCH-E	40A	26.3	18	8	3 - 5
61 40 21	RCH-E	50A	41.8	16	7	12 - 15
22	RCH-E	65A	41.8	16	7	12 - 15
23	RCH-E	80A	52.4	14	7	20 - 25
24	RCH-E	100A	52.4	14	7	20 - 25
27	RCH-E	125A	52.4	14	7	30 - 32
61 40 29	RCH-E	150A	52.4	14	7	30 - 32
35	RCD-E	200A	57.5	12	6	32 - 35
36	RCD-E	250A	57.5	12	6	32 - 35
40	RCD-E	300A	58.5	10	5	45 - 50
41	RCD-E	350A	58.5	10	5	45 - 50
61 40 42	RCD-E	400A	58.5	10	5	55 - 60
43	RCD-E	450A	58.5	8	4	55 - 60
44	RCD-E	500A	58.5	7	3	65 - 70

\*W/P: Working Pressure T.Q: Locking Torque Value

Name of Mfr.: YOUNGNAM METAL CO.,LTD

Unit Per Pcs.						
CODE	Type	Size	Length mm	W/P kgf/cm <sup>2</sup>		T.Q. (N.m)
				Industrial	Ship	
61 40 45	RCH-E	15A	26.3	22	11	3 - 5
46	RCH-E	20A	26.3	18	8	3 - 5
47	RCH-E	25A	26.3	18	8	3 - 5
48	RCH-E	32A	26.3	18	8	3 - 5
49	RCH-E	40A	26.3	18	8	3 - 5
61 40 50	RCH-E	50A	41.8	16	7	12 - 15
62	RCH-E	65A	41.8	16	7	12 - 15
63	RCH-E	80A	52.4	14	7	20 - 25
64	RCH-E	100A	52.4	14	7	20 - 25
76	RCH-E	125A	52.4	14	7	30 - 32
61 40 77	RCH-E	150A	52.4	14	7	30 - 32
78	RCD-E	200A	57.5	12	6	32 - 35
79	RCD-E	250A	57.5	12	6	32 - 35
91	RCD-E	300A	58.5	10	5	45 - 50
97	RCD-E	350A	58.5	10	5	45 - 50
61 40 98	RCD-E	400A	58.5	10	5	55 - 60
99	RCD-E	450A	58.5	8	4	55 - 60
61 41 00	RCD-E	500A	58.5	7	3	65 - 70

\*W/P: Working Pressure T.Q: Locking Torque Value

Name of Mfr.: YOUNGNAM METAL CO.,LTD

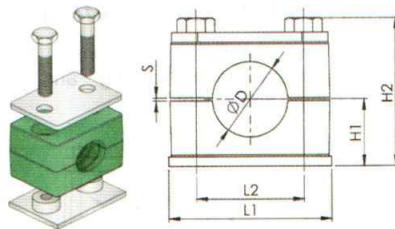
## Tube Clamps

Abrazaderas para tubos チューブクランプ 管夹

Tube clamps help prevent the loosening of joints and welds by reducing noise, absorbing shock and dampening vibration. In addition to preventing vibration transmission, they provide solid support that eases the stress caused by unequal movements in tubing installations. Clamp kits for each series include: clamp body, weld plate, cover plate and bolts. Clamps are available in metric and imperial sizes. Hardware available in Metric or UNC Thread, as well as steel or stainless steel. Llaves de Vaso ソケットレンチ 套筒扳手套装

### Standard Series (According to DIN 3015/1)

For average load and moderate vibration installations. Ideal for mobile equipment, machine tools and instrumentation plumbing applications.



### Materials

Clamp body : Polypropylene

Cover plates : Galvanized steel (ST-37)

Screws/Bolts : Galvanized steel (ST-37)

Weld plates : Phosphated steel (ST-37)

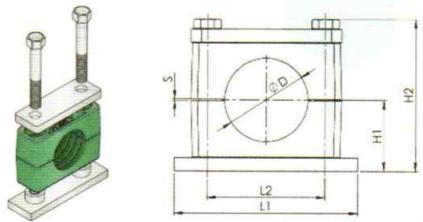
"Kits also available with Stainless steel hardware."

Unit Per Pcs.						
CODE	Size D mm	Nom.	Inch	Dimensions mm		
				L1	L2	H1
<b>Group S1</b>						
61 38 74	6	-	-			
81	6.4	-	1/4			
82	8	-	5/16			
83	9.5	-	3/8	36	20	16.5
84	10	R 1/8	-			37
97	12	-	-			0.4
<b>Group S2</b>						
61 38 98	12.7	-	1/2			
99	13.5	R 1/4	-			
61 39 00	14	-	-			
01	15	-	-	42	26	19.5
02	16	-	5/8			43
03	17.2	R 3/8	-			0.6
04	18	-	-			
<b>Group S3</b>						
61 39 05	19	-	3/4			
06	20	-	-			
07	21.3	R 1/2	-			
08	22	-	7/8	50	33	21
09	23	-	-			46
10	25	-	-			0.6
11	25.4	-	1			
<b>Group S4</b>						
61 39 12	26.9	R 3/4	-			
13	28	-	-	60	40	24
14	30	-	-			52
<b>Group S5</b>						
61 39 15	32	-	1-1/4			
16	33.7	R 1	-			
17	35	-	-			
18	38	-	1-1/2	71	52	32
19	40	-	-			68
20	42	R 1-1/4	-			0.8
<b>Group S6</b>						
61 39 21	44.5	-	1-3/4			
22	48.3	R 1-1/2	-	86	66	36
23	50.8	-	2			76
<b>Group S7</b>						
61 39 24	57.2	-	2-1/4			
25	60.3	R 2	-			
26	63.5	-	2-1/2	122	94	51.5
27	70	-	2-3/4			107
28	73	-	-			0.8
29	76.1	R 2-1/2	3			
<b>Group S8</b>						
61 39 30	88.9	R 3	3-1/2			
31	101.6	-	4	148	120	64
						132
						0.8

Name of Mfr. : World Wide Metric

### Heavy Series (According to DIN 3015/2)

For higher load and vibration installations. Applications include primary metal manufacturing and heavy-duty construction or mining equipment.



#### Materials

Clamp body : Polypropylene  
Cover plates : Galvanized steel (ST-37)  
Screws/Bolts : Galvanized steel (ST-37)  
Weld plates : Phosphated steel (ST-37)

"Kits are also available with Stainless steel hardware."

CODE	Size D mm	Nom.	Inch	Dimensions mm					Unit Per Pc.
				L1	L2	H1	H2	S	

#### Group H1

61 39 32	6	-	-						
33	6.4	-	1/4						
34	8	-	5/16						
35	9.5	-	3/8						
36	10	R 1/8	-						
37	12	-	-						
38	12.7	-	1/2						
39	13.5	R 1/4	-	74	33	24	55	0.6	
40	14	-	-						
41	15	-	-						
42	16	-	5/8						
43	17.2	R 3/8	-						
44	18	-	-						

#### Group H2

61 39 45	19	-	3/4						
46	20	-	-						
47	21.3	R 1/2	-						
48	22	-	7/8						
49	25	-	-	86	45	32	71	0.6	
50	25.4	-	1						
51	26.9	R 3/4	-						
52	28	-	-						
53	30	-	-						

#### Group H3

61 39 54	32	-	1-1/4						
55	33.7	R 1	-						
56	35	-	-						
57	38	-	1-1/2	100	60	38	83	0.6	
58	40	-	-						
59	42	R 1-1/4	-						

#### Group H4

61 39 60	44.5	-	1-3/4						
61	48.3	R 1-1/2	-						
62	50.8	-	2						
63	55	-	-						
64	57	-	2-1/4	140	90	54.5	117	2	
65	60.3	R 2	-						
66	63.5	-	2-1/2						
67	65	-	-						
68	70	-	2-3/4						

#### Group H5

61 39 69	73	-	2-7/8						
70	76.1	R 2-1/2	3						
71	80	-	-	180	122	70	150	2	
72	82.5	-	3-1/4						
73	88.9	R 3	3-1/2						

(to be continued)

CODE	Size D mm	Nom.	Inch	Dimensions mm					Unit Per Pc.
				L1	L2	H1	H2	S	
<b>Group H6</b>									
61 39 74	100	-	-						
75	101.6	R 3-1/2	-						
76	108	-	4-1/4						
77	114.3	R 4	-						
78	127	-	5						
79	133	-	5-1/4						

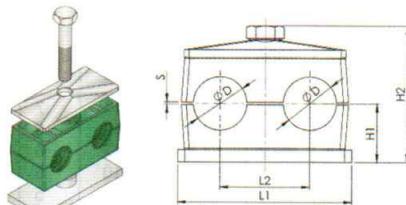
CODE	Size D mm	Nom.	Inch	Dimensions mm					Unit Per Pc.
				L1	L2	H1	H2	S	
<b>Group H7</b>									
61 39 80	139.7	R 5	-						
81	152.4	-	6						
82	159	-	6-1/4						
83	165	-	6-1/2						
84	168.3	R 6	-						

CODE	Size D mm	Nom.	Inch	Dimensions mm					Unit Per Pc.
				L1	L2	H1	H2	S	
<b>Group H8</b>									
61 39 85	177.8	-	-						
86	193.7	-	7-5/8						
87	216	-	8-1/2						
88	219.1	R 8	-						

Name of Mfr. : World Wide Metric

### Twin Series (According to DIN 3015/3)

For installations with closely placed lines. Ideal for general industrial use and mobile applications with moderate vibration.



#### Materials

Clamp body : Polypropylene  
Cover plates : Galvanized steel (ST-37)  
Screws/Bolts : Galvanized steel (ST-37)  
Weld plates : Phosphated steel (ST-37)  
"Kits are also available with Stainless steel hardware."

CODE	Size D mm	Nom.	Inch	Dimensions mm					Unit Per Pc.
				L1	L2	H1	H2	S	
<b>Group T1</b>									
61 39 94	6	-	-						
95	6.4	-	1/4						
96	8	-	5/16						
97	9.5	-	3/8						
98	10	R 1/8	-	37	20	16.5	41	0.6	
99	12	-	-						

CODE	Size D mm	Nom.	Inch	Dimensions mm					Unit Per Pc.
				L1	L2	H1	H2	S	
<b>Group T2</b>									
61 40 00	12.7	-	1/2						
61 41 02	13.5	R 1/4	-						
08	14	-	-						
14	15	-	-						
90	16	-	5/8						
97	17.2	R 3/8	-						
99	18	-	-						

(to be continued)

CODE	Size D mm	Nom.	Inch	Dimensions mm					Unit Per Pc.
				L1	L2	H1	H2	S	
<b>Group T3</b>									
61 42 00	19	-	3/4						
18	20	-	-						
19	21.3	R 1/2	-						
20	22	-	7/8	70	36	23.5	54.5	0.7	
24	23	-	-						
25	25	-	-						
26	25.4	-	1						
<b>Group T4</b>									
61 42 27	26.9	R 3/4	-						
28	28	-	-	85	45	25.5	58.5	0.7	
29	30	-	-						
<b>Group T5</b>									
61 42 95	32	-	1-1/4						
96	33.7	R 1	-						
97	35	-	-						
98	38	-	1-1/2	110	56	32	71.5	0.7	
99	40	-	-						
61 43 00	42	R 1-1/4	-						

Name of Mfr.: World Wide Metric

## 32. Carborundum Paste

### Grinding & Lapping Compound

#### (Valve Compounds)

Pasta de Esmeril (Compuestos para Válvulas)

バルブコンパウンド 金剛砂磨研膏

For precision lapping, fitting, surfacing, polishing and other general use in machine shops. Universally used for grinding valves. Supplied in 450 grm tin. Please specify grit number when ordering.



Unit Per Tin

CODE	Grade	Grit #	Applications	Unit Per Tin
61 42 01	Micro	3000	Precision lapping and high profile polishing to mirror finishing of metal parts.	
02		2000		
03		1500		
04		1200		
05		1000		
06		800		
61 42 07	Very Fine	600	Fine surface lapping, fine polishing for protection seating of valves, bearing and matting components.	
08		500		
61 41 91		400		
61 42 09	Fine	320	Surface finishing, e.g. valve seats, bearings, bushings, etc.	
10		280		
61 41 92	Medium	240	Surface lapping/reseating exhaust and intake valves.	
61 42 11	Fine	220		
61 42 12	Medium	180	Cleaning of corroded bolt threads & sharpening shears, etc.	
13		150		
61 41 93	Coarse	120	Spot removal of uneven surfaces e.g. conditioning of new gears for smooth running.	
61 42 14		100		
15		80		
61 41 94		60		
61 42 16	Very Coarse	50	Fast removal of high spots and very rough metal surfaces.	
61 42 15		40		
61 42 17		36		

## Nozzle Lapping Paste

Pasta Lubricante para Boquillas ノズル用ラッピングペースト 钻孔膏

High grade Silicon Carbide abrasive paste for nozzle lapping. Supplied in 60 grm/tin. Please specify grit number when ordering.



CODE	Grade	Grit	Unit Per Tin
61 42 21	Fine	1200	
61 42 22	Medium	1000	
61 42 23	Coarse	800	

Name of Mfr.: Skatool Marine

## Blue Paste - Prussian Blue

Pasta Azul-Azul Prusia ブルー ペースト 研磨膏 (藍油)

For lapping of bearings, high pressure valves, etc. Improved type on red lead for precision lapping work. A jelly-like paste made of super corpuscular dyes furnished in tubes.



61 41 96 | Blue paste, 120 grm/tube | Tub

## Tapping Paste

Lubricante de Pasta para taponear y barrenar タッピングペースト 攻丝润滑剂



Used for precision tapping and fitting. It is also a very useful paste for cutting marks, using tapes, drills, reamers, etc.

61 41 98 | Tapping paste 1 kg | Tin

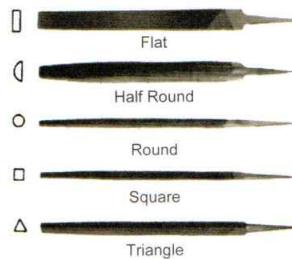
## 33. Files

### Machinist Files

Limas Mecánicas 鉄工ヤスリ

铁锉刀

The illustration right shows the types of files commonly available. These files have double cut teeth as is most common for use under heavier pressure where a fine finish is not required. Single cut files for smoother finishes are also available upon request. Specify from the following tables the type of file required based upon the type of work to be done and the material being used.



#### How to order: CODE

File, SHAPE, TYPE of CUT, LENGTH

#### Flat Files - Double Cut

Used by engineers for all kinds of works.

CODE	Cut	Length mm	CODE	Cut	Length mm
61 43 01	Bastard	150	61 43 15		150
02		200	16		200
03		250	17		250
04		300	18		300
05		350	19		350
06		400	20		400
61 43 08	Second Cut	150	61 43 21		150
09		200	22		200
10		250	23		250
11		300	24		300
12		350	25		350
13		400	26		400

**Half Round Files - Double Cut**

Used mostly in 200, 250 & 300 mm length on concaved surfaces.

Unit Per Pcs.					
CODE	Cut	Length mm	CODE	Cut	Length mm
61 43 28	Bastard	150	61 43 42	Smooth	150
29		200	43	(細)	200
30		250	44	(細)	250
31		300	45	(細)	300
32		350	46	(油)	350
33		400	47		400
61 43 35	Second Cut	150	61 43 49	Dead	150
36		200	50	Smooth	200
37		250	51	(細)	250
38		300	52	(油)	300
39		350	53	(油)	350
40		400	54		400

**Triangle Files - Double Cut**

Used for cleaning and smoothing out corners and angles. Not suitable for saw filling due to the sharp edges.

Unit Per Pcs.					
CODE	Cut	Length mm	CODE	Cut	Length mm
61 44 15	Bastard	150	61 44 29	Smooth	150
16		200	30	(細)	200
17		250	31	(細)	250
18		300	32	(油)	300
19		350	33	(油)	350
20		400	34		400
61 44 22	Second Cut	150	61 44 36	Dead	150
23		200	37	Smooth	200
24		250	38	(細)	250
25		300	39	(油)	300
26		350	40	(油)	350
27		400	41		400

**Round Files - Double Cut**

Used on curved surfaces and for enlarging round holes. Sometimes called a rattrail file.

Unit Per Pcs.					
CODE	Cut	Length mm	CODE	Cut	Length mm
61 43 56	Bastard	150	61 43 70	Smooth	150
57		200	71	(細)	200
58		250	72	(細)	250
59		300	73	(細)	300
60		350	74	(細)	350
61		400	75		400
61 43 63	Second Cut	150	61 43 77	Dead	150
64		200	78	Smooth	200
65		250	79	(細)	250
66		300	80	(油)	300
67		350	81	(油)	350
68		400	82		400

**Square Files - Double Cut**

These types of files are mainly used for enlarging rectangular holes.

Unit Per Pcs.					
CODE	Cut	Length mm	CODE	Cut	Length mm
61 43 84	Bastard	150	61 44 01	Smooth	150
85		200	02	(細)	200
86		250	03	(細)	250
87		300	04	(細)	300
88		350	05	(細)	350
89		400	06		400
61 43 91	Second Cut	150	61 44 08	Dead	150
92		200	09	Smooth	200
93		250	10	(細)	250
94		300	11	(油)	300
95		350	12	(油)	350
96		400	13		400

**Needle File Sets**

Juegos de Lima de Aguja 組ヤスリ 什錦锉

File sets which are used for precision work. Available in sets consisting of 5 to 12 pieces. Please specify the number of pieces you require in a set as well as the length and the cut of the files as shown in the tables below.



**How to order: CODE**

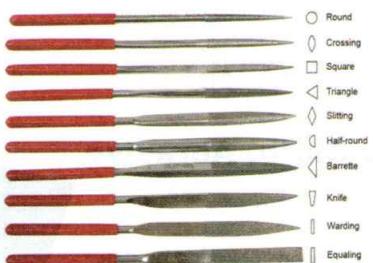
Needle file set, LENGTH, NUMBERS/set, TYPE of CUT

CODE	Cut	Contents	Unit Per Set
<b>215 mm / 5 pcs Set</b>			
61 45 31	2nd Cut	Flat, Half Round, Round,	
32	Smooth	Square and Triangle	
33	D.SMOOTH		
<b>200 mm / 8 pcs Set</b>			
61 45 34	2nd Cut	Flat, Half Round, Round,	
35	Smooth	Square Triangle, Mill,	
36	D.SMOOTH	Shinogi, and Oval	
<b>185 mm / 10 pcs Set</b>			
61 45 37	2nd Cut	Added Knife Edge and Half	
38	Smooth	Round to 8 pcs Set	
39	D.SMOOTH		
<b>170 mm / 12 pcs Set</b>			
61 45 40	2nd Cut	Added Oval, Half Moon	
41	Smooth	Shape to 10 pcs Set	
42	D.SMOOTH		

## Electroplated Diamond Needle File Sets

Conjunto de limas de aguja adiamantadas con revestimiento electrolítico  
電気めっきダイヤモンド加工組やすり 电镀金刚砂锉刀组

The electroplated diamond needle file set is used by metal workers for precise filing on stone, metal, glass and sculptures. They are also ideal for delicate filing, shaping and creating inside cuts. Files are electroplated uniformly using 150# ~ 240# diamond grit onto high grade steel. Different 10 file shapes included in these sets offer a variety of use for different applications: Equaling, Half-round, Triangle, Square, Round, Warding, Crossing, Knifing, Barrette and Slitting. Size : 4 x 160 mm.



61 45 43 File set, needle, electroplated diamond, 10's Set

## Double Saw Files

Limas Dobles de Sierra 両刃摺込やすり 锯齿锉

For filing saw blade teeth and various types of circular saws.



CODE	Length mm	CODE	Length mm	Unit Per Pcs
61 45 51	75	61 45 54	150	
52	100	55	175	
53	130	56	200	

## File Handles

Mangos de Lima ヤスリ柄 锉刀柄

Well balanced and shaped handle made of moisture absorbing hard wood.



Unit Per Pcs

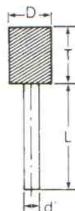
CODE	61 45 60	61 45 61	61 45 62
Length	100 mm	125 mm	150 mm

## 34. Grinding Wheels/Disc Paper

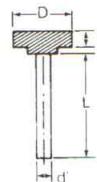
### Mounted Wheels

Muelas Taladros Esmerilar 軸付き砥石 回转锉

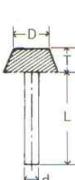
The mounted wheels are designed for use when ordinary grinding wheels cannot be used. Used in connection with air or electric drilling machines of 6 mm capacity. Please specify the number of the required shape.



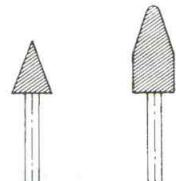
W W with Reinforcement A-4 A-5



A-11 A-12 A-21 A-25 A-26



A-35 A-37 AJ-1 AJ-2



AJ-3 AJ-4 AJ-5 AJ-6 AJ-7



### How to order : CODE

Mounted wheel with 6 mm dia shank, TYPE of SHAPE, SIZE D, T, and d mm

CODE	Size mm				CODE	Size mm				Unit Per Pcs.					
	D	T	d	L		D	T	d	L						
	Shape W					Shape A-12									
61 45 65	16	16	6	40	61 45 87	16	32	6	40						
66	16	25	6	40		Shape A-21									
67	16	32	6	40	61 45 88	25	25	6	40						
68	19	19	6	40		Shape A-25									
69	19	25	6	40	61 45 89	25	25	6	40						
61 45 70	19	38	6	40		Shape A-26									
71	25	25	6	40	61 45 90	16	16	6	40						
72	25	38	6	40		Shape A-35									
73	25	50	6	40	61 45 91	25	10	6	40						
74	32	19	6	40		Shape A-37									
61 45 75	32	32	6	40	61 45 92	32	8	6	40						
76	38	19	6	40		Shape AJ-1									
77	38	25	6	40	61 45 93	19	25	6	40						
78	38	38	6	40		Shape AJ-2									
79	50	25	6	40	61 45 94	19	38	6	40						
Shape W with Reinforcement						Shape AJ-3									
61 45 80	32	6	6	40	61 45 95	19	38	6	40						
81	38	6	6	40		Shape AJ-4									
82	38	13	6	40	61 45 96	19	45	6	40						
83	50	13	6	40		Shape AJ-5									
Shape A-4					61 45 97	25	13	6	40						
61 45 84	32	32	6	40		Shape AJ-6									
Shape A-5					61 45 98	25	50	6	40						
61 45 85	19	28	6	40		Shape AJ-7									
Shape A-11					61 45 99	25	50	6	40						
61 45 86	22	50	6	40											

## Grinding Wheel Dressers

Rectificadoras de muelas

研削砥石ドレッサー 砂轮修整器

Designed for dressing the round grinding stone. Cutter is attached to the bush of the hardened steel case and the bush rotates on the shaft. Attached dust-proof washer is inserted on both sides of the bush to prevent intrusion of sand grains.



CODE	Item	Unit
61 46 06	Dresser Grinding Wheel	Set
07	Wheel Extra for Grinding Dresser 50's	Pkt
08	Wheel Extra Block Type for Grinding Dresser	Set

## Disc Sanding Paper, Abrasive

Disco Papel Abrasivo ディスクペーパー 盘式砂纸

Designed for use with portable, grinding machines on all kinds of surfaces (rust & paint removing, feather edging, etc.). Each individual cutting grain is firmly anchored in a resin type adhesive which will withstand high grinding heat.



### How to order: CODE

Disc paper, abrasive, DIAM mm, GRIT #

Unit Per Pcs.

CODE	Grit	CODE	Grit	CODE	Grit
Diam. 100 mm					
61 46 11	16	61 46 16	40	61 46 21	120
12	20	17	50	22	150
13	24	18	60	23	180
14	30	19	80	24	220
15	36	20	100	25	240
Diam. 125 mm					
61 46 26	16	61 46 31	40	61 46 36	120
27	20	32	50	37	150
28	24	33	60	38	180
29	30	34	80	39	220
30	36	35	100	40	240
Diam. 150 mm					
61 46 41	16	61 46 46	40	61 46 51	120
42	20	47	50	52	150
43	24	48	60	53	180
44	30	49	80	54	220
45	36	50	100	55	240
Diam. 180 mm					
61 46 56	16	61 46 61	40	61 46 66	120
57	20	62	50	67	150
58	24	63	60	68	180
59	30	64	80	69	220
60	36	65	100	70	240

Grit Numbers are classified as follows:

Coarse Grit No. 16 – 40

Medium Grit No. 50 – 120

Fine Grit No. 150 – 240

## Emery Cloth, Abrasive

Tela de Esmeril, Abrasiva

エメリークロス 金钢砂布



Excellent for hand polishing metals.

Size: 230 x 280 mm.

Unit Per Shrt.

CODE	Grit	CODE	Grit	CODE	Grit
61 46 81	30	61 46 87	100	61 46 93	280
82	36	88	120	94	320
83	40	89	150	95	400
84	50	90	180		
85	60	91	220		
61 46 86	80	61 46 92	240		

## Emery Tapes, Abrasive

Cinta de Esmeril, Abrasiva エメリーロール 金钢砂布带

Easy to use by simply tearing off the required length of strip. Used for metal cleaning and polishing jobs. The grain is selected aluminium oxide attached to a flexible cloth strap. Length of tape (roll): 36.5 mtr.



**How to order: CODE**

Emery tape, abrasive, WIDTH mm, GRIT #

Unit Per Rls.

CODE	Grit	CODE	Grit	CODE	Grit
Width 25 mm					
61 47 01	30	61 47 05	80	61 47 09	180
02	40	06	100	10	240
03	50	07	120	11	320
04	60	08	150	12	400
Width 40 mm					
61 47 13	30	61 47 17	80	61 47 21	180
14	40	18	100	22	240
15	50	19	120	23	320
16	60	20	150	24	400
Width 50 mm					
61 47 25	30	61 47 29	80	61 47 33	180
26	40	30	100	34	240
27	50	31	120	35	320
28	60	32	150	36	400



Unit Per Sh.

CODE	Grit	CODE	Grit	CODE	Grit
61 47 66	80	61 47 71	220	61 47 76	400
67	100	72	240	77	500
68	120	73	280	78	600
69	150	74	320	79	700
70	180	75	360	80	800

\*Grit No. 120 is recommended for general sanding.

**Sand Paper, Abrasive**

Papel de Lija, Abrasivo サンドペーパー 砂纸

Ideal abrasive for hand sanding wood, paint fillers, paint under coats and varnishes. Sheet size: 230 x 280 mm.



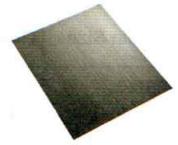
Unit Per Sh.

CODE	Grit	CODE	Grit	CODE	Grit
61 47 51	40	61 47 55	100	61 47 59	220
52	50	56	120	60	240
53	60	57	150	61	320
54	80	58	180	62	400

**Sandpaper, Wet & Dry**

Papel de Lija, Abrasivo サンドペーパー 砂纸

Flexible and more durable to sand irregular shapes than most other sandpaper thanks to closed-coat abrasive bonding with a waterproof resin. The abrasive particles are bonded with a waterproof adhesive that permits the use of water, oil, and other lubricants. To be used on metal, wood plastic fillers to gain a smooth finish. Sheet size: 230 x 280 mm.



Unit Per Sh.

CODE	Grit	CODE	Grit	CODE	Grit
61 47 37	80	61 47 43	240	61 47 49	600
38	100	44	280	50	800
39	120	45	320	63	1,000
40	150	46	360	64	1,200
41	180	47	400	65	1,500
61 47 42	220	61 47 48	500	61 47 81	2,000

**Silicon Paper, Abrasive Waterproof (Crocus Paper)**

Papel Silicon a Abrasivo Imprmeable (Papel de Azafrán)

耐水シリコンペーパー 耐水砂紙

Designed for hand sanding lacquers and under coats together with water. Used in marine and auto body refinishing. Will leave no scratch marks. The flexible cloth is coated with selected silicon carbide grain. Size: 230 x 280 mm.

**Carborundum Oil Stones**

Piedra Asentar Combinado 油砥石 金钢砂油磨石

**Carborundum oil stone:**

For carpenters and engineers. May be used dry or with oil or water. Sufficiently porous to assure a good grinding or cutting action in combination with wax or oil.

**Combination stone:**

A combination of two grit sizes. One side coarse for very dull tools, the other one with a fine grit for clean edging work. May be used wet or dry.

CODE	No.	Dimensions mm
61 47 85	3	100 x 25 x 13
86	24	115 x 38 x 16
87	29	150 x 50 x 25
88	0	205 x 50 x 25
89	Combination	205 x 50 x 25

**Carborundum Round Edge Slips**

Piedra Afilar Tipo Cuña 檍形油砥石 金钢砂楔形油磨石



A useful abrasive carborundum stone for grinding or edging of tools with curved edges. Maybe used dry or with a moderate application of oil.

CODE	No.	Dimensions mm
61 47 91	20	100 x 25 x 6.4 x 1.6
92	13	115 x 45 x 13 x 3
93	14	115 x 45 x 10 x 3
94	15	115 x 45 x 6.4 x 1.6

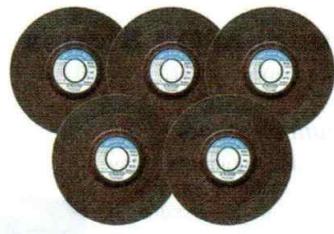
**Abrasive Wheels**

Discos Abrasivos 研削砥石 砂轮片

Abrasive wheels of various constructions for marine use in machine working and reconditioning parts. These wheels are generally used for cutting, deburring, blending and cleaning operations, and for surfacing finished hard steel, stainless steel, aluminium, carbon and brass. Abrasive wheels, regardless of the type, are constructed by organic or inorganic bonding methods.

1. Organic Bonded Wheels (Resinoid Bonded Wheel)  
 Organic wheels are wheels which are bonded by means of an organic material such as resin, rubber, shellac or other similar bonding agents.

2. Inorganic Bonded Wheels (Vitrified Bonded Wheels)  
 Inorganic wheels are wheels which are bonded by means of an inorganic material such as clay, glass, porcelain, sodium silicate, magnesium oxychloride, or metal. Wheels bonded with clay, glass, porcelain, or related ceramic materials are characterized as "vitrified bonded wheels."



### Grinding Wheel Speed

Disco Desbaste 研削丸砥石の周速度 研磨圆形磨石的周速

### Note of Caution when ordering grinding wheels:

Surface meter per minutes (SMPM) is the distance in meters that any one abrasive grain on the peripheral surface of a grinding wheel travels in 1 minute.

$$\text{Smpm} = 3.1416 \times \text{Diameter in Meter} \times \text{rpm}$$

The speed at which a grinding wheel works is important because use at too slow a speed wastes abrasive without getting much useful work in return, where as an excessive speed may result in hard grinding action and may introduce the danger of breakage. The grits, grade and structures recommended for specific grinding operations are usually based on the assumption that approximately the recommended speeds will be employed. If for some reason they can not be, then the grade at least must usually be changed to suit the particular condition.



Identification Symbols for Abrasive Wheels. (ISO. JIS)

	No. 1 Straight Wheels	A	305 x 25 x 127	C	60	K	8	V	8J	2,000 mtr/min.
No.	Shape	Face	Size	Kind of Abrasive	Grain Size	Grade	Structure	Kind of Bond	Bond Modification	Max. Speed
1	Straight	A		A (=Brown Alumina)	Coarse 10 ↑ 240	Soft E ↑ 0	Dense F 1	V=	1L	1,500
2	Cylinder				12 280	G	H 2	Vitrified	2Q	
0	Discs	B		WA	14 320	I	J 3	B=	4T	2,000
3	Single Taper			(=White Alumina)	16 400	K	L 4	Resinoid	4U	
4	Double Taper	C	OD x T x HD		20 500	M	N 5	BF=	5O	2,400
5	Recessed One Side				24 600	P	Q 6	Resinoid	5L	
6	Straight Cup			PA	30 700	R	S 7	Reinforced	5S	2,700
7	Double Recessed	D		(=Pink Alumina)	36 800	T	U 8	R=	6V	
8	Safety				46 1,000	V	W 9	Rubber	6V	3,000
9	Double Cup	E	Thickness	C	54 1,200	X	Y 10	RF=	8J	
10	Dovetail			(=Black Silicon Carbide)	60 1,500	Z	Hard 11	Rubber	8M	3,600
11	Flaring Cup	F			70 2,000			Reinforced	9L	
12	Dish				80 2,500				91L	4,800
13	Saucer	N	Hole Diam.	GC	90 3,000					
16	Cone & Plug			(=Green Silicon Carbide)	100 Very					
20	Relieved	M			120 Fine	V	W ↓ 12			
27	Depressed Center Offset Type				150	X	Y 13			
28	Depressed Center U				180	Y	Z 14			
30	Cutting	P			220	Z	Open		G7	6,000

## Definitions and Limitations of Wheel Shapes

Definiciones y Limitaciones de formas de Disco  
標準形状一覧表標準表 标准形状列表标准表

Type No.	Name and Dimension	Illustration	Type No.	Name and Dimension	Illustration
1	Straight $D \times T \times H$		11	Flaring Cup $D \times T \times H$ $E \geq T/5$ , $K > 7$ Flange Dia $+2R$	
2	Cylinder $D \times T \times W$ $W \leq T$		12	Dish $D \times T \times H$ $K >$ Flange Dia	
0	Discs $D \times T \times H$ $W > T$		13	Saucer $D \times T \times H$ $K >$ Flange Dia	
3	Single Taper $D \times T \times H$		16	Cone & Plug	
4	Double Taper $D \times T \times H$		20	Relieved $D \times T \times H$ $E \geq T/2$ , $K >$ Flange Dia	
5	Recessed One Side $D \times T \times H$ $E \geq T/2$		27	Depressed Center Offset Type $D \times U \times H$	
6	Straight Cup $D \times T \times H$ $E \geq T/5$ , $W \leq E$		28	Depressed Center UD x U x H	
7	Double Recessed $D \times T \times H$ $E \geq T/2$		30	Cutting $D \times T \times H$	
8	Safety				
9	Double Cup				
10	Dovetail				

## Standard Shapes of Wheel Faces

No.	Shape	No.	Shape	No.	Shape
A		D		N	
B		E		M	
C		F		P	

When ordering abrasive wheels, please refer to the aforementioned "identification symbols for abrasive wheels" and specify the following points.

## How to order: 61 - 48 - 20

Shape .....	Straight, Disc, Recessed, etc.
Face.....	A, B, C.....etc.
Size.....	Outside diameter x Thickness x Hole diam.
Kind of Abrasive.....	Aluminium oxide or Silicon carbide
Grain size.....	36 or 46
Grade.....	K or L ...
Structure .....	3 or 4 ...
Kind of Bond .....	Vitrified or Resinoid
Detailed Bond Type .....	8J
Max. Speed.....	R.P.M. 2,000, 4,000.....etc.

## Grinding Wheel Standard Surface Speed Table

Dia mm	305	355	405	455	510	610	660
R.P.M.	12"	14"	16"	18"	20"	24"	26"
1,300	m / min. 1,200	m / min. 1,500	m / min. 1,700	m / min. 1,900	m / min. 2,100	m / min. 2,400	m / min. 2,700
1,400	1,300	1,600	1,800	2,000	2,200	2,600	2,900
1,500	1,400	1,700	1,900	2,200	2,400	2,800	
1,600	1,500	1,800	2,000	2,300	2,600	3,000	
1,700	1,600	1,900	2,200	2,400	2,700	3,200	
1,800	1,700	2,000	2,300	2,600	2,900	3,400	
1,900	1,800	2,100	2,400	2,700	3,000	3,600	
2,000	1,900	2,200	2,500	2,900	3,300		
2,100	2,000	2,300	2,700	3,000	3,500		
2,200	2,100	2,500	2,800	3,300	3,700		
2,300	2,200	2,600	2,900	3,400	3,800		
2,400	2,300	2,700	3,100	3,600	4,000		
2,500	2,400	2,800	3,200				
2,600	2,400	2,900					
2,700	2,500	3,000					
2,800	2,600						
2,900	2,700						
3,000	2,800						

Some common types of abrasive wheels are described below with their respective specifications.

## Resinoid Offset Grinding Wheels

### Grain No. 36

Disco de desbaste/Grano No.36

レジノイドオフセット砥石 轮式偏心磨轮 (树脂)

Grain size No. 36 is widely used on ships for all purpose grinding and cutting jobs. Surface meter per minute 4,300.



## How to order: CODE

Wheel, grinding, offset, resinoid, grain No. 36, OUT DIAM x THICKNESS x HOLE DIAM mm, 4,300 mtr/min.

CODE	Outer Diam. mm	Thickness mm	Hole Diam. mm	Unit Per Pcs.
61 48 01		3		
02	100	4	15	
03		6		
61 48 04		3		
05	125	4	22	
06		6		
61 48 07		3		
08	150	6	22	
09		8		
61 48 10		3		
11	180	6	22	
12		8		
61 48 13		6		
14	205	8	22	
61 48 15		6		
16	230	8	22	

## Resinoid Cut-Off Wheels

Disco de Corte レジノイド切断砥石 轮式切割磨轮

These resin bond cutting wheels have a big advantage over rubber cut-off wheels. They resist very high cutting heats, have an aggressive cutting action, and a longer disc life. Grain No. 36 (medium grain) is recommended for general purpose ships use.



### How to order: CODE

Wheel cut-off, resinoid, grain No. 36, OUT DIAM x THICKNESS x HOLE DIAM mm, 4,300 mtr/min.

CODE	Outer Diam. mm	Thickness mm	Hole Diam. mm	Unit Per Pcs.
61 48 51	75	1.5	9.53	
52		2.0		
61 48 53	100	1.5	12.7	
54		2.0		
61 48 55	150	1.5	9.53	
56		2.0		
61 48 57	205	1.5	12.7	
58		2.0		
61 48 59		2.0	15.88	
61 48 60	150	1.5	9.53	
61		2.0		
61 48 62	225	1.5	12.7	
63		2.0		
61 48 64	180	2.0	22.23	
61 48 65	255	2.0	15.88	
66		2.5		
61 48 67	305	2.0	22.23	
68		2.5		
61 48 69	355	2.0	22.23	
70		2.5		
61 48 71	405	2.0	25.40	
72		2.5		
61 48 73	405	2.0	22.23	
74		2.5		
61 48 75	405	2.0	25.4	
76		2.5		
61 48 77	405	2.5	25.4	
78		3.0		
61 48 79	405	2.5	30.0	
80		3.0		
61 48 81	405	3.0	25.4	
82		3.5		
61 48 83	405	3.0	30.0	
84		3.5		

## Abrasive Speed Discs

### Silicon Carbide

Discos abrasivos de velocidad , Carburo de silicio  
炭化ケイ素入り研削砥石 碳化硅砂轮

Used for multiple applications, from heavy corrosion and rust removal to thick coating on metal components. Made from embedded abrasive (silicon carbide) which are bonded in a flexible fibre disc and can conform to shape. Ideal as a paint stripping disc, essentially it will strip and clean almost anything without damaging the metal. It does not shed on rust encrusted pieces, does not load and clog with soft metals, sticky coating or adhesives.

It is compatible with any M14 125 mm grinder. Packed with 10 pcs.



61 48 91	Abrasive speed disc silicon carbide, Trelawny 491.4005, 10 pcs/pkt	Pcs.
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## 35. Winches/Chain Hoists

### Portable Hand Winches

Dabrantante Manual Portátil 手動式ワインチ 便携式手摇绞车

Portable hand winches for light lifting, lowering, or hoisting. Complete with an automatic safety brake. Made of a strong steel frame with a solid center drum. Can be used in any position. Available in a non-gear type or with ratchet gears.



CODE	Lifting Capacity kg	Reeling Up Length mtr	Applicable Rope Diam mm	Weight kg
Non-gearied Type				
61 49 01	100	30	5.0	7.5
02	300	30	6.3	12.0
03	500	40	6.3	14.0
04	1,000	40	8.0	18.5
05	2,000	40	9.0	25.0
06	3,000	40	12.5	44.0
Ratchet Geared Type				
61 49 11	100	30	5.0	7.5
12	300	30	6.3	12.0
13	500	40	6.3	14.0
14	1,000	40	8.0	18.5
15	2,000	40	9.0	25.0
16	3,000	40	12.5	44.0

## Link Chain Hand-Lever Hoists

Polipastos de Palanca

レバーブロック 摆杆式链条葫芦

A small, light and strong hoists designed for all of the applications in the professional field such as transportation, bridge, general construction, civil engineering, shipbuilding, and forestry. Grade 100 chain uses a shorter and narrower link profile for greater surface area contact, which improves wear resistance and overall tensile strength. The hoist uses a Weston-style load brake with four braking surfaces, two brake pads and two brake pawls for added safety. Safety options such as load signal and overload limiter are available as well.



Unit Per Set

CODE	Capacity (tons)	Standard Chain (mtr)	Min. Distance Between Hooks (mm)	Weight (kg)
61 50 01	0.8	1.5	280	5.7
02	1.6	1.5	335	8.0
03	2.5	1.5	375	11.2
04	3.2	1.5	395	15.0
05	6.0	1.5	540	26.0
61 50 20	9.0	1.5	680	40.0

## Spur-Gear Chain Hoists

Polipastos Manuales de Cadena

チェーンブロック 直齿轮链条葫芦

A rugged body and hand wheel cover made of heavy gauge high-impact steel, giving much needed protection in extreme conditions and demanding applications to see every job through to the end.

Made from heat-treated alloy steel for higher uniform strength, the chain guards not only against scarring and wear, but it keeps workers safer on the job. A dry-type mechanical brake ensures outstanding stopping power and safety for high performance operation. Options such as explosion proof and overload limiter are available.



Unit Per Set

CODE	Rated load (ton)	Standard lift (mtr)	Min. Distance between hooks (mm)	Weight (kg)
61 50 06	0.5	2.5	285	1.0
07	1	2.5	295	1.0
08	1.5	2.5	350	1.0
09	2	3	375	2.0
18	2.5	3	420	2.0
61 50 10	3	3	510	3.0
11	5	3	600	7.0
19	7.5	3.5	770	12.0
12	10	3.5	760	17.0
13	15	3.5	1,020	48.0
61 50 14	20	3.5	1,180	72.0
15	30	3.5	1,300	114.0
16	40	3.5	1,480	197.0
17	50	3.5	1,560	294.0

## Non-Spark Chain Hoists

Polipastos de Cadena Anti-chispa

防爆用チェーンブロック 防爆式链条葫芦

Specially designed for LNG-LPG vessels and tankers, but also essential for factories handling explosive materials. Made of beryllium material except for the gears which are tightly covered by copper alloy casings assuring no-sparking during operation.

### How to order: CODE

Hoist, chain, non-spark, beryllium copper alloy,  
LIFTING CAPACITY tons



Unit Per Set

### Beryllium Copper Alloy

CODE	Lift. Cap. Ton	Lift. Cap. mtr	Tested Cap. Ton	Min. Dist. Hooks mm	Weight kg
61 50 21	0.5	2.5	0.75	330	15.9
22	1	3	1.5	390	35.2
23	2	3	3	520	44
24	3	3	4.75	690	65
25	5	3	7.5	710	102

## Trolleys

Polipastos con Carro トロリー 滑輪吊車

Plain and geared type trolleys are available. They are adaptable running rails of 9 varieties in width and are easy to set up even on running rails with a rugged surface. Equipped with closed type high grade bearings. Running wheels are suitable for both I-Beam and H-Beam running rails.



Plain Trolley



Geared Trolley

### How to order: CODE

Trolley, TYPE, LIFTING CAPACITY tons

Unit Per Pc.

CODE	Capacity Ton	Fit Beam Size (mm)				Weight kg	
		Width		Height			
		Min	Max	Min	Max		
Plain Trolley							
61 50 31	1/2	75	125	100	150	6.0	
32	1	75	125	125	250	10.0	
33	2	100	150	150	400	18.5	
34	3	100	150	180	400	26.0	
35	5	125	175	250	450	44.0	
Geared Trolley							
61 50 36	1	75	125	125	250	14.0	
37	2	100	150	150	400	23.5	
38	3	100	150	180	400	33.5	
39	5	125	175	250	450	53.5	

## 36. Gear Pullers / Bearing Pullers

### Gear & Wheel Pullers

#### 2-Arm

Extractores de 2 Garras Articuladas o Universales  
ギヤプーラー(2本足) 二臂式齿轮拉马

Designed for moving hard to pull gears, bearings or pulleys which are stuck from rust or over friction. Easy to set up and operate, just hook over the gears or wheel and tighten the screw. Will pull anything that is within arms reach and the maximum weight capacity. The arms and yokes are made of forged steel and the steel forcing screw is hardened to avoid flaring or thread damage.



G Type



GL Type

#### How to order: CODE

Puller, gear & wheel, 2-arm, TYPE, MAXIMUM SPREAD mm

Unit Per Set				
CODE	Maximum Spread mm	Maximum Reach mm	Capacity Tons	Weight kg
<b>Pullers Type "G"</b>				
61 50 50	75	55	2	0.4
51	100	70	4	0.8
52	150	100	6	1.8
53	200	240	8	3.8
54	250	250	10	6.0
<b>Pullers Type "GL"</b>				
61 50 61	100	150	4	1.0
62	150	190	6	2.3
63	200	275	8	4.4
64	250	300	10	7.0
65	300	350	12	10.0
61 50 66	375	400	15	13.0
67	450	440	18	16.0

### Gear & Wheel Pullers

#### 3-Arm

Extractores de 3 Garras Articuladas o Universales  
ギヤプーラー(3本足) 三臂式齿轮拉马

Drop forged from vanadium steel. This rigid 3 arm puller has been designed for situations where the use of a 2 arm puller is not possible.



#### How to order: CODE

Puller, gear & wheel, 3-arm, MAXIMUM SPREAD mm

CODE	Maximum Spread mm	Maximum Reach mm	Capacity Tons	Weight kg	Unit Per Set
61 50 70	125	140	5	3	
71	200	200	10	6	
72	300	270	20	17	
73	375	290	25	30	
74	450	320	30	48	

### Bearing Puller Sets for Inner Ring

Juegos de Extractores de Rodamientos/para Anillo Interior  
ベアリングプーラーセット 轴承拔全套

The slide hammer bearing puller set has been designed for removing "hard-to-pull" bearings without damaging the bearing housing. Expansion grippers are available from No. 00 to 06. These numbers 00 to 06 are indicating the last two numbers of the bearing number. When ordering, please make sure to indicate the last two bearing figures to get the right tools for your work. The expansion grippers are drop forged from vanadium alloy steel, heat-treated and chrome plated.



Remarks: Sold by set only.

Components		
1 Sliding hammer	5 Grippers, no. 00-06	
1 Steel case		

61 50 81	Bearing puller set for inner ring 5 grippers no. 00-06 in steel case	Set
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### Bearing Puller Kits for Inner & Outer Ring

Juegos de Extractores de Rodamientos para Anillo Interior y Exterior  
ベアリングプーラーキット 轴承拔成套工具

This bearing puller kit has been designed to remove the inner and outer bearing rings from bearings mounted to various fittings, shafts, etc. Made of drop forged, heat-treated vanadium alloy steel. This bearing kit is available from No. 00 to 12. These 2 figures indicate the last two numbers of the bearing. For example: Bearing series No. 6004 to be ordered: No. 04.



Components		
1 Sliding hammer	8 Grippers, no. 00-12	
1 Standard puller	1 Opening stopper	
1 One end ring spanner	1 Hexagon wrench	
1 Steel case		

61 50 82	Bearing puller kit for inner & outer ring, 8 grippers no. 00-12 in steel case	Set
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### Hydraulic Bearing Pullers

Extractores Hidráulicos de Rodamientos

油压式ベアリングプーラー 轴承拉马液压泵

Designed for the removal of frozen bearings, wheels and other gears of various sizes without hammering or heating. 2 and 3 arm coupling pullers are available in a capacity from 10 to 20 and 50 tons. They are light in weight and of a compact design. Any hand or motor pump with a sufficient oil capacity may be connected to the puller.



#### Puller, bearing, hydraulic 2 arm.

##### How to order: CODE

Puller, bearing, hydraulic 2-arm, CAPACITY tons, complete with ram, pump & hose

Unit Per Set

	CODE	61 50 85	61 50 86	61 50 87
2 ARM	Capacity Tons	10	20	50
	Maximum Reach mm	210	315	490
	Maximum Open mm	250	350	500
	Applicable Ram Stroke	150 mm 255 mm	126 mm	153 mm 300 mm

#### Puller, bearing, hydraulic 3 arm.

##### How to order: CODE

Puller, bearing, hydraulic 3-arm, CAPACITY tons complete with ram, pump & hose

Unit Per Set

	CODE	61 50 90	61 50 91	61 50 92
3 ARM	Capacity Tons	10	20	50
	Maximum Reach mm	210	314	490
	Maximum Open mm	300	420	600
	Applicable Ram Stroke	150 mm 255 mm	126 mm	153 mm 300 mm

### Hydraulic Pumps for Bearing Puller

Bombas Hidráulicas para Extractores de Rodamientos

油压式ベアリングブーラー用油圧ポンプ



The hydraulic pumps listed below are the most suitable types for use with the above mentioned hydraulic bearing pullers.

Unit Per Pcs.

CODE	Capacity up to	Max. Required Pressure	Tank Oil Capacity
61 50 95	20 ton		700 cc
97	50 ton	700 kgf/cm²	1,500 cc

### High Pressure Rubber Hose for Hydraulic Bearing Puller

Mangera de Alta Presión

高压ゴムホース 液压式轴承拉马用高压橡胶管

High pressure hydraulic hose for use with the above mentioned hydraulic bearing pullers. Their specifications are as follows.



Unit Per Pcs.

CODE	Hose Size x Length	Coupling	Max. Working Pressure
61 51 01	6 mm x 2 mtr	PT 3/8	
02	6 mm x 4 mtr	PT 3/8	
03	6 mm x 6 mtr	PT 3/8	700 kgf/cm²

### 37. Hydraulic Jacks

#### Portable Hydraulic Jacks

Gatos Hidráulicos Portátiles

ポータブル油圧ジャッキ

便携式液压千斤顶



Made with a forged steel base, tool steel pump piston, and a high quality pump cup packing. A bronze guide bearing is used at the bottom of the precision ground ram. The ram cap is steel forged. Fixed with a hardened release, lowering valve. The handle is a knurled, interlocking type.

Unit Per Set

CODE	Capacity Tons	Height		Weight kg
		Closed	Extended	
61 51 11	2	180 mm	360 mm	2.6
12	4	188	382	3.5
13	5	230	470	5.3
14	7	230	465	6.7
15	10	240	480	7.9
61 51 16	15	245	495	10.1

#### Ratchet Type Journal Jacks

Gatos Hidráulicos Portátiles

ラチェット式ジャーナルジャッキ

便携式液压千斤顶



Designed with tremendous power in a compact space for short powerful lifts. Made of heat-treated alloy steel forgings with special bronze nuts. The ratchet mechanism is fully enclosed. Each jack is furnished with a heat-treated steel lever bar.

Unit Per Set

CODE	Capacity Tons	Height		Weight kg
		Closed	Extended	
Lower	61 51 20	15	255 mm	380 mm
	21	25	255 mm	380 mm
	22	35	280 mm	410 mm
	23	50	290 mm	420 mm
	24	100	310 mm	415 mm
Middle	61 51 25	10	280 mm	430 mm
	26	25	395 mm	645 mm
	27	30	350 mm	550 mm
	28	35	410 mm	660 mm
	29	50	445 mm	695 mm
Higher	61 51 30	25	485 mm	815 mm
	31	35	535 mm	885 mm
	32	50	555 mm	905 mm

## Hydraulic Jacks

Catros Hidráulicos 油压ジャッキ 液压千斤顶

Useful for operating a variety of hydraulic tools. It is most suitable as a hydraulic opener for ships hatch covers but is also used for a variety of purposes at shipyard construction and factory job sites.



Lifting and lowering tests are executed at 100 % rated capacity. Horizontal capacity is guaranteed at up to 1/20 of the total rated capacity. The cylinder and piston are made of heat-treated, reinforced chromemolybdenum steel and the inner linings of the cylinder piston and the rod are plated with hard chrome. The couplings and screws for attachments are interchangeable. A wide variety of series and models are available. Please specify lifting capacity tons and stroke mm when ordering.

### Returning System by Spring Force

1. Available for horizontal extending or inverse operation (like press).
2. Requires only one piece of connecting rubber hose.

#### How to order: CODE

Hydraulic jack, spring return type, CAPACITY tons, STROKE mm

CODE	61 51 36	61 51 37	61 51 38	61 51 39
Capacity (ton)	10	10	20	20
Stroke (mm)	35	150	50	125
Closed Height (mm)	140	308	154	295
Outer Diam. (mm)	57	57	86	86
Weight (kg)	2.6	5.3	5.8	11
Pump Applicable	61 51 56	61 51 57	61 51 56	61 51 57

CODE	61 51 40	61 51 41	61 51 42	61 51 43
Capacity (ton)	30	50	50	50
Stroke (mm)	125	25	50	150
Closed Height (mm)	312	100	220	320
Outer Diam. (mm)	102	127	127	127
Weight (kg)	16.8	8.6	19	28
Pump Applicable	61 51 57	61 51 56	61 51 57	61 51 59

### Returning System by Hydraulic Force

1. Horizontal extension or inverse extension (like press) feasible, because of hydraulic returning.
2. Most adequate for remote controlled operation.(Requires 2 pieces of hose, for returning purpose)
3. No damage occurs in Guide-part, even when strokes are extended to maximum.

#### How to order : CODE

Hydraulic jack, hydraulic return type, CAPACITY tons, STROKE mm

CODE	61 51 46	61 51 47	61 51 48	61 51 49
Capacity (ton)	10	20	20	20
Stroke (mm)	150	55	150	300
Closed Height (mm)	338	205	390	540
Outer Diam. (mm)	57	86	86	86
Weight (kg)	6	8.4	16	20
Pump Applicable	61 51 62	61 51 62	61 51 62	61 51 63

CODE	61 51 50	61 51 51	61 51 52	61 51 53
Capacity (ton)	50	50	100	100
Stroke (mm)	150	300	150	300
Closed Height (mm)	377	602	462	613
Outer Diam. (mm)	127	127	170	170
Weight (kg)	33.9	51.8	69	86
Pump Applicable	61 51 63	61 51 64	61 51 64	61 51 65

## Hydraulic Pumps for Hydraulic Jack

Bombas Hidráulicas para Gato Hidráulico  
油圧ジャッキ用ポンプ 液压千斤顶的液压泵

A wide range of hydraulic pumps are available, the two most common types which are applicable to the Jacks described in the former chapter are as follows:



### Hand-Operated Pumps for Spring Return Jack



Widely used as the hydraulic source for the 720 kgf/cm² hydraulic jack group.

The main body is of forged special steel, has long durability, with safety valve recessed. Pumps are classified according to effective oil volumes into 5 categories (0.3, 0.7, 0.9, 1.3, 2.3 litres respectively). Oil volumes are the base for pump selection. Applicable to spring return system jacks.

#### How to order: CODE

Hydraulic pump for spring return jack, OIL VOLUME ltr

CODE	Usable Oil Volume ltr	Max. Working Pressure kgf/cm²		Output Volume per Stroke cc		Connection Thread PT	Weight kg
		Low	High	Low	High		
61 51 56	0.3	30	720	5	1.0		3.5
57	0.7	30	720	11	2.0		7.2
58	0.9	30	720	11	2.0	3/8	7.9
59	1.3	30	720	11	2.0		9.1
60	2.3	30	720	24	2.0		13.8

### Hand-Operated Pumps for Hydraulic Return Jack

To be used as the hydraulic source for the hydraulic return jack of 720 kgf/cm² series. Has a high and low automatic control-valve, the low pressure pump operates up to the loading of 30 kgf/cm². This means larger output volume and higher speed without loss of capacity. As the safety-valve is recessed inside, operation is assured. Applicable to hydraulic spring return jacks.

#### How to order: CODE

Hydraulic pump for hydraulic return jack, OIL VOLUME ltr

CODE	Usable Oil Volume ltr	Max. Working Pressure kgf/cm²		Output Volume per Stroke cc		Connection Thread PT	Weight kg
		Low	High	Low	High		
61 51 62	0.9	30	720	11	2.0		9.0
63	1.3	30	720	11	2.0		10.1
64	2.3	30	720	24	2.0	3/8	14.8
65	6.0	30	720	24	2.0		20.5

## High Pressure Hose for Hydraulic Jacks

Manguera de Alta Presión para Gatos Hidráulicos

油圧ジャッキ用高圧ゴムホース

液压千斤顶的高压胶管

Available in 3 sizes of rubber or nylon made, fitted with coupling. Length of 2 mtrs.



### How to order: CODE

High pressure hose with coupling for hydraulic jack, SIZE mm x 2 mtr

Unit Per Pcs.

CODE	Size	Pressure Kgf/cm²	Flow Ltr/Min	Thread
<b>Rubber Hose</b>				
61 51 66	6 mm	720	8	PT 3/8 x PT 3/8
67	9 "	720	20	PT 1/2 x PT 3/8
68	12 "	720	40	PT 1/2 x PT 1/2
<b>Nylon Hose</b>				
61 51 69	5 mm	720	8	PT 3/8 x PT 3/8
70	8 "	720	20	PT 1/2 x PT 3/8
71	11 "	720	40	PT 1/2 x PT 1/2

## 38. Nut Splitters / Flange Jacks

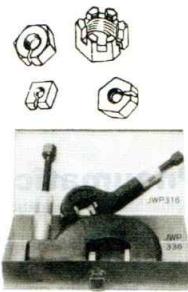
### Hydraulic Nut Splitters

Tronzatueras 油圧式ナットスプリッター

液压螺帽割刀

Splits frozen or rusted nuts without damage to the bolt. It is conveniently sized to work in hard to reach places. Made of the finest steel, heat-treated and forged for long service. To operate, just use a regular hand wrench and turn the power screw which has a hydraulic pump built inside multiplying the power exerted upon it.

A set is composed of two models:  
No. 316 size up to 1/2" BSW  
(Across Flat 20 mm)



No. 336 size up to 7/8" BSW (Across Flat 33 mm)  
Sold in sets only.

61 51 80	Nut splitter, hydraulic size up to 1/2" and 7/8" BSW, 2 pcs/set	Set
----------	-----------------------------------------------------------------	-----

### Heating Looseners for Stuck Bolt & Nut

Separador de calor de tornillos y tuercas atascados

錆付きボルトナット用加熱式弛緩セット

加热型锈死螺栓螺母拆卸器



This extremely handy tool uses induction to precisely heat a nut, steering knuckle, bearing or any other object made of magnetizable metal. In less than a minute this can heat steel to 300 till 600 degrees Celsius, and since heat causes it to expand you can remove it in a snap.

The heat generated through induction technology can be applied to parts of all different sizes: stuck nuts, bolts, steering knuckles, nipples, bearings and so forth. It generates no open fire, so it's safe to use.

To establish the right interaction between the "iDuctor" and the object to be heated, the tool is accompanied by a set of nine coils in metric sizes M8, M10, M12, M16, M20, M24, and M30. It also comes with a flexible 'wrappable' coil measuring 110 cm long. The coils are easily changed by hand.

The "iDuctor" is also usable for other specific purposes in addition to heating stuck parts, such as heating and removing coating layers from steel. Special tools are available for this specific application.

Time and power are easily adjustable. Power source: AC 220 V. The "iDuctor" is CE certified.

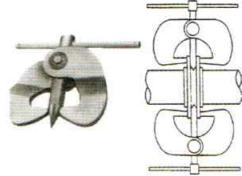
61 51 81	Heating Loosener for stuck bolt & nut "iDuctor" AC 220V	Set
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Name of Mfr.: TK Tools Industrial Equipment

## Flange Jacks

Extractor de Bridas フランジジャッキ 法兰千斤顶

The jacks exert tremendous pressure smoothly and evenly. The flanges are parted quickly and held in perfect alignment without damage to flange faces. Sold in 2 pcs/set only.



CODE	No.	For Pipe Size mm				Weight Per Pair kg
		5 kgf/cm² Cast Iron	10 kgf/cm² Cast Iron	16 kgf/cm² Cast Iron	20 kgf/cm² Cast Iron	
61 51 84	20	50 - 500	50 - 500	25 - 300	20 - 300	6
	30	400 - 1,200	450 - 600	300 - 600	300 - 600	12

## 39. Pipe Cleaners

### Plumber's Snake Wire Pipe Cleaners (Sani Snakes)

Desatascadores de Muelle パイプ清掃機 蛇形钢丝管道清通器

Used for unclogging pipes and drains. The flexible coil of non-corrosive spring steel will remove most obstructions. The wire spring is available in diameters from 6 mm to 13 mm.



CODE	Dimensions Diam. x Length	For Pipe Inner Diam.
61 52 01	6 mm x 5 mtr	20 - 32 mm
02	6 mm x 7.5 mtr	20 - 32 mm
03	6 mm x 10 mtr	20 - 32 mm
61 52 04	10 mm x 10 mtr	38 - 75 mm
05	10 mm x 15 mtr	38 - 75 mm
61 52 06	13 mm x 10 mtr	75 - 100 mm
07	13 mm x 15 mtr	75 - 100 mm

## 40. Rivets / Riveters

### Hand Rivets

Remaches Manuales ハンドリベット 手铆钉

These simple and easy-to-use rivets fasten products together easily and effectively...no complicated installations, expensive equipment or skilled operators are needed. Just drill a hole, insert and set a rivet from the same side....and high fastening connections are achieved quickly. High strength, precision-made hollow rivets are assembled on a solid mandrel. They are specially useful for blind fastening....where no access to the reverse side is available.

### Hand Riveter Tools

Herramientas Remachadoras Manuales

ハンドリベッター 手动铆钉套装

Designed to set all standard size of blind rivets.



Plier Type



Bellow Type

Unit Per Pr.

CODE	Type	Overall Length mm	Capacity Rivet Diam. mm
61 52 30	Plier	260	2.4, 3.2, 4.0, 4.8
31	Bellow	325 - 900	2.4, 3.2, 4.0, 4.8

61

Hand Tools

### Hand Riveter Kits

Estuches para remachadoras Manuales

手動リベッター携帯キット 手动铆钉工具

Contains a plier type hand riveter tool and two different diameter rivets, sized 3.2 mm and 4.0 mm each in two different lengths. Furnished in a steel carrying case.



61 52 33 Hand riveter kit in steel case

Set

### Blind Rivets for Riveter

Remaches para Remachadoras ブラインドリベット 铆钉

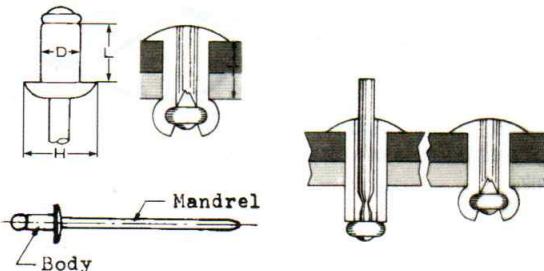
High strength, precision-made hollow rivets assembled on a solid mandrel. They are specially useful for "blind" fastening where no access to the reverse side is available. Rivets are made in various sizes with head styles in aluminium, steel, monel, copper and stainless steel. Two types of standard rivets, open and closed, are available but the most common open type is described below.



#### Standard Open Type

Standard open type rivet is a hollow rivet, pre-assembled on to a headed pin or mandrel. The mandrel is designed to fracture at a pre-determined point during the setting operation,

when the lamination forming the structure being fastened, have been drawn closely together and the whole join is tight. Normally on the vessel the rivet of aluminium alloy body and steel mandrel are used. Unless otherwise specified the aluminium alloy body and steel mandrel type will be supplied. Please specify diameter and length in mm when ordering.



#### How to order: CODE

Blind rivet, open type, aluminium alloy body & steel mandrel, RIVET DIAM x LENGTH mm

CODE	Rivet Dia mm D	Length mm L	Required Hole dia mm	Unit Per Pkt	
				Rivetting Range mm	Pcs in Pkt
61 52 36	2.4	5.7	2.5	1.0 - 3.2	100
61 52 37	3.2	4.4	3.3	1.0 - 1.6	100
	3.2	6.3	3.3	1.6 - 3.2	100
	3.2	8.0	3.3	3.2 - 4.8	100
	3.2	9.8	3.3	4.8 - 6.4	100
61 52 41	4.0	6.9	4.1	1.2 - 3.2	100
	4.0	8.6	4.1	3.2 - 4.8	100
	4.0	10.4	4.1	4.8 - 6.4	50
	4.0	14.0	4.1	6.4 - 9.6	50
61 52 45	4.8	7.5	4.9	1.6 - 3.2	50
	4.8	9.3	4.9	3.2 - 4.8	50
	4.8	11.1	4.9	4.8 - 6.4	50

### Pneumatic Riveters

Remachadoras Neumáticas エアーリベッター 气力铆钉器

Designed to set all standard sizes of blind rivets and works by compressed air to set rivets securely and quietly for large jobs. The pneumatic type works smoothly with little impact, creates no noise and assures that the rivets stay loaded in the nozzle. Allow to set aluminium, steel, and stainless steel rivets with light operations. Working air pressure is 0.5 to 0.6 MPa.



61 52 51 Pneumatic riveter  
Riveting capacity - 2.4, 3.2, 4.0, 4.8 φmm

Set

### Staple Guns Heavy Duty

Grapadoras Heavy Duty ガンタッカー 重型订书机

A heavy-duty staple gun with metal construction, ideal for professional or DIY use. Compact, light weight and impact-resistant metal die-cast body for use type 53 staples (6-14 mm).



61 52 61	Staple gun, heavy duty, type 53 staples	Pc.
61 52 62	Staple for staple gun, type 53 (6-14 mm) 1.000 pcs/Box	Box

## 41. Stainless Steel Tools

### Stainless Steel Tools

Herramientas de acero inoxidable ステンレス製工具 不锈钢工具

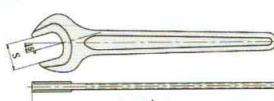
Various stainless steel tools are available and they show the following characteristics.

- 1) Resistant to corrosion and avoid steel material from corrosion in use.
- 2) Retain heat, and heat is difficult to be transmitted.
- 3) Higher rigidity than steel material
- 4) Difficult to conduct electricity compared to copper.
- 5) Simple cleaning.

### Stainless Steel Single Open End Wrenches

#### Opening 15° Angle

Llaves de tuercas de boca abierta de un solo extremo de acero inoxidable  
ステンレス製片口スパナ 不锈钢单头呆扳手



Unit Per Pcs.

CODE	Opening mm	Length mm	CODE	Opening mm	Length mm
61 60 01	8	95	61 60 12	32	275
02	10	100	13	34	290
03	12	110	14	36	310
04	13	140	15	41	345
05	14	140	16	46	375
61 60 06	17	160	61 60 17	50	410
07	19	170	18	55	450
08	22	195	19	60	490
09	24	220	20	65	530
10	27	240	21	70	570
61 60 11	30	260	61 60 22	75	610

### Stainless Steel Double Open End Wrenches

#### Opening 15° Angle

ステンレス製両口スパナ 不锈钢呆扳手



Unit Per Pcs.

CODE	Opening mm	Length mm	CODE	Opening mm	Length mm
61 60 25	5.5 x 7	90	61 60 40	21 x 26	205
26	6 x 7	92	41	22 x 24	210
27	8 x 10	100	42	23 x 26	220
28	10 x 11	115	43	24 x 27	230
29	10 x 12	120	44	24 x 30	233

(to be continued)

61 60 30	12 x 13	128	61 60 45	26 x 32	243
31	12 x 14	130	46	27 x 30	250
32	14 x 17	150	47	30 x 32	265
33	17 x 19	170	48	30 x 36	270
34	17 x 21	173	49	32 x 36	300
61 60 35	19 x 21	182	61 60 50	34 x 36	300
36	19 x 22	185	51	36 x 38	330
37	19 x 24	190	52	36 x 41	330
38	20 x 22	195	53	38 x 40	330
39	21 x 23	200	54	41 x 46	360

### S.Steel 12 Point Single End Offset Wrenches

#### Offset 60°

Llaves inglesas acodadas de un solo extremo de 12 puntos de acero inoxidable

ステンレス製片目スパナ 不锈钢单头梅花扳手



Unit Per Pcs.

CODE	Opening mm	Length mm	CODE	Opening mm	Length mm
61 60 55	22	190	61 60 60	36	295
56	24	215	61	41	330
57	27	230	62	46	365
58	30	255	63	50	400
59	32	265	64	55	445

### S.Steel 12 Point Single End Angle Wrenches

#### 45° Angle

Llaves angulares de 12 puntos de un solo extremo de acero inoxidable

ステンレス製片目アングルスパナ 45° 不锈钢单弯头梅花扳手



Unit Per Pcs.

CODE	Opening mm	Length mm	CODE	Opening mm	Length mm
61 60 65	10	119	61 60 74	32	295
66	13	151	75	34	307
67	14	151	76	36	307
68	17	174	77	38	340
69	19	207	78	41	340
61 60 70	22	207	61 60 79	46	370
71	24	250	80	50	400
72	27	250	81	55	430
73	30	295			

### S.Steel Striking 12 Point Ring Wrenches

Llaves de estrella de 12 puntos de golpeo de acero inoxidable

ステンレス製打撃メガネスパナ 不锈钢敲击扳手



Unit Per Pcs.					
CODE	Opening mm	Length mm	CODE	Opening mm	Length mm
61 60 85	24	165	61 60 92	41	225
86	27	175		93	235
87	30	185		94	250
88	32	185		95	265
89	34	200		96	274
61 60 90	36	205	61 60 97	65	298
91	38	215		98	320

**60° Offset**

Unit Per Pcs.

CODE	Opening mm	Length mm	CODE	Opening mm	Length mm
61 64 55	14	270	61 64 61	30	430
56	17	310	62	32	430
57	19	330	63	36	460
58	22	350	64	41	490
59	24	370	65	46	520
61 64 60	27	400			

**S.Steel Open & 12 Point Box Wrenches**

Llaves de tuercas de boca abierta y de tubo de 12 puntos de acero inoxidable  
ステンレス製片目 / 片口スパナ 不锈钢单头梅花 / 单头呆扳手



Unit Per Pcs.

CODE	Opening mm	Overall Length mm	CODE	Opening mm	Overall Length mm
61 64 01	8	120	61 64 15	26	290
02	9	135	16	27	290
03	10	135	17	30	320
04	11	150	18	32	340
05	12	150	19	34	360
61 64 06	13	175	61 64 20	36	360
07	14	175	21	38	430
08	17	195	22	41	430
09	19	215	23	46	480
10	20	215	24	50	520
61 64 11	21	245	61 64 25	55	560
12	22	245	26	60	595
13	23	265	27	65	595
14	24	265	28	70	630

**S.Steel Adjustable Wrenches**

Llaves ajustables de acero inoxidable

ステンレス製モンキースパナ 不锈钢活动扳手



Unit Per Pcs.

CODE	Length mm	Max Jaw Opening mm	CODE	Length mm	Max Jaw Opening mm
61 64 66	100	13	61 64 70	300	36
67	150	18	71	375	46
68	200	24	72	450	55
69	250	30	73	600	65

**S.Steel 12 Point Double End Wrenches**

Llaves de 12 puntos de doble extremo de acero inoxidable

ステンレス製両目スパナ 不锈钢梅花扳手

**15° Offset**

Unit Per Pcs.

CODE	Opening mm	Overall Length mm	CODE	Opening mm	Overall Length mm
61 64 31	5.5 x 7	115	61 64 43	21 x 23	285
32	6 x 7	115	44	21 x 26	320
33	8 x 10	130	45	22 x 24	310
34	10 x 11	140	46	24 x 27	340
35	10 x 12	140	47	24 x 30	350
61 64 36	12 x 13	160	61 64 48	26 x 32	370
37	12 x 14	160	49	27 x 30	360
38	14 x 17	220	50	30 x 32	380
39	17 x 19	250	51	30 x 36	395
40	17 x 22	250	52	32 x 36	405
61 64 41	19 x 22	280	61 64 53	34 x 36	420
42	19 x 24	310	54	36 x 41	445

**S.Steel Hook Spanner Wrenches**

Llaves de gancho de acero inoxidable

ステンレス製引掛けスパナ 不锈钢钩形扳手



Unit Per Pcs.

CODE	Circle Diam. mm	Overall Length
61 64 85	34 to 36	170 mm
86	40 to 42	176 mm
87	45 to 50	209 mm
88	52 to 55	212 mm
89	58 to 62	244 mm
61 64 90	68 to 75	250 mm
91	80 to 90	284 mm
92	95 to 100	288 mm
93	110 to 115	337 mm

**S.Steel Combination Ring & Spud Wrenches**

Llaves combinadas de estrella y de cola de acero inoxidable

ステンレス製シノ付片目スパナ 不锈钢撬棒梅花扳手

## Clip-on Tools

### Combination Wrenches



Unit Per Pc.					
CODE	Art. No.	Size mm	CODE	Art. No.	Size mm
61 07 60	K17105	5.5	61 07 71	K17117	17
61	K17106	6		93	18
62	K17107	7		72	19
63	K17108	8		94	20
64	K17109	9		73	21
61 07 65	K17110	10	61 07 74	K17122	22
66	K17111	11		75	23
67	K17112	12		76	24
68	K17113	13		95	25
69	K17114	14		78	27
61 07 92	K17115	15	61 07 79	K17130	30
70	K17116	16		80	32

### Adjustable Wrenches, Heavy Duty



CODE	Art. No.	Length		Max. Jaw Opening	Unit Per Pc.
		mm	inch		
61 13 31	K16904	110	4	17mm	
32	K16905	155	6	24 "	
33	K16908	205	8	29 "	
34	K16910	255	10	33 "	
35	K16912	305	12	38 "	
61 13 36	K16915	375	15	50 "	
37	K16918	455	18	60 "	
38	K16924	615	24	70 "	

### Comfort Rubber Grip Screwdrivers

#### Round Blade



- Slotted Screwdriver

+ Phillips Screwdriver

Unit Per Pc.

CODE	Art. No.	Size mm	CODE	Art. No.	Size mm
61 22 46	F56102	3x75	61 22 52	F56202	#0x75
47	F56107	5.5x100		53	F56207 #1x100
48	F56115	6x150		54	F56215 #2x150
49	F56120	8x200		55	F56220 #3x200
50	F56121	8x250		56	F56221 #3x250
61 22 51	F56122	8x300	61 22 57	F56222	#3x300

## 90° Universal Pipe Wrenches



Unit Per Pr.			
CODE	Art. No.	Size	Length mm
61 13 40	P104209	3/4"	280
41	P104210	1"	320
42	P104220	1-1/2"	420
43	P104220	2"	560
44	P104230	3"	630
61 13 45	P104240	4"	740

## 45° Universal Pipe Wrenches S-Shape

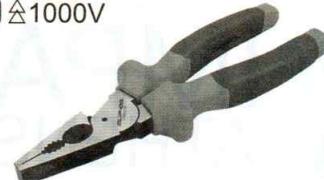


Unit Per Pr.			
CODE	Art. No.	Size	Length mm
61 13 15	P104301	1/2"	235
16	P104310	1"	330
17	P104315	1-1/2"	420
18	P104320	2"	535
19	P104330	3"	652

## VDE Insulated Linesman Pliers

CR-V DVE GS △1000V

IEC 60900  
DIN EN 60900

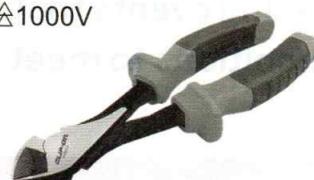


Unit Per Pr.				
CODE	Art. No.	Size	Capacity Steel Wire mm	Length mm
61 16 37	V46010	6"	Ø2.0	162
38	V46011	7"	Ø2.0	185
39	V46012	8"	Ø3.0	200

## VDE Insulated H/D Diagonal Cutters

CR-V DVE GS △1000V

IEC 60900  
DIN EN 60900



Unit Per Pr.				
CODE	Art. No.	Size	Capacity Steel Wire mm	Length mm
61 16 76	V46015	6"	Ø2.0	160
77	V46009	7"	Ø2.0	180
78	V46016	8"	Ø3.0	200

## VDE Insulated Round Nose Pliers

CR-V VDE  $\Delta$ 1000V

IEC 60900  
DIN EN 60900



Unit Per Pr.			
CODE	Art. No.	Size	Length mm
61 16 79	V46018	6"	170

## Bearing Puller Set

### BPK55 For Inner Ring

The slide hammer bearing puller set is designed for removing "hard-to-pull" bearings without damaging the bearing housing.

### BPK65 For Inner & Outer Ring

The bearing puller set is designed to remove the internal and external bearing rings from bearings mounted to various fittings, shafts, etc.



Unit Per Set.

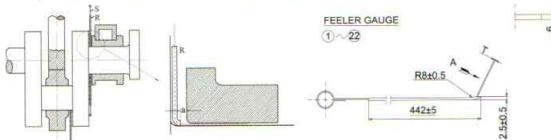
CODE	Art. No.	Content
61 50 81	A113061	Sliding Hammer * 1 Set Internal Claw * 5 Pcs Steel Case * 1 Pcs
61 50 82	A113062	Sliding Hammer * 1 Set Internal Claw * 8 Pcs Gear Puller * 1 Pcs Flare Nut Wrench * 1 Pcs Hexagon Key Wrench * 1 Pcs Steel Case * 1 Pcs

## Bearing Feeler Gauges



Used for measuring main bearing clearance of marine engine.

When the rod "S" has been pressed through the pipe "R", the pipe "R" can be pushed away from the brass by further pressing on the rod "S" and when a distance "a" is obtained it is easy to feel the fit of the feeler in the clearance.



Obs. Keep "R" against the journal as long as the feeler is in the bearing.

Unit Per Set.

CODE	Art No.	Range mm	Contents mm
65 05 87	M90012	0.75-0.95	0.75, 0.80, 0.85, 0.90, 0.95
88	M90022	0.65-0.85	0.65, 0.70, 0.75, 0.80, 0.85
89	M90032	0.05-0.35	0.05, 0.1, 0.15, 0.2, 0.25, 0.30, 0.35
90	M90042	0.40-0.70	0.40, 0.45, 0.50, 0.55, 0.60, 0.65, 0.70
91	M90052	0.75-1.05	0.75, 0.80, 0.85, 0.90, 0.95, 1.00, 1.05
65 05 92	M90062	0.40-0.60	0.40, 0.45, 0.50, 0.55, 0.60
93	M90072	0.10-1.10	0.10, 0.20, 0.30, 0.40, 0.50, 0.60, 0.70, 0.80, 0.90, 1.00, 1.10
94	M90082	0.15-0.6*	(0.15, 0.20, 0.25, 0.30, 0.35), (0.40, 0.45, 0.50, 0.55, 0.60)

\*All Blades are consist of: 0.05, 0.10 and 0.15mm thickness gauges.

## Micro Adjusting Torque Wrenches GY Series Preset



Accuracy +/-3%

CODE	Art. No.	Square Drive	Torque Range Nm/lb-in	Graduation	Length mm	Weight g
61 14 71	K16801	1/4"	2.5-12/20-105	0.05	280	680
72	K16802	1/4"	4-20/30-180	0.15	280	680
73	K16804	3/8"	6.0-30/50-250	0.25	315	820

CODE	Art. No.	Square Drive	Torque Range Nm/lb-in	Graduation	Length mm	Weight g
61 14 74	K16805	3/8"	20-100/15-75	0.5	443	1,040
75	K16806	1/2"	40-200/30-150	1.0	465	1,160
76	K16807	1/2"	50-350/37-260	2.0	525	1,300
77	K16808	3/4"	100-500/80-400	5.0	700	3,000
78	K16809	3/4"	160-800/120-600	5.0	1,040	5,900
61 14 79	K16810	3/4"	200-1,000/150-750	5.0	1,040	5,900
80	K16811	1"	160-800/120-600	5.0	1,040	5,900
81	K16812	1"	200-1,000/150-750	5.0	1,040	5,900
82	K16813	1"	300-1,500/258-1,069	10.0	1,260	9,200

## Reusable Interlocking Stencils

Reusable, adjustable and interlocking. Gothic-style characters for horizontal composition. Stencils adjust quickly for perfect character alignment, spacing and clean, bold characters. Made of brass, suitable for marking shipments, making signs and other identification on ships.



### 45 Piece Letter & Figure Sets

CODE	Art. No.	Size	Content
61 31 61	M120151	1"	A-Z*1
62	M120152	1-1/2"	0-9*1
63	M120153	2"	Other:
64	M120154	2-1/2"	Plain Ender*2, Period*1,
65	M120155	3"	Ender*1, Comma*1,
61 31 66	M120156	4"	Dash*1, Period*1,
67	M120157	5"	Spacer*2, &*1"
68	M120158	6"	

### 78 Piece Letter & Figure Sets

CODE	Art. No.	Size	Content
61 31 31	M120161	1"	A-P*2, Q*1, R-U*2, V*1,
32	M120162	1-1/2"	W*2, X-Z*2,
33	M120163	2"	0-9*2
34	M120164	2-1/2"	Other:
35	M120165	3"	Plain Ender*2, Period*2,
61 31 36	M120166	4"	Spacer*2, Comma*1,
37	M120167	5"	Apostrophe*1, Dash*1,
38	M120168	6"	Period Ender*1, &*1"

## S.Steel Allen Hexagon Wrenches

Llaves hexagonales Allen de acero inoxidable  
ステンレス製六角棒スパナ 不锈钢内六角扳手



CODE	Across Flat (mm)	L (mm)	H (mm)	CODE	Across Flat (mm)	L (mm)	H (mm)
61 68 01	1.5	59	25	61 68 11	10	110	45
02	2	59	25		12	119	48
03	2.5	59	25		13	130	52
04	3	59	25		14	140	54
05	4	65	30		15	150	58
61 68 06	5	79	32	61 68 16	15	156	60
07	6	85	37		17	162	63
08	7	88	43		18	168	65
09	8	92	44		19	173	69
10	9	97	44		20	177	72

## Stainless Steel Side Cutting Pliers

Alicates de corte lateral de acero inoxidable  
ステンレス製ペンチ 不锈钢老虎钳



CODE	Length	Weight (grm)
61 68 21	150 mm	180
22	175 mm	355
23	200 mm	465

## Stainless Steel Combination Pliers, Slip Joint

Alicates ajustables de acero inoxidable, junta deslizante  
ステンレス製コンビネーションプライヤー 不锈钢鲤鱼钳



CODE	Length	Max Slip Opening
61 68 24	150 mm	8 mm
25	200 mm	13 mm

## Stainless Steel Diagonal Cutting Pliers

Alicates de corte diagonal de acero inoxidable  
ステンレス製斜ニッパー 不锈钢斜口钳

This heavy duty diagonal cutting pliers is designed for cutting hard wires, etc. at close quarters.



CODE	Length	Weight (grm)
61 68 26	150 mm	245
27	200 mm	410

## Stainless Steel Long Nose Side Cutting Pliers Plastic Covered Handle

Alicates de punta larga de corte lateral de acero inoxidable  
ステンレス製ラジオペンチ 不锈钢尖嘴钳

An ideal tool for quick repair and electronic works.



CODE	Length	Weight (grm)
61 68 28	150 mm	245
29	200 mm	410

## Stainless Steel Water Pump Pliers

Alicates de bomba de agua de acero inoxidable  
ステンレス製ウォーターポンププライヤー 不锈钢水泵钳



61 68 30	Water Pump Pliers, Stainless Steel Opening Max. 32 mm	Pr.
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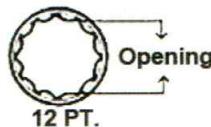
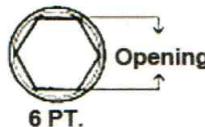
## Stainless Steel Socket Wrenches

Llaves de tubo de acero inoxidable  
ステンレス製ソケットレンチ 不锈钢套筒扳手

Made of stainless steel, suitable for work with stainless steel bolt to avoid "contact corrosion".



When ordering, please indicate the size of the square drive opening at the back of the socket : 9.5 mm (3/8"), 12.7 mm (1/2"), 19.0 mm (3/4").



### 9.5 mm (3/8") Drive 12 Point

Unit Per Pcs.

CODE	Opening mm	Overall Length mm
61 68 31	5	28
32	5.5	28
33	6	28
34	7	28
35	8	28
61 68 36	9	28
37	10	32
38	11	32
39	12	32
40	13	32
61 68 41	14	32
42	16	32
43	17	32
44	19	32

**12.7 mm (1/2") Drive 12 Point**

Unit Per Pc.

CODE	Opening mm	Overall Length mm
61 68 45	6	40
46	7	40
47	8	40
48	9	40
49	10	40
61 68 50	11	40
51	12	40
52	13	40
53	14	40
54	15	40
61 68 55	17	40
56	19	42
57	20	42
58	21	43
59	22	43
61 68 60	23	43
61	24	43
62	26	43
63	27	46
64	30	46
61 68 65	32	46

**19 mm (3/4") Drive 12 Point**

Unit Per Pc.

CODE	Opening mm	Overall Length mm
61 68 66	17	50
67	19	50
68	21	55
69	22	55
70	24	55
61 68 71	26	55
72	27	55
73	30	60
74	32	60
75	35	60
61 68 76	36	60
77	38	60
78	41	65
79	46	65
80	50	70

**Stainless Steel Ratchet Handles for Socket Wrenches**

Mango de trinquete de acero inoxidable para llaves de tubo

ステンレス製ラチェットハンドル 不锈钢棘轮手柄

Made of stainless steel, suitable for work together with stainless steel socket wrenches.



Unit Per Pc.

CODE	Square Drive	Overall Length mm	Weight (gram)
61 68 81	9.5 mm (3/8")	200	290
82	12.7 mm (1/2")	245	690
83	19.0 mm (3/4")	320	1,570

**42. Non-Sparking Tools****Non-Sparking, Non-Magnetic & Non-Corrosive for Tankers, LPG and LNG Vessels**

Two types of non-spark tools are available, a high quality grade beryllium copper alloy material and a standard grade aluminium bronze alloy. These tools are non magnetic and non corrosive. The sizes of the items specified below are standard, but larger or smaller sizes are available upon request.



Sparkless Safety Tool on Grinding



Sparking Alloy Tool on Grinding

**Non-Spark Single Open End Wrenches**

Llaves Planas Simple Ant-chispa

防爆用片口スパナ

防爆单开口扳子



Unit Per Pc.

Special Aluminium Bronze		Beryllium Copper Alloy	
CODE	Opening mm	CODE	Opening mm
61 54 01	8	61 54 21	10
02	10	22	12
03	12	23	14
04	14	24	17
05	17	25	19
61 54 06	21	61 54 26	21
07	23	19	22
08	26	27	23
09	29	20	24
10	32	28	26
61 54 11	35	61 54 38	27
12	38	29	29
13	41	39	30
14	46	30	32
15	50	31	35
61 54 16	54	61 54 40	36
17	58	32	38
18	63	33	41
		34	46
		35	50
		61 54 36	58
		37	67

**Non-Spark Double Open End Wrenches**

Llaves Planas Doble anti-chispa

防爆用両口スパナ

防爆双开口扳子



15° Angle

Unit Per Pc.

Special Aluminium Bronze		Beryllium Copper Alloy	
CODE	Opening mm	CODE	Opening mm
61 54 41	8 x 9	61 54 60	8 x 10
42	10 x 12	61	9 x 10
43	12 x 14	62	10 x 12
44	14 x 17	63	12 x 14
45	17 x 19	64	14 x 17

Special Aluminium Bronze		Beryllium Copper Alloy	
CODE	Opening mm	CODE	Opening mm
61 54 46	17 x 21	61 54 65	17 x 19
47	19 x 21	66	17 x 21
48	21 x 23	67	19 x 21
49	21 x 26	56	19 x 22
50	23 x 26	68	21 x 23
61 54 51	26 x 32	61 54 69	21 x 26
52	32 x 35	57	22 x 24
53	35 x 41	70	23 x 26
54	41 x 46	58	24 x 27
55	41 x 50	59	24 x 30
		61 54 71	26 x 29
		72	26 x 32
		77	27 x 30
		73	29 x 32
		78	30 x 32
		61 54 74	32 x 35
		79	32 x 36
		75	35 x 41
		88	36 x 41
		76	41 x 46

## Non-Spark Open & 12 Point Box Wrenches

Llaves poligonales abiertas y de 12 puntos que no generan chispas  
防爆用片口スパナ 防爆呆梅两用扳手

Made of beryllium copper alloy.



Unit Per Pcs.

CODE	Opening mm	CODE	Opening mm
61 54 89	24	61 55 11	32
61 55 00	30	12	36

## Non-Spark 12 Point Single End Offset Wrenches

Llaves de Estrella Simple Acordada Anti-chispa  
防爆用片目スパナ  
防爆单头开口扳手



15° Offset

Unit Per Pcs.

Special Aluminium Bronze		Beryllium Copper Alloy	
CODE	Opening mm	CODE	Opening mm
61 54 80	17	61 54 90	17
81	21	91	19
82	26	92	21
83	32	93	23
84	35	94	26
61 54 85	41	61 54 95	32
86	46	96	35
87	50	97	41
		98	46
		99	50

## Non-Spark 12 Point Single End Angle Wrenches

Beryllium Copper Alloy

Llaves de Estrella Simple Angulada Anti-chispa  
防爆用片目アングルスパナ 十二角单头弯颈防爆梅花扳手



15° Angle

CODE	Opening mm	CODE	Opening mm
61 55 01	17	61 55 06	32
02	19	07	35
03	21	08	41
04	23	09	46
05	26	10	50

## Non-Spark 12 Point Double End Wrenches

Llaves de Estrella Anti-chispa

防爆用両目スパナ 十二角双头防爆梅花扳手



15° Offset

Unit Per Pcs.

Special Aluminium Bronze		Beryllium Copper Alloy	
CODE	Opening mm	CODE	Opening mm
61 55 13	10 x 12	61 55 26	12 x 14
14	10 x 13	27	14 x 17
15	12 x 14	28	17 x 19
16	14 x 17	29	17 x 21
17	17 x 19	30	19 x 21
61 55 18	17 x 21	61 55 24	19 x 22*
19	19 x 21	31	21 x 26
20	21 x 26	25	22 x 24*
21	26 x 32	32	23 x 26
22	32 x 35	35	24 x 27*
61 55 23	35 x 41	61 55 42	24 x 30*
		33	26 x 32
		43	27 x 30*
		50	30 x 32*
		34	32 x 35
		61 55 57	32 x 36*
		64	36 x 41*

Remark : \* marked sizes are 45° Offset

## Non-Spark Combination Open & Spud Wrenches

Llaves Plana 1 Boca para Estructuras Anti-chispa

防爆用シノ付片口スパナ 开口和尖端防爆扳手



15° Angle Head

Unit Per Pcs.

Special Aluminium Bronze		Beryllium Copper Alloy	
CODE	Opening mm	CODE	Opening mm
61 55 36	17	61 55 44	17
37	21	45	21
38	26	46	26
39	32	47	32
40	35	48	35
61 55 41	41	61 55 49	41

## Non-Spark 12 Point Single End Angle Wrenches

Beryllium Copper Alloy

Llaves de Estrella Simple Angulada Anti-chispa  
防爆用片目アングルスパナ 十二角单头弯颈防爆梅花扳手

## Non-Spark Combination Ring & Spud Wrenches

Llaves Estrella 1 Boca para Estructuras Anti-chispa  
防爆用シノ付片目スパナ  
防爆尖尾梅花扳手



Unit Per Pcs.

Special Aluminium Bronze		Beryllium Copper Alloy	
CODE	Opening mm	CODE	Opening mm
61 55 51	17	61 55 58	17
52	21	59	21
53	26	65	24*
54	32	60	26
55	35	70	27*
61 55 56	41	61 55 76	30*
		61	32
		62	35
		77	36*
		63	41

Remark : \* marked sizes are 45° Offset

## Non-Spark T-Type 12-Point Box Wrenches

Llaves Tipo-T Anti-chispa  
防爆用T型ボックスレンチ  
T型十二角防爆套筒扳手



Unit Per Pcs.

Special Aluminium Bronze		Beryllium Copper Alloy	
CODE	Opening mm	CODE	Opening mm
61 55 66	19	61 55 71	17
67	24	72	19
68	30	73	24
69	36	74	26
		75	30

## Non-Spark Striking Single Open End Wrenches

Beryllium Copper Alloy  
Llaves Fija de Golpe Anti-chispa

防爆用打擊スパナ



Unit Per Pcs.

Beryllium Copper Alloy			
CODE	Opening mm	CODE	Opening mm
61 55 80	30	61 55 83	36
81	32	84	41
82	35	85	46

## Non-Spark Striking 12 Point Ring Wrenches

Llaves Estrella de Golpe anti-chispa  
防爆用打擊メガネスバナ  
敲击式十二角防爆棘轮扳手



Unit Per Pcs.

Special Aluminium Bronze		Beryllium Copper Alloy	
CODE	Opening mm	CODE	Opening mm
61 55 90	26 ( 6 point )	61 56 01	26
91	32 ( 6 " )	02	27
92	35 ( 6 " )	03	30
93	41 ( 6 " )	04	32
94	46 ( 6 " )	05	35

(to be continued)

		Unit Per Pcs.	
61 55 95	50 ( 6 point )	61 56 06	36
96	58 ( 6 " )	07	41
97	63 ( 6 " )	08	46
98	71 ( 12 " )	09	50
		10	55

## Non-Spark Striking 12 Point Ring Wrenches with Spring Washer

Anillo de 12 puntas sin chispa Llaves con arandela elástica  
スプリングワッシャー付き打撃メガネスバナー  
带弹簧垫圈的敲击式巨型隔板



Aluminium Bronze safety striking wrench adapted two spring washers inside the 12 point ring, which enable the wrench to remain in place without having to hold it for free hand hammer striking.

CODE	Opening mm	Overall Length (mm)	Unit Per Pcs.	
			For Bolt Size MM	WW
61 55 78	24	160	M16	-
79	27	180	M18	-
86	30	190	M20	-
87	32	190	M22	W3/4
88	36	205	M24	-
61 55 89	41	225	M27	W1
99	46	240	M30	W1-1/8
61 56 00	50	255	M33	W1-1/4
11	55	272	M36	-
14	60	272	M39	-
61 56 27	65	300	-	-
28	70	330	-	-
29	75	330	-	-

Name of Mfr.: Ampco Safety Tools

## Non-Spark Hook Spanner Wrenches

### Special Aluminium Bronze

Llaves de Gas Anti-chispa 防爆用引掛スパナ 钩形防爆板手

A tool to tighten and loosen round nuts with notches. Sizes fit to the outer diameter of round nuts.



Unit Per Pcs.

Special Aluminium Bronze		
CODE	61 56 12	61 56 13
For Hose Size mm	40	65

## Non-Spark Adjustable Wrenches

Llaves Ajustables Anti-chispa 防爆用モンキー 活络防爆板手



Unit Per Pc.			
Special Aluminium Bronze		Beryllium Copper Alloy	
CODE	O' all Length mm	CODE	O' all Length mm
61 56 15	150	61 56 22	150
16	200	23	200
17	250	24	250
18	300	25	300
19	375	26	375
61 56 20	450		

## Non-Spark Ratchet Wrenches for Socket

Llaves de Carraca Anti-chispa

防爆用ラチェットレンチ

棘轮套筒防爆扳手



The size of this wrench is determined by its opening across flats, not by bolt diameter.

Unit Per Pc.

Special Aluminium Bronze		Beryllium Copper Alloy	
CODE	Opening Across Flat mm	CODE	Opening Across Flat mm
61 56 30	17	61 56 40	17
31	26	41	19
32	32	42	21
33	35	43	22
34	41	44	24
61 56 35	50	61 56 45	26
36	58	46	27
37	63	47	30
		48	32
		49	35
		61 56 50	36

## Non-Spark Straight Pipe Wrenches

Llaves para Tubo "Stillson" Anti-chispa

防爆用パイレン 防爆直管子板手



Unit Per Pc.

Special Aluminium Bronze		Beryllium Copper Alloy	
CODE	O' all Length mm	CODE	O' all Length mm
61 56 51	200	61 56 59	200
52	250	60	250
53	300	61	300
54	350	62	350
55	450	63	450
61 56 56	600	61 56 64	600
57	900	65	900

## Non-Spark Socket Wrench Sets

Juegos de Llaves de Vaso Anti-chispa

防爆用ソケットレンチセット

防爆套筒扳手

Able to furnish 12.7 mm square drive set only.



Unit Per Set			
CODE	Rank	Square Drive	Contents
61 56 71	Special Aluminium Bronze	12.7 mm	8 sockets of m/m ... 10, 12, 14, 17, 19, 21, 23, 26 1 each of ... Speed T handle, Nut spinner handle, Sliding T handle, Universal Joint, Offset handle, Male ratchet handle and 3 length of extension bars.
61 56 72	Beryllium Copper Alloy	12.7 mm	15 sockets of m/m ... 9, 10, 12, 13, 14, 15, 16, 17, 17.5, 19, 21, 23, 26, 29, 32 1 each of ... Universal Joint, Cross bar, Male ratchet handle, Sliding T handle, Nut spinner handle, Speed T handle and 2 of extension bars.
61 56 73		12.7 mm	22 sockets of m/m... 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 26, 27, 28, 30, 32 1 each of... Deep socket, Universal joint, Male ratchet handle, Sliding T handle, Speed T handle, Driver socket, Offset handle and 2 of Extension bars.

## Non-Spark Hexagon Allen Wrenches

Beryllium Copper Alloy

Llaves Allen (Hexagonal) anti-chispa

防爆用六角棒スパナ 内六角防爆扳手



Unit Per Pc.

Beryllium Copper Alloy			
CODE	Size mm	CODE	Size mm
61 56 90	2.5 x 56	61 56 94	6 x 90
91	3 x 63	95	8 x 100
92	4 x 70	96	10 x 122
93	5 x 80		

## Non-Spark Ball Pein Hammers

Martillos de bola anti-chispa 防爆用ハンドハンマー 防爆钳工锤

Reliable ball pein hammer,  
will not produce sparks.



Unit Per Pc.

Special Aluminium Bronze		Beryllium Copper Alloy			
CODE	Nominal Size	Weight Grm.	CODE	Nominal Size	Weight Grm.
61 57 01	1/4	115	61 57 10	1/4	115
02	1/2	225	11	1/2	225
03	3/4	340	12	3/4	340
04	1	453	13	1	453
05	1-1/2	680	14	1-1/2	680
61 57 06	2	900	61 57 15	2	900
07	3	1,350	16	3	1,350

## Non-Spark Testing Hammers

Martillos de Inspección Anti-chispa

防爆用テストハンマー 防爆检测锤



Unit Per Pc.			
Special Aluminium Bronze		Weight Grm	Beryllium Copper Alloy
CODE	Nominal Size		CODE
61 57 20	1/4	130	61 57 25
21	1/2	220	26
22	3/4	300	27
23	1	380	28
			1

## Non-Spark Double Face Hammers with Handle

Mazas Doble Cara con Mango Anti-chispa  
防爆用両面ハンマー 防爆双平面锤

This double face hammer head is furnished with a handle. If a handle is not required, please specify accordingly.



Special Aluminium Bronze		Weight kgs	Beryllium Copper Alloy	
CODE	Nominal Size		CODE	Nominal Size
61 57 30	3	1.36	61 57 40	3
31	4	1.81	41	4
32	5	2.27	42	5
33	6	2.72	43	6
34	8	3.63	44	8
61 57 35	10	4.53	61 57 45	10
36	12	5.45	46	12
37	15	6.8	47	15
38	20	9.0		

## Non-Spark Chipping Hammers Handled

Piquetas con Mango Anti-chispa  
防爆用ケレンハンマー 防爆敲锈锤

Designed for chipping of scale, rust or old paint in vessels where non-sparking safety tools are indispensable.



Special Aluminium Bronze		Weight Grm	Beryllium Copper Alloy	
CODE	Nominal Size		CODE	Nominal Size
61 57 51	1/2	225	61 57 55	1/2
52	1	340	56	3/4
		453	57	1
		680	58	1-1/2

## Non-Spark Claw Hammers Handled

Martillos Uñas con Mango Anti-chispa  
防爆用釘抜きハンマー 防爆羊角锤

One side for hammering and the other for pulling out nails.



Unit Per Pc.			
Special Aluminium Bronze		Weight Grm	Beryllium Copper Alloy
CODE	Nominal Size		CODE
61 57 70	1	453	61 57 75
		680	76
			1
			1-1/2

## Non-Spark Cold Chisels

Cortafrios Anti-chispa

防爆用平タガネ 防爆冷凿

To be used on jobs where non-sparking cold chisels are required.



Unit Per Pc.

Special Aluminium Bronze		Beryllium Copper Alloy	
CODE	Size mm	CODE	Size mm
61 58 01	10 x 150	61 58 09	20 x 200
02	15 x 150	10	27 x 200
03	17 x 180	11	27 x 250
04	21 x 200	12	27 x 300
05	23 x 200		
61 58 06	25 x 215		
07	25 x 300		

## Non-Spark Concrete Chisels

Buril para Hormigón Anti-chispa

防爆用コンクリートタガネ 防爆水泥凿



Unit Per Pc.

Special Aluminium Bronze		Beryllium Copper Alloy	
CODE	Size mm	CODE	Size mm
61 58 14	20 x 200	61 58 18	20 x 200
15	20 x 250	19	25 x 200
16	25 x 250	20	25 x 250
		21	30 x 300

## Non-Spark Caulking Chisels Special Aluminium Bronze

Cinceles de Calafate Anti-chispa

防爆用コーキングタガネ

防爆填缝凿(直形)



Unit Per Pc.

Special Aluminium Bronze					
CODE	Type	Size mm	CODE	Type	Size mm
61 58 24	Straight	25 x 150	61 58 27	Bent	17 x 170
25	"	25 x 170	28	"	17 x 200
26	"	25 x 200	29	W/handle	125

## Non-Spark Crowbars

Palanquetas que no generan chispas 防爆用クローバー

防爆撬棍

Made of beryllium copper alloy.

Round Body



Hexagon Body



Unit Per Pc.

Round Body		Hexagon Body	
CODE	Blade Width x Overall Length mm	CODE	Blade Width x Overall Length mm
61 58 30	52 x 600	61 58 31	22 x 1,000

## Non-Spark Pinch Bars

Palancas de pie de cobre que no generan chispas

防爆用こじり棒 防爆撬棒

Made of beryllium copper alloy.



Unit Per Pc.			
Special Aluminium Bronze		Weight Grm	Beryllium Copper Alloy
CODE	Nominal Size		CODE
61 57 70	1	453	61 57 75
		680	76
			1
			1-1/2

61 58 32	Bar, pinch, blade width 30 mm x overall length 1,200 mm, non-spark, beryllium copper alloy	Pc.
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## Non-Spark Hand Scrapers with Handle, Beryllium Copper Alloy

Rasqueta Manual con Mango Anti-chispa

防爆用スクリッパー 防爆手刮刀

Designed for scraping in areas where non-sparking tools are required.



Unit Per Pcs.

Beryllium Copper Alloy		
CODE	SIZE mm	Remark
61 58 40	40 x 75	with handle
41	75 x 115	"

## Non-Spark Deck Scrapers with Handle

Palanquetas que no generan chispas

防爆用デッキスクレッパー 防爆撬棍

With 900 mm long handle.



Unit Per Pcs.

Special Aluminium Bronze		Beryllium Copper Alloy	
CODE	Size mm	CODE	Size mm
61 58 43	50 x 900	61 58 44	50 x 900

## Non-Spark Angle Scrapers

Rasqueta Angular anti-chispa

防爆用アンダルスクレッパー 防爆三角刮刀

Specify width and length when ordering.



Unit Per Pcs.

Special Aluminium Bronze		Beryllium Copper Alloy	
CODE	Size mm	CODE	Size mm
61 58 46	40 x 250	61 58 48	40 x 270
47	40 x 300	49	50 x 300

## Non-Spark Combination Pliers, Slip Joint

Alicates Combinados Anti-chispa

防爆用コンビネーションプライヤー 防爆鲤鱼钳

Designed for maximum gripping capacity to round objects.



Unit Per Pr.

Special Aluminium Bronze		Beryllium Copper Alloy	
CODE	Length mm	CODE	Length mm
61 58 61	150	61 58 63	160
62	200	64	210

## Non-Spark Side Cutting Pliers

Alicates Universales Anti-chispa

防爆用ベンチ

防爆钢丝钳

A non-sparking tool with powerful leverage and rigid side cutters.



Unit Per Pr.

Special Aluminium Bronze		Beryllium Copper Alloy	
CODE	Length mm	CODE	Length mm
61 58 67	180	61 58 70	150
68	250	71	170
		72	200

## Non-Spark Radio Pliers

Alicates para radio sin chispa

防爆用ラジオベンチ 防爆无线电钳

Long thin taper nose for use in close quarters. An ideal tool for quick electrical and repair works.



Unit Per Pr.

Special Aluminium Bronze		Beryllium Copper Alloy	
CODE	Length mm	CODE	Length mm
61 58 75	150	61 58 76	160

## Non-Spark Diagonal Cutting Pliers

Alicates diagonales Anti-chispa

防爆用斜角ニッパー 防爆斜口钳

This heavy duty diagonal cutting pliers is designed for cutting hard wires, etc. at close quarters.



Unit Per Pr.

Special Aluminium Bronze		Beryllium Copper Alloy	
CODE	Length mm	CODE	Length mm
61 58 80	150	61 58 81	150

## Non-Spark Water Pump Pliers

Tenacillas de Canal Anti-chispa

防爆用ウォーターポンププライヤー

防爆水泵钳



## Non-Spark Combination Pliers, Slip Joint

Alicates Combinados Anti-chispa

防爆用コンビネーションプライヤー 防爆鲤鱼钳

Designed for maximum gripping capacity to round objects.



Unit Per Pr.

Special Aluminium Bronze		Beryllium Copper Alloy	
CODE	Length mm	CODE	Length mm
61 58 85	Water pump pliers, special aluminium bronze		
86	Water pump pliers, beryllium copper alloy		"

## Non-Spark Slotted Screwdrivers, Plastic Handle

Destornilladores Plaos Anti-chispa, Mango de Plástico

防爆用ドライバー 防爆塑料柄螺丝刀

Note: The sizes listed are of blade length only, not overall length.





CODE	Description	Blade (mm)	O' all Length (mm)
61 59 60	Scoop, square fiberglass non-spark	167 x 220	330
61 59 61	Shovel, square fiberglass non-spark	290 x 445	1,040

## Non-Spark Dust Pans

Recogedores anti-chispa 防爆用チリ取り 防爆簸箕



Aluminium			Special Aluminium Bronze		
CODE	Blade mm	O' all Length mm	CODE	Blade mm	O' all Length mm
61 59 65	160 x 240	460	61 59 66 67	100 x 150 130 x 175	320 315

## Non-Spark Putty Knives

Espátulas para Masilla Anti-chispa  
防爆用パテナイフ 防爆油灰刀



Unit Per Pcs.

Special Aluminium Bronze		Beryllium Copper Alloy	
CODE	Size mm	CODE	Size mm
61 59 70	75 x 175	61 59 71 73 74 72 76	35 x 190 40 x 200 50 x 200 75 x 175 75 x 200

## Non-Spark Heavy Duty Knives

Espátulas Uso Intensivo Anti-chispa 防爆用シーナイフ 防爆水手刀

Edged cutting blade length is 150 mm and overall length is 265 mm.



61 59 75	Knife, heavy duty, beryllium copper alloy, non-spark	Pcs.
----------	------------------------------------------------------	------

## Non-Spark Hatchets

Hachas que no generan chispas 防爆用手斧 防爆斧子

Made of beryllium copper alloy.



61 59 77	Hatchet, blade length 85 mm x overall length 365 mm, non-spark, beryllium copper alloy	Pcs.
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## Non-Spark Leak Repair Tool Kits

Kits de herramientas de reparación de fugas sin chispa  
防爆用漏洩補修工具キット 防爆泄漏维修工具包

The range of non-spark leak repair tool kit provides fire and explosion protection while you are doing pipe repair job in environments where there is concern about sparks igniting flammable solvents, vapors, liquids, dusts or residues.

This range consists of 5 different non-spark pipe repair tools and materials configuration based on different principles to provide solutions for different pipe repair demand.

## Non-Spark Leak Repair Banding Tool Kits

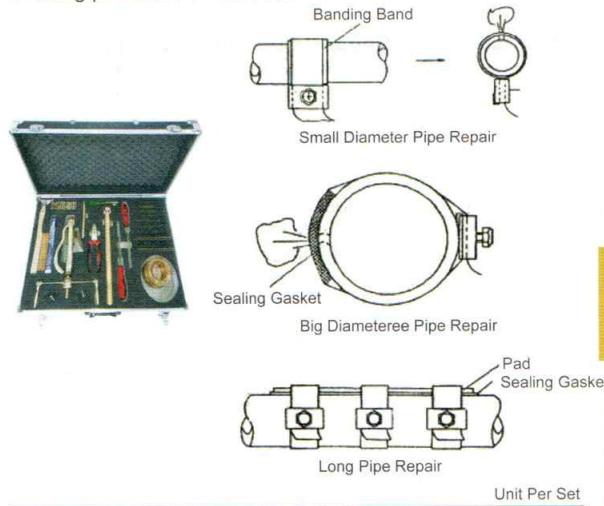
Kit de herramientas de bandas de reparación de fugas sin chispas  
防爆用漏洩補修バンド工具キット 防爆泄漏维修工具包

This kit includes the banding band to compress the repaired part after sealing with sealing stick.

Features: Strong repair capacity but less consumables

Working temperature: -40 ~ +120°C,

Working pressure: 0 ~ 240 bar



CODE	61 59 78
Model	XR-20a
Content	Non-spark banding tool 1 pcs
	Non-spark banding band 2 rolls
	Non-spark banding buckle 10 pcs
	Non-spark wire brush 1 pcs
	Non-spark pad 9 pcs
	Magic steel repair stick 114 g 1 pcs
	Non-spark combination pliers 1 pcs
	Non-spark hammer 1 pcs
	Non-spark screwdriver (-)100 mm, (+)100 mm 2 pcs
	Non-spark adjustable wrench 150 mm, 300 mm 2 pcs
	Non-spark hexagon Allen key 1 pcs
	Non-spark flat chisel 1 pcs
	Rubber band 30 x 110 mm 2 rolls
	Aluminium storage box 1 pcs

## Non-Spark Leak Repair Coupling Tools Kits

Kit de herramientas de acoplamiento de reparación de fugas sin chispa

防爆用漏洩補修カッピングキット 防爆泄漏修复耦合套件

This kit includes the coupling to compress the repaired part after sealing with magic steel stick. Can repair the pipe size from 3/8" to 5" in diameter.

Features: easy and quick operation

Working temperature: -35 ~ +91°C

Working pressure: 0 - 10 bar



Unit Per Set

CODE	61 59 79
Model	XR-40c
Content	Non-spark pipe repair coupling 10, 15, 25, 30, 38, 50, 64, 76, 100, 127 mm Non-spark bolt M12, M14 Non-spark ratchet wrench 200 mm Non-spark double open wrench 17 x 19 mm Repair rubber pad 150 mm Magic-steel repair stick 114 g Non-spark deep socket 17 mm, 19 mm Aluminum storage box
	7 pcs 2 pcs 1 pcs 1 pcs 10 pcs 1 pcs 2 pcs 1 pcs

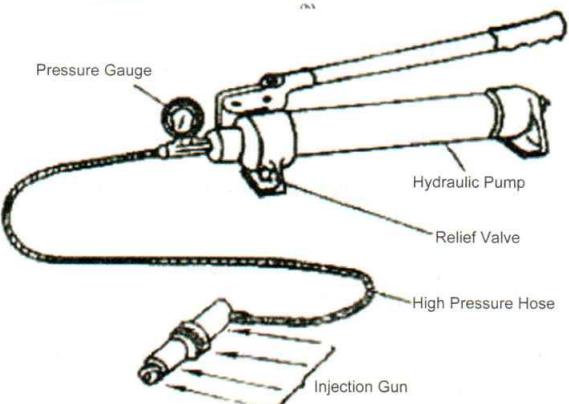
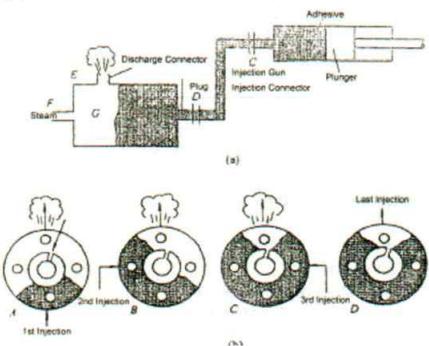
### Non-Spark Leak Repair Injection Tool Kits

Kit de herramientas de inyección de reparación de fugas sin chispa  
防爆用漏洩補修注入工具キット 防爆泄漏维修注射工具包

This kit is used to repair the high pressure and high temperature pipes or flanges. The hydraulic pump provides high power to the injection gun to penetrate the adhesives into the high pressure spraying leakage from cracks.

Features: High power, ideally to be used in extreme condition.

Working temperature: -200 ~ +600°C,  
Working pressure: 0 – 320 bar



Unit Per Set	
CODE	61 59 80
Model	XR-31i
Content	Hand hydraulic pump c/w coupler Hydraulic hose 2 m Non-spark injection gun Pressure Dial 60 MPa Non-spark piston valve Non-spark injection nut (M-12, 14, 16, 18, 20, 22, 24) Non-spark adjustable wrench 150 mm, 300 mm Non-spark double open wrench 14 x 17 mm, 19x22 mm Non-spark C-clamp Non-spark repair sticks red/green/white Aluminium storage box
	1 pcs 1 pcs 1 pcs 1 pcs 4 pcs 7 pcs 2 pcs Non-spark double open wrench 14 x 17 mm, 19x22 mm 2 pcs 2 pcs 3 box 1 pcs

### Non-Spark Leak Repair Magnetic Pressing Tools Kits

Kit de herramientas de prensado magnético de reparación de fugas sin chispa  
防爆用漏洩補修磁気プレス工具キット 防爆泄漏维修磁压工具包

This kit is suitable for using in the magnetically conductive metal surfaces. Place a magnet pad on the leaking surface while pressing the adhesive into the crack. The powerful magnetic force enhances the repairing ability.

Features: Precise and complicated operation is not required – only simply press and lift the magnet to fulfill the fixing process.



Working temperature: -40 ~ +80°C,  
Working pressure: 0 - 30 bar

Unit Per Set

Unit Per Set	
CODE	61 59 81
Model	XR-11m
Content	Non-spark magnet X300 Non-spark connector 40 x 465 mm Non-spark bolt M14 Non-spark wire brush Non-spark hammer Non-spark adjustable wrench 150 mm, 300 mm Non-spark double open wrench 14 x 17 mm, 19 x 22 mm Non-spark screwdriver (-)100 mm, (+)100 mm Lead Buckshot Non-spark repair plate 120 x 170 mm Magic-steel repair stick 114 g Aluminium storage box
	1 pcs 1 pcs 2 pcs 1 pcs 1 pcs Non-spark adjustable wrench 150 mm, 300 mm 2 pcs 2 pcs 9 pcs 4pcs 1 pcs 1 pcs

### Non-Spark Leak Repair Wedges Kits

Kit de cuñas de reparación de fugas sin chispa  
防爆用漏洩補修楔キット 防爆泄漏修复楔形工具包

This kit is used for all kinds of hole-like lower pressure repair operations. The wedges are made of red pine wood which is soft but tough, and can be easily and quickly fill the hole-like crack.

Features: Low cost and easiest operation, environment-friendly

Working temperature: -70 ~ +120°C,  
Working pressure: -1 ~ 8 bar



Unit Per Set

CODE	61 59 82
Model	XR-50w
Content	Wood handle hammer Ø60 x 310 mm Cylinder taper wedge Ø7 x 50 x 255 mm Cylinder taper wedge Ø30 x 150 mm Taper wedge Ø25 x 100 x 60 mm Taper wedge Ø80 x 200 mm Taper wedge Ø45 x 100 mm Taper wedge Ø35 x 85 mm Taper wedge Ø30 x 85 mm Taper wedge Ø25 x 75 mm Triangle wedge 45 x 70 x 255 mm Triangle wedge 25 x 70 x 250 mm Triangle wedge 40 x 45 x 195 mm Triangle wedge 25 x 40 x 145 mm Triangle wedge 40 x 40 x 110 mm Aluminium storage box
	1 pcs 2 pcs 1 pcs

### 43. Bahco Tools

Bahco tools are made of selected Swedish steel, produced from high-grade iron ore containing a minimum of impurities. High quality steel combined with precision manufacture, technical know-how and skilled craftsmanship have made Bahco Tools famous throughout the world

### Adjustable Wrenches

Llaves Ajustables  
バーコモンキースパンナ  
活动扳手



Unit Per Pcs.

CODE	Length		Max. Opening	Bahco Type No.
	mm	inch		
61 61 01	110	4-1/4	13 mm	8069
02	155	6	20 "	8070
03	205	8	27 "	8071
04	255	10	30 "	8072
05	305	12	34 "	8073
61 61 06	380	15	44 "	8074
07	455	18	53 "	8075
08	615	24	63 "	86
09	770	30	85 "	87

### Pipe Wrenches

Bahco

Llaves para Tubo バーコパイブレンチ 萬向管钳



Unit Per Pr.

CODE	Length mm	Max Opening	Bahco Type No.
61 61 11	215	30 mm	140
12	280	36 mm	141
13	370	52 mm	142
14	555	78 mm	143
15	720	110 mm	144
61 61 16	940	160 mm	147

### Corner Pipe Wrench



Unit Per Pr.

CODE	Length mm	Max. Opening	Bahco Type No.
61 61 20	320	40 mm	442B
21	430	65 mm	443B
22	535	78 mm	444B

### Open & 12 Point Box Wrenches

PU Type

Llaves Combinadas/Tipo PU

バーコ片口スパナー 开口和十二角套筒扳手



Unit Per Pcs.

CODE	Opening mm	Bahco Type No.	CODE	Opening mm	Bahco Type No.
61 61 29	6	PU 6	61 61 44	21	PU21
30	7	PU 7	45	22	PU22
31	8	PU 8	46	23	PU23
32	9	PU 9	47	24	PU24
33	10	PU10	48	25	PU25
61 61 34	11	PU11	61 61 49	26	PU26
35	12	PU12	50	27	PU27
36	13	PU13	51	28	PU28
37	14	PU14	52	29	PU29
38	15	PU15	53	30	PU30
61 61 39	16	PU16	61 61 54	32	PU32
40	17	PU17	57	36	PU36
41	18	PU18			
42	19	PU19			
43	20	PU20			

### Pliers

Bahco

Alicates Boca バーコベンチ 剪钳

### Engineer's Sidecutting Pliers



2628G

Unit Per Pr.

CODE	Length mm	Bahco Type No.
61 62 13	167	2628G - 160
14	187	2628G - 180
15	207	2628G - 200

Letter G stands for vinyl covered handle.

### Round Nose Pliers



Unit Per Pr.

CODE	Length mm	Bahco Type No.
61 62 21	152	2521G - 140

### Snipe Nose Pliers

60° offset



Unit Per Pr.

CODE	Length mm	Bahco Type No.
61 62 27	174	2427G - 160
28	190	2427G - 200

**Nippers****Bahco**

Alicates バーコニッパー 剪鉗

**Side Cutting Nipper**

Unit Per Pr.

CODE	Length mm	Bahco Type No.
61 62 31	140	1528 D

**Bulldog End Cut Nipper**

527D



1519D

Unit Per Pr.

CODE	Length mm	Bahco Type No.
61 62 36	160	527 D - 160
37	200	527 D - 200
40	230	1519 D

**Cutters****Bahco**

Herramientas de Corte バーコカッター 切割工具

**Bolt Cutter**

Unit Per Pr.

CODE	Length mm	Capacity Wire ø	Bahco Type No.
61 62 51	465	6 mm	4559 -18
52	610	8 mm	4559 -24
53	760	9 mm	4559 -30
54	910	10 mm	4559 -36
55	1,070	11 mm	4559 -42

**Cable Cutter**

2520

Unit Per Pr.

CODE	Length mm	Cutting Capacity	Bahco Type No.
61 62 61	550	30 mm	2520

**Screwdrivers**

Destornilladores バーコねじ回し 螺丝刀

Round Blade for Slot Head Screw.



Unit Per Pr.

CODE	Blade Length	Bahco Type No.
61 63 01	50 mm	BE-6110
02	75 mm	BE-6120
03	100 mm	BE-6130
04	125 mm	BE-6140
05	125 mm	BE-6150
61 63 06	150 mm	BE-6160

Round Blade for Cross Head Screw.



Unit Per Pcs.

CODE	Tip No.	Blade Length	Bahco Type No.
61 63 10	0	60 mm	BE-5600
11	1	80 mm	BE-5610
12	2	100 mm	BE-5620
13	3	150 mm	BE-5630
14	4	200 mm	BE-5640

Blade with Hexagonal Section for Slot Head Screw.



Unit Per Pcs.

CODE	Blade Length	Bahco Type No.
61 63 16	100 mm	BE-6850
17	150 mm	BE-6860
18	175 mm	BE-6870
19	200 mm	BE-6880
20	200 mm	BE-6890

Short Blade for Slot Head Screw.



Unit Per Pcs.

CODE	Tip Size mm	Blade Length	Bahco Type No.
61 63 22	0.8 x 4.0	25 mm	BE-6540
23	1.2 x 8.0	25 mm	BE-6560

Short Round Blade for Cross Head Screw.

Unit Per Pcs.

CODE	Tip No.	Blade Length	Bahco Type No.
61 63 27	1	25 mm	BE-5710
28	2	25 mm	BE-5720

**44. Ridgid Tools****Adjustable Wrenches**

Llaves Ajustables リジッドモンキーレンチ 活动扳手



Unit Per Pcs.

CODE	No.	Length		Jaw Open	
		inch	mm	inch	mm
Chrome					
61 65 01	704	4	100	1/2	10
	02	706	6	3/4	20
	03	708	8	7/8	25
	04	710	10	250	30
	05	712	12	300	35
61 65 06	715	15	375	1-11/16	40
	08	718	18	450	50
	10	724	24	600	60
Black					
61 65 11	704B	4	100	1/2	10
	12	706B	6	3/4	20
	13	708B	8	7/8	25
	14	710B	10	250	30
	15	712B	12	300	35
61 65 16	715B	15	375	1-11/16	40
	18	718B	18	450	50

Round Blade for Cross Head Screw.



## Straight Pipe Wrenches

Llaves "Stilson" リジッドストレートパイプレンチ 直管扳手



Unit Per Pcs.

CODE	Overall Length in/mm	Jaw Opening in/mm	CODE	Overall Length in/mm	Jaw Opening in/mm
61 65 30	6/150	3/4 / 20	61 65 35	18/ 450	2-1/2 / 65
31	8/200	1 / 25	36	24/ 600	3 / 80
32	10/250	1-1/2 / 40	37	36/ 900	5 / 125
33	12/300	2 / 50	38	48/1,200	6 / 150
34	14/350	2 / 50	39	60/1,500	8 / 200

## Aluminium Handle Straight Pipe Wrench

Llaves "Stilson" con Mango de Aluminio  
リジッドアルミ柄ストレートパイプレンチ 铝柄管钳



Unit Per Pcs.

CODE	No.	Handle Length inch/mm	Jaw Opening inch/mm	Weight lbs
61 65 42	810	10/ 250	1-1/2 / 40	1
43	814	14/ 350	2 / 50	2-1/2
44	818	18/ 450	2-1/2 / 65	3-3/4
61 65 45	824	24/ 600	3 / 80	6
46	836	36/ 900	5/125	11
47	848	48/1,200	6/150	18 - 1/2

## Heavy-Duty Chain Wrenches

Llaves de Cadena Uso Intensivo  
リジッド強力型 チェーンレンチ 重型链条扳手



Unit Per Pcs.

CODE	No.	Capacity			Chain Length	
		Rated inch	Pipe mm	Actual O.D. inch	inch	mm
61 65 70	C-14	2	50	5	125	18-1/2 460
71	C-18	2-1/2	60	5	125	20-1/4 500
72	C-24	3	75	5	125	20-1/4 500
73	C-36	4-1/2	110	7-1/2	185	29 725

## Strap Wrenches

Llaves con Correa (Llave de Fleje)  
リジッドストラップレンチ 皮带扳手



Unit Per Pcs.

CODE	No.	Capacity inch	Strap Width inch
61 65 76	1	1/8 ~ 2	1/2
77	2	1/8 ~ 2	1-1/8
78	5	1 ~ 5	1-3/4

## Basin Wrenches

Llave Tuerca Lavabo Extensible リジッドベースンレンチ 盆扳手

An extension wrench specially designed for the installation or repair of sink basins. Spring loaded jaws provide fast one hand ratcheting in confined, difficult to reach areas.



Unit Per Pcs.

CODE	No.	Shank Length	Capacity
61 65 90	1010	10"	3/8 - 1-1/4"
61 65 91	1017	1 - 17"	3/8 - 1-1/4"
61 65 92	1019	1 - 17"	1-1/4" - 2-1/2"

## Offset Hex Wrenches

Llaves Allen (Hexagonal) Acodada  
リジッドオフセットヘックスレンチ 弯形六角管钳



Unit Per Pcs.

CODE	No.	Capacity	Jaw Opening	Length
61 65 94	E - 110	1-1/8" - 2-5/8"	2-5/8"	9-1/2"

## Exposed Ratchet Drop Head Threaders

for Pipe Thread

Tarrajitas co Carraca de Cabezas Intercambiables

リジッドドロップヘッズスレッダー 沉头棘轮功丝扳手



This ratchet allows you to thread easily with a manual operation. This drop head style threader comes with a complete set of the necessary die sizes. Ratchet will cut a clean thread on the first time, it is not necessary to make a secondary cut.

Unit Per Set

CODE	No.	Capacity for Thread BSPT
61 66 01	00-R	1/8 to 1
03	12-R	1/8 to 2
04	R-200	1/8 to 2

## Die Head for Drop Head Threaders

Cabezas para Tarrajitas

リジッドドロップヘッズスレッダー用ダイヘッド 功丝头

British standard pipe taper threaded head will be delivered unless another type of thread is specified.

Unit Per Pcs.

Size	No.00-R	No.12-R	No.R-200
	CODE		
1/8	61 66 05	61 66 30	61 66 91
1/4	06	31	92
3/8	07	32	93
1/2	08	33	94
5/8	09	34	95
1	61 66 10	61 66 35	61 66 96
1-1/4		36	97
1-1/2		37	98
2		38	99

## Metal Carrying Cases for Drop Head Pipe and Bolt Threader

Estuches Metálicos para Terrajas

リジッドドロップヘッドスレッダー用金属ケース

管绞和螺栓功丝板手工具箱



Unit Per Pc.

CODE	Threader Type for	Weight kg
61 66 45	00 - R	3.4
47	12 - R	6.3

## Ratchet Bolt Threaders

Terrajas Ajustables

リジッドラチェットボルトスレッダー

棘轮螺栓攻丝扳手

When ordering, please specify  
type of thread.

Unit Per Pc.

CODE	No.	Capacity	
		inch	mm
61 66 54	00 - RB	1/4-1	6-25

## Ratchet Threaders

Terrajas co carraca

リジッドラチェットスレッダー

棘轮螺栓攻丝扳手

British standard pipe taper thread will be delivered unless another type of thread is specified.



Unit Per Pc.

CODE	No.	Capacity	
		inch	mm
61 66 56	65R - TC	1-2	25-50

## Dies for Ratchet Threaders

Peines para Terrajas con Carraca

リジッドラチェットスレッダー用ダイス

棘轮攻丝板牙



Unit Per Pc.

CODE	61 66 57	61 66 58	61 66 59	61 66 60
Size	1"	1-1/4"	1-1/2"	2"

## Pipe Cutters

*Ridgid*

Corta-tubos Uso Intensivo

リジッド強力型パイプカッター

强力切管器

## Heavy-Duty Pipe Cutters



1-A &amp; 2-A

3-S, 4-S and 6-S

Unit Per Pc.

CODE	No.	Capacity	Weight lbs/kg
61 66 63	1 - A	1/8 - 1-1/4"	6-1/2 / 3.0
	2 - A	1/8 - 2"	7-1/4 / 3.2
61 66 68	3 - S	1" - 3"	15 / 6.8
	4 - S	2" - 4"	18 / 8.2
	6 - S	4" - 6"	24 / 10.1

## Wide Roll Pipe Cutters



Unit Per Pc.

CODE	No.	Capacity		Weight kg
		inch	mm	
61 66 66	202	1/8 - 2	3-50	3.5

## Heavy Duty 4-Wheel Pipe Cutters



No. 42-A

No. 44-S

Unit Per Pc.

CODE	No.	Capacity	Weight lbs/kg
61 66 72	42 - A	3/4" - 2"	7/3.1
	44 - S	2-1/2" - 4"	20/9.0

## Spare Wheels for Ridgid Pipe Cutter



Unit Per Pc.

CODE	No.	Pipe Cutter Model	Range mm
61 66 75	F - 3	1-A, 2-A, 202, 42A	1/8 to 2"
76	F - 229	3-S, 4-S, 44-S	1 to 4"
77	F - 367	6-S	4 to 6"

## Bolt Cutters

Corta-permos

リジットボルトカッター

螺栓剪刀



Unit Per Pc.

CODE	No.	Cut Diam inch/mm	Length inch/mm	Remark
61 66 80	N14S	1/4 / 6	15 / 379	Center Cut
	N18S	5/16 / 8	19 / 485	"
	N24S	3/8 / 10	26 / 652	"
	N30S	7/16 / 11	31 / 800	"
	N36S	1/2 / 13	38 / 958	"
61 66 85	N42S	9/16 / 14	44 / 1,115	Center Cut

## Tubing Cutters

*Ridgid*

Cortatubos, Ridgid

リジットミゼットチューブカッター

切管器

**Midget Tubing Cutters**

Unit Per Pcs.

CODE	No.	Capacity		Length
		inch	mm	
61 67 51	103	to 5/8" O.D.	to 16 O.D.	54
52	104	to 15/16" O.D.	to 24 O.D.	65

**Tubing Cutters**

Unit Per Pcs.

CODE	No.	Capacity		Weight kg
		inch	mm	
61 67 54	150	1/8 - 1-1/8 O.D.	3-28 O.D.	0.4

**Quick Acting Tubing Cutters**

Unit Per Pcs.

CODE	No.	Capacity O.D.mm	Weight kg
61 67 60	151	6 - 42	0.4
61	152	6 - 66	0.9
62	153	32 - 90	0.9
63	154	48 - 116	1.4
64	156	100 - 170	1.9

**Flaring Tools**

Abocinadores フレーリング工具 扩管工具

CODE	No.	Flare	Tube Diameter O.D.		Unit Per Set
			1/8, 3/16, 1/4, 5/16, 3/8, 1/2, 5/8, 3/4	1/2, 5/8, 3/4, 7/8, 1	
61 67 73	458	45°	1/8, 3/16, 1/4, 5/16, 3/8, 1/2, 5/8, 3/4		
61 67 75	455	45°	1/2, 5/8, 3/4, 7/8, 1		
61 67 76	377	37°	3/16, 1/4, 5/16, 3/8, 1/2, 5/8, 3/4		
61 67 77	375	37°	1/2, 5/8, 3/4, 7/8, 1		
61 67 78	458MM	45°	4, 4.75, 6, 8, 10, 12, 14, 16 mm		

**Tube Benders****Ridgid**

Curvadoras de Tubo Tipo Palanca チュープベンダー 田埂式弯管机

**Lever-Type Tube Benders**

Unit Per Set

CODE	No.	Tube Diam O.D.	CODE	No.	Tube Diam O.D.
61 67 80	403	3/16"	61 67 86	406M	6 mm
81	404	1/4"	87	408M	8 mm
82	405	5/16"	88	410M	10 mm
83	406	3/8"	89	412M	12 mm
85	408	1/2"			

**General Ratchet Lever-Type Tube Benders**

Unit Per Set

CODE	No.	Tube Diam O.D.
61 67 92	358	For 5/8"
93	368	For 3/4"
94	378	For 7/8"

**Hickey Type Heavy Wall Conduit Benders**

Tenanza Curvadora Manual Uso Intensivo

リジッドヒッキー型コンジットベンダー

厚壁管弯管器

CODE	No.	Capacity mm	Weight kg
61 67 98	B - 1711	12, 19	1.3
99	B - 1712	25, 32	3.5

**45. Torches / Leak Detectors****Kerosene Torches**

(Blow Lamps)

Soplete de Keroseno ケロシントーチ 煤油喷灯

This powerful burner produces a strong blue blast. The flame can be regulated as required for the job. Only to be operated with kerosene.

CODE	Tank Capacity	CODE	Tank Capacity
61 70 05	1 ltr	61 70 07	2 ltr
06	1.5 ltr		

**Compact Gas Torches**

Soplete Butano de Cartucho コンパクトガストーチ 小型气体喷灯

Lightweight, compact torch for soldering or fusing wax, paint, etc. Be careful not to open the cartridge when there is still some propane remaining inside. Specify whether the full set or the spare cartridge only is required when ordering.

Wide Cartridge



Long Cartridge

61 70 16 17	Complete Set with Burner, wide cartridge Spare gas wide cartridge	Set Pc.
61 70 18 19	Complete set with burner, long cartridge Spare gas long cartridge	Set Pc.

## Refrigerant Gas Leak Detectors

Detector de fugas de gas refrigerante  
冷媒ガス漏れ検知器 制冷气体泄漏探测器

Used to quickly and accurately isolate leaks in all commercial, industrial and automotive air conditioning and refrigeration systems. It detects all HFC, CFC and HCFC refrigerants including R134A, R12 as well as blends such as R404A, R407C, R410A, and others.

Fully automatic and requires very little power to operate by using state of the art microprocessor controlled technologies.



A spare sensor housed in the battery compartment, also insures no down time when sensors are damaged or need replacing (For TA 430VA).

### Features:

- Simple, one button operation.
- Four sensitivity modes, 2 zero-resets for enabling quick and easy location of large and small leaks.
- Both visual and audible leak detection signal.
- Low battery indicator.
- Automatic power-off to conserve battery life.

CODE	61 70 22	61 70 23	Unit Per Pcs.
Model	TA430VA	TA430FR	
Applicable refrigerants	HFC/CFC/HCFC	HFC/CFC/HCFC/HFO	
Batteries	2 x 1.5V 'AA' Alkaline Batteries (3 VDC)	Rechargeable Lithium Battery (DC 3.7 V)	
Working Temperature	5 - 40°C	0 - 40°C	
Gas Sampling Method	Suction Type	NDIR Sensor	
Sensitivity	< 3g/year	< 1g/year	
Sensor Lifetime	Approx. 30 hours	-	
Probe Length	300 mm	190 mm	
Dimensions (mm)	190 x 57 x 38	290 x 320 x 110	
Weight (kg)	0.19	1.42	

Name of Mfr.: Core Enterprises Inc., Field piece

## Foam Leak Detectors

Detectores de fugas de espuma  
泡式ガス漏れ検知スプレー 泡沫气体泄漏检测喷雾器

A nonflammable, sensitive spray which will safely and effectively detect all kinds of gas or air leaks in seals, valves, cylinders, pipes, tanks, etc. When sprayed on the surface where a leak exists, it will detect by foaming, even in the low pressure leaks. It is not harmful to one's health and it has no effect upon the surface where sprayed. Foam leakage test shows foaming at 30 µm hole and differential pressure of 4-5 x 10³ Pa. NSF or other standard approved type is also available where you can use in galley.



61 70 24	Foam leak detector, 345 gm	Tin
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## Leak Detectors Dye Check

Detectores de fugas Dye Check  
リークディテクター カラーチェック 检漏仪 染色检查

Used for dye checking cracks for leaks. It consists of three different aerosol liquids to be used as cleaner, penetrant, and developer. Each aerosol can contains 300 cc (10 oz).



61 70 27	Leak detector, dye check, cleaner, 300 cc	Tin
61 70 28	Leak detector, dye check, penetrant, 300 cc	Tin
61 70 29	Leak detector, dye check, developer, 300 cc	Tin
61 70 30	Leak detector, dye check, 300 cc, 3 each/set	Set
61 70 26	Leak detector, dye check, 300 cc, 6's/set Cleaner x 3, Penetrant x 1, Developer x 2	Set

## 46. Ladders

### Aluminium Alloy Ladders

Escaleras de Aluminio アップラダー 铝合金梯



Unit Per Set

CODE	Length mtrs	Safety Load at 75° Lean kg	Weight kg
61 71 01	2.4	100	4.3
02	3.0	150	6.5
03	4.0	150	8.4
04	5.0	150	10.3
05	6.0	150	12.2

### 2-Extension Ladders

Escaleras con 2 Extensiones de Aluminio

アルミ合金二連伸縮はしご 铝合金双股伸缩梯



Unit Per Set

CODE	Length		Safety Load at 75° Lean kg	Weight kg
	Extended mtrs	Folded mtrs		
61 71 10	4.5	2.8	100	10.5
11	5.1	3.1	150	13.5
12	6.5	3.8	150	16.2
13	7.2	4.1	150	18.3
14	7.8	4.4	150	19.7
61 71 15	9.2	5.1	150	26.2
16	10.6	5.8	150	29.5

### 3-Extension Ladders

Escaleras con 3 Extensiones de Aluminio

アルミ合金三連伸縮はしご 铝合金三股伸缩梯



Made in three sections of aluminium alloy with non-slip rungs and self-aligning safety shoes. Please specify the extended length when ordering.



Unit Per Set

CODE	Length		Safety Load at 75° Lean kg	Weight kg
	Extended mtrs	Folded mtrs		
61 71 20	6.5	3.1	150	20.4
21	8.5	3.8	150	28.6
22	10.6	4.5	150	39.6
23	12.6	5.2	150	45.9
24	14.7	5.8	150	52.0

## Aluminium Alloy Step Ladders

Escaleras Tijera de Alumino

ハイステップ 铝合金踏步梯

A strong framed step ladder for use indoors or outdoors when cleaning, painting, or doing repair work. Each step is flat with non-slip gridding and there are non-slip rubber guide shoes at the bottom of the support legs. This ladder will safely support up to 100 kg of weight for up to 0.6 mtr height, and up to 160 kg of weight for 0.9 mtr height and more.



Unit Per Set

CODE	Height mtrs	Nos. of Steps	Weight kg
61 71 25	0.3	2	1.6
35	0.6	2	2.3
26	0.9	3	3
27	1.2	4	4
28	1.5	5	5
61 71 29	1.8	6	6
30	2.1	7	10
31	2.4	8	11.3
32	2.7	9	12.6
33	3.0	10	14
61 71 34	3.6	12	17

## Aluminium Alloy Folding Ladders

Escaleras Plegables Tijera-Extensible de Aluminio

二つ折りアップラダー 铝合金折叠梯

Can be used as an extended-straight-folded-or step ladder. Non-slip round steps and non-slip rubber shoes at the bottom ends. Please specify the extended length when ordering.



Unit Per Set

CODE	Length		Weight kg
	Extended mtrs	Folded mtrs	
61 71 36	2.0	0.9	6.2
37	2.7	1.2	7.6
38	3.4	1.5	9.3
39	4.1	1.9	11.2
40	4.8	2.2	13.2

## Aluminium Alloy Extension Ladders

Escaleras de extensión de aleación de aluminio

アルミ合金製伸縮はしご 铝合金伸缩梯



A compact storage size W:480 x D:83 x H:860 mm, and suitable for working at high place by extending to max length 3,800 mm. Max. withstand load: 100 kgs. Weight: 10 kg.

61 71 41	Ladder, extension, aluminium alloy, Max length 3,800 mm	Pc.
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## Aluminium Alloy Scaffolding Stands with Telescopic Leg

Andamios de aleación de aluminio con pata telescópica

アルミ製伸縮脚付足場台 带伸缩支腿的铝制脚手架平台



Scaffolding stands equipped with telescopic legs made of aluminium alloy. The telescopic legs can be extended or retracted to achieve varying heights, ensuring adaptability to various environment for maintenance work.

Unit Per Pcs.

CODE	Size mm		Load Capacity (kg)
	Top Panel	Adjustable Height	
61 71 06	400 x 881	730 – 1,030	100
07	400 x 1,200	730 – 1,030	100
08	400 x 1,200	1,030 – 1,470	100

## Aluminium Alloy Foldable Working Benches

Bancos de trabajo plegables de aleación de aluminio

アルミ合金製折り畳み式作業台 铝合金可折叠工作台



A foldable working bench made of aluminium alloy. Easy to carry and place it at your favorable working place. Please make sure to lock the foot holding stoppers before stepping on.

Outer size: W410 x D1,100 x H500 mm, Stage size: 300 x 680 mm. Max. withstand load: 100 kg. Weight: 3.5 kg.

61 71 42	Bench, working, foldable, Aluminium alloy, W410 x D1,100 x H500 mm	Pc.
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## Aluminium Alloy Working Benches

Banco de trabajo de aleación de aluminio

アルミ製作業台 铝制工作台



Working bench made of aluminium alloy. You can select from 1 to 5 levels depending on your work applications. Handrail for high level bench is also available for your safety.

Unit Per Set

CODE	Level	Size mm		Load Capacity (kg)
		Panel	Height	
61 71 09	1	600 x 400	300	150
	17	600 x 400	600	150
	18	600 x 400	900	150
	19	800 x 400	1,200	150
	43	1,000 x 400	1,500	150

## 47. Trucks / Carriers

### Wheelbarrows

Carretilla 手押し一輪車 手推车

A small hand-propelled vehicle with one or two wheels.



Unit Per Pc.

CODE	61 71 45	61 71 46
Wheel	One	Two

### Spare Wheels for Wheelbarrow

Unit Per Pc.

CODE	For	Type	Size
61 71 47 48	One-wheel	Air inflated Puncture-less	13" x 3"
61 71 49	Two-wheels	Solid	26" x 2-1/2"

### Platform Trucks

Carros-Plataformas 手動運搬車 手推车

#### With One Handle

For moving and handling all sorts of goods easily from on deck to storage facilities or accommodations. The cart has a steel platform and handle with solid cushion wheels. There are two swivel wheels located at the front and two straight wheels at the rear.



Unit Per Pc.

CODE	Platform mm	Loading kg	CODE	Platform mm	Loading kg
61 71 51	500 x 750	200	61 71 54	750 x 1,200	500
52	600 x 900	300	55	900 x 1,500	750
53	710 x 1,000	320			

#### With Two Handles

Steel plate platform and handles. Has two swivel solid cushion wheels on one side and two rigid on the other. Platform sizes larger than those listed below can be supplied but require some delivery time.



Unit Per Pc.

CODE	Platform mm	Loading kg	CODE	Platform mm	Loading kg
61 71 58	500 x 750	200	61 71 61	750 x 1,200	500
59	600 x 900	300	62	900 x 1,500	750
60	710 x 1,000	400			

#### Light Duty with Detachable Handle

For handling general merchandise. Has a steel platform and a pipe handle. The two front tires are swivel air cushion tires and the tires at the rear are straight set tires. Platform sizes smaller or larger than the size listed below are available but may require some delivery time.



61 71 64	Truck (lorry), detachable handle with 4 tires, light duty 800 x 1,200 mm	Pc.
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### Spare Wheels for Platform Truck

Solid rubber cushion wheel, available in free swivel and fixed types.



Unit Per Pc.

Free Swivel		Fixed	
CODE	Diam. mm	CODE	Diam. mm
61 71 66	100	61 71 74	100
67	130	75	130
68	150	76	150
69	180	77	180
70	200	78	200
61 71 71	250	61 71 79	250
72	300	80	300

### Folding Handy Trucks

Carritos Prácticos Plegables

折りたたみ運搬車 折叠式平板手推车



Folding type handy truck. Lightweight and compact but sturdy.

CODE	Table Size	Weight kg	CODE	Table Size	Weight kg
61 71 82	450 x 710	11	61 71 83	600 x 900	24
81	515 x 815	17.5			

### Shovel Nose Hand Trucks

Carretillas para Uso-general 丁稚車 普通型推车

#### Wood

For use in handling cartons, boxes, bags or crates of stores. Made of wood and iron reinforced. Has two solid cushion tires. Platform size is 450 mm in width and 1,750 mm overall length.



CODE	Wheel	Load Capacity
61 71 84 85	Rubber cushion solid tires Steel wheels	500 kg

#### Steel

For use in handling cartons, bags, etc. Has a steel frame and rubber solid cushion tires.



CODE	Size H x W x L mm	Load Capacity kg
61 71 86	1,180 x 500 x 500	120
87	1,180 x 480 x 480	180
88	1,780 x 630 x 530	500

### Foldable Type

Foldable type aluminium alloy made hand truck for compact storage. It is surrounded on all four sides by boards, so even small items will not be dropped during transport.



CODE	Size LxWxH mm		Load Capacity (kg)	Unit Per Pc.
	In use	Folded		
61 71 89	1,860 × 870 × 630	1,020 × 370 × 750	150	
98	2,110 × 1,090 × 810	1,340 × 370 × 810	150	

### Carriers

Carretillas Portabotellas 運搬車 搬运车

#### Gas Cylinder Carriers

For carrying acetylene oxygen and other gas cylinders. Made from strong steel frames with rubber solid cushion tires. One or two cylinder carriers are available.



CODE	For Gas Cylinder	Size H × W × L mm			Unit Per Pc.
		W	L	H	
61 71 90	Oxygen x 1	1,300	460	670	
91	Oxygen x 1 / Acetylene x 1	1,200	830	600	
92	Propane x 1	1,600	400	400	

#### Drum Carriers

Made of sturdy steel frames and designed for the easy lifting and carrying of drums. Available with air cushioned tires or solid rubber tires. The width is 450 mm and the overall length including the handle is 1,550 mm.



CODE	Description	Dimensions mm.			Unit Per Pc.
		W	L	H	
61 71 93	With two solid rubber tires				
94	With two air cushion rubber tires				

### Hydraulic Hand Pallet Trucks

Transpaletas manuales hidráulicas

油压手動パレットトラック 液压手动托盘搬运车



Hydraulic powered, hand fork-lift truck. Recommended for handling heavy materials and crates in warehouses and freight terminals. When ordering, please specify the capacity required.

CODE	Capacity	Fork Length	Weight		Unit Per Set
			kg	"	
61 71 96	1.5 ton	1,070 mm	77	kg	
97	2.5 ton	1,070 "	99	"	

### 48. Roller Conveyors / Mesh Box Pallets

#### Aluminium Roller Conveyor Units

Transportador a Rodillos de Aluminio  
アルミ製ローラーコンベヤ 铝制滚轮传送带

Lightweight aluminium conveyor belts which are easy to maneuver and convenient for moving or loading large amounts of stores or moving frozen and fresh provisions to refrigerated storage lockers. Any package with a smooth surface will roll easily on this conveyor. Please specify the length of the conveyor required when ordering.



61 72 01 ~ 03



61 72 04

Unit Per Pc.

CODE	Unit Length	Roller Width	Number of Rollers	Weight
61 72 01	1.5 Mtr	300 mm	15	9.8 kg
02	2.0 "	300 "	20	13.2 "
03	3.0 "	300 "	30	15.5 "
04	Corner 90°	300 "	19	13.2 "

#### Mesh Box Pallets

Pallets de Malla Metálica Plegable ボックスパレット 搬运篮

A foldable container made of strong, galvanized iron wire mesh with steel pallets at the bottom. Useful for the loading, unloading, and transporting of stores. They can be piled one upon the other and handled by slings using suspenders, pallet jacks, or forklifts.



Unit Per Pc.

CODE	Dimensions mm.			Mesh mm.	Wire Diam. mm.	Weight Capacity kg
	W	L	H			
61 72 10	800	1,000	850	50 × 50	6.5	1,500
11	1,000	1,000	850	50 × 50	6.5	1,500
12	1,000	1,200	850	50 × 50	6.5	2,000

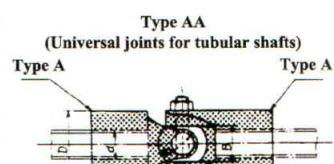
### 49. Universal Joints

#### Marine Universal Joints

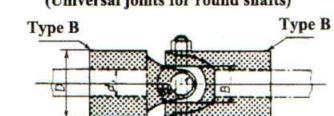
Unines Universales Marinos 船用自在継手 船用万向接头

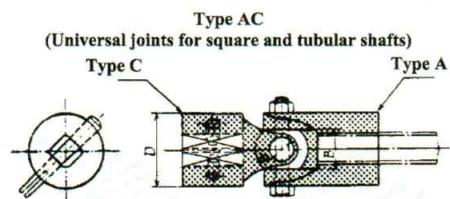
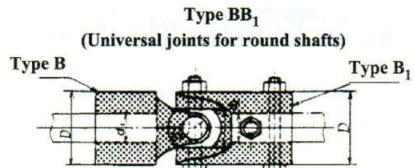
(Ref. JIS F-7452-1978)

These universal joints are used for such operating gears as water sliding doors, sky lights, valves for ventilation, valves for piping, main engine revolution indicators, or transmission gears in ships. They are classified into 4 main types according to the shape of the coupling applicable to the transmission shaft and fixing method of the shaft as shown below.



Type BB  
(Universal joints for round shafts)





Type of Yoke	Shape of Coupling	Applicable Transmission Shaft	Fixing Method
A	Round Hole	Tubular Shaft	Welding
B	"	Round	"
B <sub>1</sub>	"	"	Bolt
C	Square Hole	"	Pin

And also classified into four types, AA, BB, BB<sub>1</sub> and AC by combining the above types. See illustrations above.

Shaft Size Table      Unit: mm

Nominal Size	Dia. of Applicable Trans. Shaft		Type A	Type B, B <sub>1</sub>	Type C
	Tubular Shaft O.D.	Round Shaft	Tube Shaft	Round Shaft	Square Shaft Side Length
			Hole Dia.	Hole Dia.	Hole Dia.
20	21.2	20	27.7	20.5	17
25	34	25	34.5	25.5	19
32	-	32	-	32.5	22
38	-	38	-	38.5	27
40	48.6	-	49.1	-	-
42	-	42	-	42.5	32
48	-	48	-	48.5	36

Dimensions of steel pipes for transmission shaft for Type A

Nominal Size of Universal Joint	Carbon Steel Pipe for Ordinary Piping		
	Outside Dia.	Thickness	Inner Dia.
20	27.2	2.8	21.6
25	34.0	3.2	27.6
40	48.6	3.5	41.6

Materials are usually steel or, stainless steel. Specify when ordering.

#### How to order: CODE

Universal joint, TYPE of COMBINATION, NOMINAL SIZE, MATERIAL

Nominal Size	Material	Type				Unit Per Pcs.
		AA CODE	BB CODE	BB <sub>1</sub> CODE	AC CODE	
20	Steel	61 72 40	61 72 47	61 72 54	61 72 61	
		41	48	55	62	
		42	49	56	63	
		43	50	57	64	
		44	51	58	65	
42		61 72 45	61 72 52	61 72 59	61 72 66	
		46	53	60	67	
25	Stainless Steel	61 72 70	61 72 77	61 72 84	61 72 91	
		71	78	85	92	
		72	79	86	93	
		73	80	87	94	
		74	81	88	95	
48		61 72 75	61 72 82	61 72 89	61 72 96	
		76	83	90	97	

## 50. Lubricators / Grease Pumps

A pump unit for all types of lubricants which is easy to handle and maneuver making it suitable for work on ships as well as industrial plants or repair shops. The lubricant container is easy to open and refill. When ordering, please specify whether the lubricator you require is for oil or grease use.

### Grease Pumps

#### Air Operated

Engrasadora/Neumática エアグリース給油機 气动给油机

Air operated grease pump for use with 16 kg to 220 kg pail can. A set consists of a pump, drum cover, follow plate, and grease hose. Air inlet size is 1/4" G (PF).



#### How to order: CODE

Grease pump, air operated, for DRUM CAPACITY kg, PUMP RATIO

CODE	For Drum kg	Pump Ratio	Grease Feed Delivery	Unit Per Set	
				Diam	Length
61 74 01	16/ 20	44 : 1	500 grm/min.	30	410
02	20/ 30	44 : 1	500	30	470
03	50/ 60	44 : 1	500	30	730
04	180/ 220	44 : 1	500	30	940
05	50/ 60	54 : 1	900	30	730
61 74 06	180/ 220	54 : 1	900 grm/min.	30	940

## Accessories for Air Operated Grease Pump

Accesorios para Engrasadora Neumática

エアグリース給油機用アクセサリー 气动给油泵配件

For use with above air operated grease pumps.



CODE	Description			Unit
61 74 11	Grease gun w/bent flexible pipe			Set
12	" w/flexible pipe & swivel joint			"
13	" w/straight flex pipe			"
14	" w/rigid pipe			"
15	Triple swivel joint			Pc.
61 74 16	90° swivel joint			Pc.
17	Single swivel joint			"
18	Steel connection 1/4" x 1/4" - 3/8" x 1/4"			"
19	4 jaw grease fitting			"

## Lubrication Piston Pumps

Bomba de Pistón de Aceite  
ルブリケーションピストンポンプ 活塞泵

This pump is the ideal solution for pumping motor oil, gear oil and transmission fluid. For the purpose of making ordering easier, we have provided the following ordering table composed of the most practical specifications for marine use. For any further detailed information please contact your local supplier.



Performance Specifications

Model	LM2203A Series	LM2305A Series
Ratio	3:1	5:1
Air Motor Diameter	2"	3"
Stroke	3"	
Air Inlet Pressure	150 psi max.	

CODE	Model	Thread	Unit Per Set			
			Max. GPM Max. Flow	Max. GPM Free Flow	Air Inlet NPT (F)	Fluid Inlet / Outlet NPT (F)

2" Diameter Air Motor

61 74 21	LM2203A-11-C	NPT	6	9	1/4"	3/4 / 1/2	Stub
22	LM2203A-12-C	BSP					
23	LM2203A-31-C	NPT	6	9	1/4"	3/4 / 1/2	16 Gallon
24	LM2203A-32-C	BSP					
25	LM2203A-41-C	NPT	6	9	1/4"	3/4 / 1/2	55 Gallon
26	LM2203A-42-C	BSP					
27	LM2203A-51-C	NPT	6	9	1/4"	3/4 / 1/2	275 Gallon
28	LM2203A-52-C	BSP					

3" Diameter Air Motor

61 74 31	LM2305A-11-B	NPT	6	9	1/4"	1-1/2 / 1/2	Stub
32	LM2305A-12-B	BSP					
33	LM2305A-31-B	NPT	6	9	1/4"	1-1/2 / 1/2	16 Gallon
34	LM2305A-32-B	BSP					
35	LM2305A-41-B	NPT	6	9	1/4"	1-1/2 / 1/2	55 Gallon
36	LM2305A-42-B	BSP					
37	LM2305A-51-B	NPT	6	9	1/4"	1-1/2 / 1/2	275 Gallon
38	LM2305A-52-B	BSP					

Name of Mfr.: Ingersoll-Rand

## Grease Piston Pumps

Bomba de Pistón Grasa グリースピストンポンプ 活塞泵

These Pumps deliver unmatched performance for pumping grease with sizes to fit 35 to 400 lb. containers and working flow rates from two to four gallons per minute. For the purpose of making ordering easier, we have provided the following ordering table composed of the most practical specifications for marine use. For any further detailed information please contact your local supplier.



LM2250E Series

LM2350E Series

Performance Specifications

Model	LM2250E Series	LM2350E Series
Ratio	50:1	
Air Motor Diameter	2"	3"
Stroke	3"	
Air Inlet Pressure	150 psi max.	

Unit Per Set

CODE	Model	Thread	Flow Lbs. per Min.		Air Inlet NPT (F)	Fluid Outlet NPT (F)	Container Size
			Working	Free			

2" Diameter Air Motor

61 74 41	LM2250E-21-B	NPT	2 lbs	9.0 lbs	1/4"	3/8	35 lbs
42	LM2250E-22-B	BSP					
43	LM2250E-31-B	NPT	2 lbs	9.0 lbs	1/4"	3/8	120 lbs
44	LM2250E-32-B	BSP					
45	LM2250E-41-B	NPT	2 lbs	9.0 lbs	1/4"	3/8	40 lbs
46	LM2250E-42-B	BSP					
47	LM2250E-61-B	NPT	2 lbs	9.0 lbs	1/4"	3/8	60 lbs
48	LM2250E-62-B	BSP					

3" Diameter Air Motor

61 74 51	LM2350E-21-B	NPT	4 lbs	7.5 lbs	1/4"	3/8	35 lbs
52	LM2350E-22-B	BSP					
53	LM2350E-61-B	NPT	4 lbs	7.5 lbs	1/4"	3/8	60 lbs
54	LM2350E-31-B	NPT					
55	LM2350E-32-B	BSP	4 lbs	7.5 lbs	1/4"	3/8	120 lbs
56	LM2350E-41-B	NPT	4 lbs	7.5 lbs	1/4"	3/8	400 lbs
57	LM2350E-42-B	BSP					

Name of Mfr.: Ingersoll-Rand

## Oil and Grease Pumps

Bombas de aceite y grasa オイル & グリースポンプ 油和油脂泵

### Oil Pumps



Fast-Ball® Mini Fire-Ball® 225 Fire-Ball® 300 Fire-Ball® 425

Model	Features
Fast-Ball®	Ideal for onboard lower volume and short-run transfers of petroleum and synthetic based oils. The in-line design features fewer parts for minimal pump wear.
Mini Fire-Ball® 225	Great for low to medium volume applications. Available in 3:1 and 50:1 packages.
Fire-Ball® 300	Ideal for medium volume applications, the Fire-Ball 300 set the industry standard for years of reliable service. Available in ratios of 5:1, 15:1 and 50:1.
Fire-Ball® 425	With a robust design, the Fire-Ball is the pump of choice for your most demanding high volume applications. Available in ratios of 3:1, 6:1, 10:1, 50:1 and 75:1.

CODE	61 74 61	61 74 62	61 74 63	61 74 64	Unit Per Pcs.
Model	Fast-Ball	Fast-Flo	Fast-Flo SST	Mini Fire-Ball 225	
Pump Ratio		1 : 1		3 : 1	
Max. Fluid Output Pressure		12.4 bar		31 bar	
Fluid Flow @ 80 cpm	18-22.7 lpm	19-22.7 lpm	20-22.7 lpm	7 lpm	
Universal Pump Only	222051	226944	226945	246775	
60 Ltr Cover Mount Package		N/A		24M262	
200 Ltr Bung Mounted Package	222103	N/A	N/A	24M264	
200 Ltr Cover Mounted Package		N/A		24M263	
1,040 Ltr Bung Mounted Package	222104	N/A		24M264	

Name of Mfr.: Graco

CODE	61 74 65	61 74 66	61 74 67	61 74 68	Unit Per Pcs.
Model	Fire-Ball 300		Fire-Ball 425		
Pump Ratio	5 : 1	3 : 1	6 : 1	10 : 1	
Max. Fluid Output Pressure	62 bar	37 bar	76 bar	124 bar	
Fluid Flow @ 80 cpm	9.3 lpm	50.6 lpm	25.3 lpm	15.4 lpm	
Universal Pump Only	203876	237526	238108	205626	
60 Ltr Cover Mount Package	241046		N/A		
200 Ltr Bung Mounted Package	201048	N/A		222095	
200 Ltr Cover Mounted Package	241047	N/A		222065	
1,040 Ltr Bung Mounted Package	241049		N/A		

Name of Mfr.: Graco

**Grease Pump**

Unit Per Pcs.

CODE	61 74 69	61 74 70	61 74 80
Model	Mini Fire-Ball 225	Fire-Ball 300	
Pump Ratio	50:1	15:1	50:1
Application	High-pressure grease dispense	Medium-pressure grease dispense	High-pressure grease dispense
Max. Fluid Output Pressure	578 bar	186 bar	580 bar
Continuous Duty Flow Rate	0.15 kg/min	2.7 lpm	1.52 kg/min
16 kg Drum-Pump only	246909	206405	239877
16 kg Drum-Package	253384	241043	240885
31 kg Drum-Pump only	N/A	N/A	239877
31 kg Drum-Package	N/A	N/A	N/A
55 kg Drum-Pump only	246780	206699	239887
55 kg Drum-Package	253387	241044	240880
180 kg Drum-Pump only	246781	206700	239888
180 kg Drum-Package	253390	241045	N/A
Name of Mfr. : Graco			

Unit Per Pcs.

CODE	61 74 87	61 74 88	61 74 89
Model		Fire-Ball 425	
Pump Ratio	10:1	50:1	75:1
Application	High-pressure grease dispense	High-pressure grease dispense	High-pressure grease dispense
Max. Fluid Output Pressure	124 bar	517 bar	517 bar
Continuous Duty Flow Rate	13.3 lpm	1.52 kg/min	1.3 kg/min
16 kg Drum-Pump only	N/A	N/A	239731
16 kg Drum-Package	N/A	N/A	N/A
31 kg Drum-Pump only	N/A	N/A	239731
31 kg Drum-Package	N/A	N/A	N/A
55 kg Drum-Pump only	N/A	205394	239729
55 kg Drum-Package	N/A	241039	24M271
180 kg Drum-Pump only	965124	205395	239730
180 kg Drum-Package	965129	N/A	N/A
Name of Mfr. : Graco			

## Grease Lubricators

### Air Operated

Lubricadores de grasa accionados por aire  
ポータブルエアグリース給油機  
润滑脂润滑器空气动力



Standard Accessories

	H.P. Grease Gun HPG-G Grease Hose 2.5 Mtr. Follower Plate 300 mmΦ Check Valve Air Regulator SKR-AR	1 Pc. 1 Pc. 1 Pc. 1 Pc. 1 Pc.
SKR-66	H.P. Grease Gun HPG-G Grease Hose 2.5Mtr Air Chuck PS-20PM Flow plate 300 mmΦ Carrier Flex. Ext. Hose for Pin Type Flex. Ext. Hose for Buttonhead Type Flex. Ext. Hose for Hydraulic Type	1 Pc. 1 Pc. 1 Pc. 1 Pc. 1 Pc. 1 Pc. 1 Pc. 1 Pc.
DSR-80	Pump PD110A50 Grease Hose 2.5 Mtr. Follower Plate 300 mmΦ Check Valve Air Regulator	1 Pc. 1 Pc. 1 Pc. 1 Pc. 1 Pc.
SKR-110A50	Pump PD110A50 Grease Hose 2.5 Mtr. Follower Plate 300 mmΦ Check Valve Air Regulator	1 Pc. 1 Pc. 1 Pc. 1 Pc. 1 Pc.

Note: Additional Hose is available on request to extend the reach of the lubricator.

Unit Per Set

CODE	61 75 02	61 75 03	61 75 04
Model	SKR-66	DSR-80	SKR-110A50
Feature	For rather hard grease use. Follower plate equipped.	For rather hard grease use. Follow plate equipped.	High efficiency with large output capacity. Follower plate equipped.
Range of Applicable Grease	NLGI No.1	NLGI No.2	NLGI No.1
Pump Ratio	65 : 1	65 : 1	50 : 1
Max. Output Pressure	40.0 MPa	40.0 MPa	35.0 MPa
Max. Outlet Quantity	320 grm/min	320 grm/min	1,200 grm/min
Max. Air Consumption	212 ltr/min	212 ltr/min	320 ltr/min
Grease Capacity	16 - 18 kg	16 kg	16 - 18 kg

Name of Mfr.: Yamada Corporation

## Grease Lubricators

### Macnaught Air Operated

Bomba Engrase Manual Macnaught  
マクノートエアグリース給油機

手动高压牛油泵



PLC



P3L

CODE	61 75 11	61 75 12	Unit Per Set
Model	PLC	P3L	
Feature	Common type, simple construction, long life. Follow-Plate equipped.	Anti corrosive air motor and Follow Plate equipped. Very useful for choked nipples, because can increase output pressure up to 850 kgf/cm <sup>2</sup> by booster gun if necessary.	
Range of Applicable Grease	NLGI #2	NLGI #2	
Pump Ration Max.	50 : 1	50 : 1	
Output Pressure	350 kgf/cm <sup>2</sup>	350 kgf/cm <sup>2</sup>	
Max. Outlet Quantity	660 grm/min	540 grm/min	
Standard Accessories			
PLC	Grease Gun Grease Hose Carrier	1 Pc. 2.5 Mtr. Equipped	
P3L	Booster Gun Grease Hose Carrier	1 Pc. 2.5 Mtr. Equipped	

## High Pressure Grease Bucket Pumps

### Hand Operated

Bomba Engrase Manual con Bidón de Alta Presión

高压ハンドバケットグリースポンプ 手动活塞式高压牛油泵

Specially designed plunger easily builds lube pressure up to 25 MPa even under low loading pressure. The same extension hoses as from hand grease guns are available for various applications.



SK-55 SK-77

CODE	61 75 16	61 75 17	Unit Per Set
Model	SK-55	SK-77	
Output Pressure	25.0 MPa		
Output / Stroke	3.2 grm / stroke		
Stroke	38 - 43 mm		
Container Capacity	20 Ltr.		
Dimensions mm	281Ø x 499H	281Ø x 795H	
Name of Mfr	Yamada Corporation		
Standard Accessories			
SK-55	Grease Gun SK-G Grease Hose 2Mtr. Follower Plate	1 Pc. 1 Pc. 1 Pc.	
SK-77	HP. Grease Gun Grease Hose 2Mtr. Follower Plate Dolly S-20	1 Pc. 1 Pc. 1 Pc. 1 Pc.	

## Grease Lubricators

### Macnaught Hand Operated

Bombas de Engrase Neumáticas, Macnaught

マクノート手動グリース給油機

气体式牛油泵

A very useful outfit. Compact, lightweight, and applicable for a variety of lubricating jobs with a pressure capacity of up to 700 kgf/cm<sup>2</sup>.



K-6  
Super K-3  
Unit Per Set

CODE	61 75 21	61 75 22
Model	Mini K-6	Super K-3
Feature	Can be fitted with standard 2.5 kg small grease can. Capable of feeding 30 grease nipples at one time pump charge	Can be fitted with standard 16 kg grease pail can. Capable of feeding 80 grease nipples at one time pump charge
Max. Output Pressure	700 kgf/cm <sup>2</sup>	700 kgf/cm <sup>2</sup>
Pump Charge	50 cc	130 cc
Output/Stroke	3 cc/stroke	3 cc/stroke
Demensions mm	200ø × 450H	300ø × 890H
Grease Hose	1.5 mtrs.	3 mtrs.

## Oil Lubricators

### Air Operated

Dispensador Neumático de Aceite

ポータブルエアオイル給油機

气动注油器



Unit Per Set

CODE	61 75 31	61 75 32
Model	SGR-55	SGR-110A5
Pump Ratio	1.8 : 1	5 : 1
Max. Output Pressure	1.2 MPa	3.5 MPa
Max. Output Capacity	7 ltr / min.	11 ltr / min.
Max. Air Consumption	200 ltr / min.	390 ltr / min.
Container Capacity	20 Ltr	50 Ltr
Height mm	784	953

Name of Mfr.: Yamada Corporation.

#### Standard Accessories

SGR-55	Digital Oil Gun ODV-30D	1 Pcs.
	Oil Hose 1.5Mtr.	1 Pcs.
	Oil Tank	1 Pcs.
	Air Chuck PS-20M	1 Pcs.
SGR-110A5	Digital Oil Gun ODV-30D	1 Pcs.
	Oil Hose 3Mtr.	1 Pcs.
	Air Regulator	1 Pcs.

## Oil Bucket Pumps

### Hand Operated

Dispensador Neumático de Aceite con Pistola, Manual

ハンドバケットオイルポンプ

手动式润滑油加注泵

Dispenses all types of fluid lubricant such as gear oil, motor oil, A.T.F. (Automatic Transfer Fluid) and others with easy operation. A limited movement of the lever provides high volume lubricant delivery.



STB-60



STB-70

Unit Per Set

CODE	61 75 36	61 75 37
Model	STB-60	STB-70
Pump Output	40 cc / stroke	
Container Capacity	20 Ltr.	
Height	795 mm	
Standard Accessories	Oil Hose 2 Mtr. Hose 2 Mtr. w/ Nozzle Dolly S-20 Digital Flowmeter with Filter	1 Pcs. 1 Pcs. 1 Pcs. 1 Pcs. 1 Pcs.

Name of Mfr.: Yamada Corporation.

## Oil Volume Bucket Pumps

### Hand Operated

Dispensador Neumático de Aceite, Manual a Palanca

ハンドバケットボリュームポンプ 大容量手动式润滑油加注泵

Handles either mobile grease or oil especially to serve button head fittings on earth-moving equipment, farm equipment, industrial machines, etc. Volume lubricant delivery gives fast and positive lubrication under maximum lube pressure of 5 MPa on the VO-50 and 2 MPa on the VO-8.



VO-8



VO-50

Unit Per Set

CODE	61 75 41	61 75 42
Model	VO-8	VO-50
Output/Stroke	20 cc/stroke	24 cc/stroke
Container Capacity	8 Ltr	15 Ltr
Dimensions mm	200Φ × 477H	300Φ × 530H
Standard Accessories	Oil Hose 1 Mtr. 1 Pcs.	Oil Hose 1.5 Mtr. 1 Pcs.
	Button Head Coupler 1 Pcs.	Button Head Coupler 1 Pcs.

Name of Mfr.: Yamada Corporation.

## Lubricating Hose for Model SKR and SGR Series

Manguera lubricante/para Modelo de Series  
SKR y SGR

給油機用ホース 油管

Max. Working Pressure

SKR Grease Hose	34.5 MPa	H.P.
SGR Oil Hose	7 MPa	L.P.



### How to order: CODE

GREASE or OIL hose, DIAM x LENGTH, with fitting, PART/NO.

CODE	P/N	Size		Fitting at Both Ends	Unit Per Lgh
		Diam.	Length		
<b>SKR Grease Hose</b>					
61 75 51	695062	1/4	1.5 Mtrs.	PF1/4 Male Thread (G)	
52	695050		2 "		
53	695034		2.5 "		
54	695049		3 "		
55	695098		5 "		
56	695099		10 "		
<b>SGR Oil Hose</b>					
61 75 57	695052	3/8	1.5 Mtrs.	PT3/8 Male Thread (R)	
58	695051		2 "		
59	695103		3 "		
60	695700	1/2	3 "	PT1/2 Male Thread (R)	

## Accessories

### for Model SKR and SGR Series and GLC

Accesorios/para Modelo de Series SKR y SGR y GLC  
給油機用アクセサリー 注油机 SKR & SGR 用配件

### Control Valves

Válvulas de Control コントロールバルブ 控制阀

	<b>61 75 65</b> H.P. Grease-Gun HPG-G P/N 851985 Standard for Model SKR-55/66/110A50 Containing Nozzle CNP-2 P/N 804911 Swivel Joint ass'y P/N 802910 Inlet PS 1/4 Female (G)
	<b>61 75 68</b> Oil Gun ODV-30 P/N 686857 Max. Working Pressure 7 MPa Inlet PT 3/8 Female (Rc)
	<b>61 75 69</b> Digital Oil Gun ODV-30D P/N 686858 Max. Working Pressure 7 MPa Inlet PT 3/8 Female (Rc)

CODE	P/N	Description	Unit Per Pcs.
61 75 65	851985	H.P. Grease Gun w/Swivel Joint	
61 75 68	686857	Oil Gun ODV-30	
69	686858	Digital Oil Gun ODV-30D	

## Specifications for Extension Couplers & Adaptors

Especificaciones de Extensiones y Adaptadores

エクステンションカップラー/アダプター 油杯

	<b>61 75 75</b> Straight Adaptor HSP-1 P/N 804903, L=120 mm, PT 1/8" Male (R)
	<b>61 75 76</b> Straight Long Adaptor HSP-2 P/N 804904, L=240 mm, PT 1/8" Male (R)
	<b>61 75 77</b> Needle Adaptor HSP-3 P/N 800701 for concealed hinges or tight spots, L=135 mm, PT 1/8" Male (R)
	<b>61 75 79</b> Straight Extra Long Adaptor HSP-10 P/N 804907, L=450mm, PT 1/8" Male (R)
	<b>61 75 80</b> Standard Hydraulic Adaptor CNP-1, P/N 804910, L=185 mm, PT 1/8" Male (R)
	<b>61 75 81</b> Small Dia. Hydraulic Adaptor CNP-2 P/N 804911 for use with hand grease gun, L=185 mm, PT 1/8" Male (R)
	<b>61 75 82</b> Long Hydraulic Adaptor CNP-13 P/N 804912, L=335 mm PT 1/8" Male (R)
	<b>61 75 83</b> Standard Hydraulic Coupler CNP-1H, P/N 686445, L=38.5 mm PT 1/8" Female (Rc)
	<b>61 75 84</b> Small Dia. Hydraulic Coupler CNP-2H P/N 686446, L=39 mm, PT 1/8" Female (Rc)
	<b>61 75 85</b> Hydraulic Coupler Extension Hose SPK-5 P/N 850392, L=420 mm

CODE	Model	P/N	Name	Unit Per Pcs.
61 75 75	HSP-	1	Straight Adaptor	
	76	2	Straight Long Adaptor	
	77	3	Needle Adaptor	
	79	10	Straight Extra Long Adaptor	
61 75 80	CNP-	1	Straight Hydraulic Adaptor	
	81	2	Small Dia. Hydraulic Adaptor	
	82	13	Long Hydraulic Adaptor	
	83	1H	Straight Hydraulic Coupler	
61 75 84	84	2H	Small Dia. Hydraulic Coupler	
	61 75 85	5	Hydraulic Coupler Ext. Hose	

## Grease Lock Couplers

Engrasadores グリースロックカブラー 油脂锁定耦合器

### GLC-70

Easy coupling - leak proof greasing  
- easy release. Easy connect and disconnect to/from grease fitting, by operating the lever.



Unit Per Pcs.

CODE	61 75 87
Model	GLC-70
Operating Pressure	69 MPa (703 kgf/cm <sup>2</sup> )
Connection	Rc 1/8"
Dimensions mm	L : 89.6 x Ø16
Weight grm	100

## Microhose Type Grease Lock Couplers



Unit Per Pcs.

CODE	Model	Specification
61 75 88	SPK-500S	500 mm (Micro hose connection R 1/8")
89	SPK-1000S	1,000 mm (Micro hose connection R 1/8")
90	SPK-1500S	1,500 mm (Micro hose connection R 1/8")

## Grease Pump Packages

Equipo de Engrase  
グリースポンプパッケージ 气动给油泵

These Grease Pump Packages are available in two models. For the purpose of making ordering easier, we have provided the following ordering table composed of the most practical specifications for marine use. For any further detailed information please contact your local supplier.



Unit Per Set

CODE	61 75 45	61 75 46
Model	LP2009-2-B	LP2010-2-B
Follower Plate	286 mm	332 mm
Ratio	50 : 1	
Air Motor Diameter	2"	
Air Inlet (Female)	Rp 1/4	
Air Inlet Pressure Range Psi (bar)	0-150 (0-10.3)	
Fluid Pressure Range Psi (bar)	0-7,500 (0-517.2)	
Volume/Cycle oz (ml)	0.17 (4.91)	
Maximum Delivery/Minute Kg (lbs)	4.1 (9)	
Cycles/Minutes Rec'd @ Working Flow	80	
Displacement in <sup>3</sup> per cycle	0.300	
Pump Construction	Carbon Steel	

Name of Mfr.: Ingersoll-Rand

## 51. Grease Nipples / Grease Guns

### Grease Nipples

for Hydraulic Fittings

Engrasadores para accesorios hidráulicos

グリースニップル 油嘴液压配件

Chrome or brass plated steel material.

### How to order: CODE

Grease nipple, TYPE, NOMINAL SIZE

Illustration	CODE	Type	Nominal Size (Thread)	Unit Per Pcs.
	61 76 05	A Straight	M6x0.5	
	06		M6x1.0	
	07		PT 1/8	
	08		PT 1/4	
	09		PT 3/8	
	10		NPT 1/8	
	11		NPT 1/4	
	61 76 13	B 67.5°	PT 1/8	
	14		PT 1/4	
	15		NPT 1/8	
	61 76 16	C 90°	PT 1/8	JIS B 1575
	17		PT 1/4	
	61 76 18	Straight	6 mm	
	61 76 21	Pin Type	PF 1/8	
	22		PF 1/4	
	23		PF 3/8	
	24		PT 1/8	
	25		PT 1/4	
	26		PT 3/8	
	27		PT 1/2	
	61 76 30	Button Head	PF 1/8x15	Thread x Across Flat
	31		PF 1/4x15	
	32		PF 1/8x17	
	33		PF 1/4x17	
	34		PF 3/8x17	
	35		PF 1/2x22	
	36		M12x1.5	
	37		PT 1/8x17	
	38		PT 1/4x17	

## Grease Nipples

for MacGregor Cargo Hatches

Engrasadores para Escotilla de Carga Maegregor

マックグレゴーカハッチ用グリースニップル

马克革雷干舱盖偏心轮牛油嘴

Specially designed to fit MacGregor type cargo hatches which can not accept other types of grease nipples. Available only in one type and size. Thread : 12 mmØ x 1.5 Pitch.



23 32 83 Grease nipple for MacGregor hatch cover Item No. 20.00.09 Pcs.

## Grease Cups

Engrasadores Stauffer

グリースカップ 牛油杯



Brass made plain type cups for grease.

Unit Per Pcs.

CODE	Cup Diam. mm	Male Thread	CODE	Cup Diam. mm	Male Thread
61 76 51	20	PF1/8	61 76 55	38	PF1/4
52	25	PF1/8	56	50	PF3/8
53	32	PF1/8	57	65	PF3/8
54	32	PF1/4	58	75	PF1/2

## Oil Cups

Engrasadores Stauffer

オイルカップ 油杯



Brass made oil cups. Caps close automatically for dust proofing. Two types, either straight or elbow type are available.

Unit Per Pcs.

Straight Type			Elbow Type		
CODE	Cup Diam. mm	Male Thread	CODE	Cup Diam. mm	Male Thread
61 76 61	18	PF 1/8	61 76 71	20	PF 1/8
62	" 1/8		72	25	" 1/8
63	" 1/4		73	25	" 1/4
64	28	" 1/4	74	32	" 1/4
65	34	" 1/4	75	32	" 3/8
61 76 66	34	" 3/8			

## Flexible Extension Hose

Latigüillo Engrase マイクロホース 软伸长管

Used for hand lever grease guns only for hydraulic grease lubrication. All are 4.75 mm I.D. one-wire nylon braided, 210 kgf/cm<sup>2</sup> working and 420 kgf/cm<sup>2</sup> burst pressure.

For Pin type Grease Nipple SPK-1C



For Button Head type Grease Nipple SPK-2C



For Hydraulic or Straight type Grease Nipple SPK-3C



Unit Per Pcs.			
CODE	Grease Nipple Type	Male Thread	Length mm
61 76 80	Pin Type SPK-1C	PT 1/8	355
81	Button Head Type SPK-2C	"	375
82	Hydraulic or Straight Type SPK-3C	"	330

## Air Powered Grease Lubricators

Pistolas Neumáticas de Engrase

エアーパワーグリースガン 气动式黄油枪



Works with compressed air for easy speed greasing by just pulling the trigger. Pressure is maintained constantly and the lubrication level is consistent. Works with a replaceable grease cartridge which is easy to attach and keeps dust and dirt out of the grease.

Grease level inside the cartridge can be checked at a glance so the grease will not run out unexpectedly.

Unit Per Set

CODE	61 76 91
Model	AMG-400N
Max Discharge Pressure	28 MPa
Output	280 g/min.
Capacity	420 ml with use of the cartridge
Standard Accessory	Hydraulic Adaptor CNP-2 Quick Coupler PS-20PM Air Regulator
Size	365 × 411 × 68 mm
Weight	1.8 kg

## Lever Type Hand Grease Guns

Bomba de Engrase a Planca

レバー式グリースガン 手动式黄油枪

These spring primed grease guns are designed for maximum efficiency and easy operation. These rugged lubricators are available in high pressure, medium pressure and volume delivery models to cover the complete range of pressure gun applications.



Standard Type



Suction Filling Type

Unit Per Pcs.						
CODE	Model	Capacity grm	Max. Working Pressure MPa	Wt. kg	Cyl. Diam.	Length
<b>Standard Type Grease Gun</b>						
61 77 01	KH-120	130	20	0.51	38.0	232
02	KH-35	380	25	1.11	59.6	290
03	KH-500S	500	50	1.30	59.6	368
04	GC-57K	500	50	1.55	57	371

## Suction Filling Type Grease Gun

61 77 07	KH-32	200	25	1.27	59.6	412
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## 52. Oilers/Oil Containers

### **Oil Syringes**

Inyectores de Valvolina y Aceite オイルシリンジ 注油器

Provide fast, clean servicing for rapid transfer of any fluid or lubricant. Pulling or pushing the handle intakes or discharges the lubricant.



Unit Per Pc.

CODE	Capacity cc	Length mm	Weight kg
61 77 16	200	490	0.57
17	600	696	1.28
18	1,000	886	1.77

### **Oilers**

Aceiteras 油差し 油壺

#### **Plastic Oilers**

Made of oil resistant hard plastic. A thin pump nozzle forces the oil out in a strong stream.



Straight Type



Angle Type



Pistol Pump Type

Unit Per Pc.

CODE	Type	Capacity cc
61 77 21	Straight	180
22		300
61 77 24	Angle	130
25		200
26		300
61 77 28	Pistol Pump	500

#### **Metallic Oilers**



Unit Per Pc.

CODE	Type	Capacity	Material
61 77 33	Pistol Pump	250 "	Cast Iron
34	"	330 "	"

#### **Heavy Duty Pump Oilers**

Heavy duty industrial type angled pump oiler. Two types of spout, flexible and solid are available.



Flexible Spout Type



Solid Spout Type

CODE	Spout Type	Capacity cc	Wt. gms.
61 77 36	Flexible	175	145
37	"	350	290
38	Solid	125	135
39	"	250	250

### **Oil Jugs**

Medidores de Aceite オイルジョッキ

油壺

Made of plastic or copperrite (tin copper plated). So called Engineer's filler.



Unit Per Pc.

Copperrite		Plastic	
CODE	Capacity	CODE	Capacity
61 77 41	1 ltr	61 77 45	1 ltr
42	2 "	46	2 "
		47	3 "
		48	4 "
		49	5 "

### **Galvanized Oil Funnels**

Embudos de aceite galvanizados 亜鉛めっき油漏斗 镀锌油漏斗

Made from heavy galvanized tin plate with a brass strainer.



Unit Per Pc.

CODE	Diam. mm	CODE	Diam. mm
23 26 01	100	23 26 05	225
02	125	06	250
03	150	07	280
04	200	08	350

### **Oil Containers/Jerry Cans**

Jerry Cans o Petacas オイルコンテナー 油箱 / 加油壶

Available in plastic or tin. This plastic container is suitable for almost all liquid while the tin container (so called Jerry Can) is ideal for gasoline.



Unit Per Pc.

CODE	Material	Capacity Ltr.	CODE	Material	Capacity Ltr.
61 77 61	Plastic	5	61 77 66	Tin	10
62	"	10	67	"	20
63	"	20			

**Nozzle & Cock for Tin/Plastic Containers**

Boquilla y grifo para envases de hojalata/plástico

ブリキ / プラスチック容器用ノズルとコック

用于锡 / 塑料容器的喷嘴和插座



Nozzle



Cock

Unit Per Pcs.			
CODE	Nozzle	CODE	Nozzle
61 77 68	Plastic	61 77 69 70	Plastic Brass

**Oil Pans**

Bandejas de aceite オイルパン 油底壳

Designed to make it easy to transfer oil for proper disposal or recycling. Available in steel type, and also available in rugged high-density polypropylene or polyethylene type (oil drain pan) with resistant to chemicals and solvents.



Oil Pans



Oil Drain Pans

**Steel Type**

Unit Per Pcs.

CODE	W x L x H mm	Volume ltr	CODE	W x L x H mm	Volume ltr
61 77 71	510 x 320 x 45	5	61 77 74	595 x 360 x 115	18
72	465 x 265 x 96	8	75	604 x 452 x 149	30
73	470 x 320 x 120	12	76	908 x 616 x 148	60

**Plastic Type**

Unit Per Pcs.

CODE	W x L x H mm	Volume ltr	CODE	W x L x H mm	Volume ltr
Oil Pan (Polypropylene)			Oil Drain Pan (Polyethylene)		
61 77 77	345 x 265 x 82	5	61 77 80	520 x 145 x 390	8
78	390 x 296 x 104	8	81	600 x 170 x 450	16
79	460 x 340 x 110	10			

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## A Guide for Engine Stores