



SPECIALISED TOOLS
AND EQUIPMENT

"Makin' the Hard Jobs Easy"

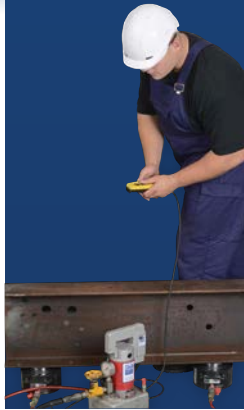
ENGINEERING



CIVIL



HEAVY LIFT



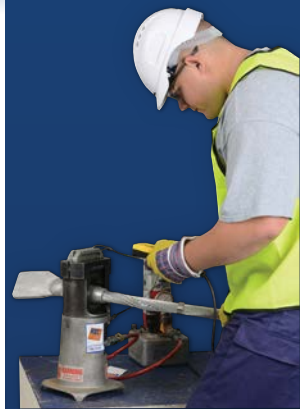
RAIL



BOLTING



ELECTRICAL



HIRE BOOK

HTC MAKIN' THE HARD JOBS EASY

HTC has been creating specialised tooling solutions for New Zealand industry for over 35 years.

Specialists in 700 bar hydraulics, HTC offers more than 35 years of experience in the supply and application of high pressure hydraulic equipment. HTC sources and supplies solution-based tools and equipment for electrical contracting, railway, construction, engineering and drainage industries.

From branches in Auckland and Christchurch, HTC offers equipment sales, service, repair, calibration and tool hire.

"We are passionate about making the hard jobs easier for our customers. Call us today to see how we can help with your next project."

Robb Huskinson
Owner/Director



SUPPLIERS

HTC source from world leading manufacturers with respected brands and proven products. We evaluate manufacturers by visiting their factories and thoroughly testing their tools before we offer products to our customers for sale and hire.

HTC suppliers include Riken hydraulic tools, Tohnichi torque equipment, Izumi electrical crimping tools, Stanley hydraulic tools and Geismar rail maintenance tools. Manufacturers' warranties are backed in our own workshops.

RIKEN



IZUMI

DURAPAC
ENGINEERED FOR REALIABILITY

HYTORC

REID
LIFTING

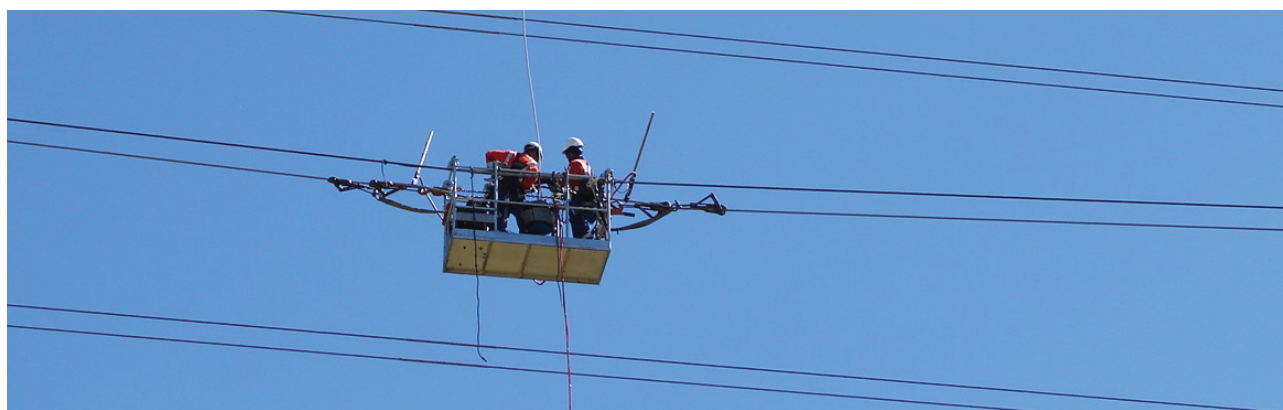


and many more

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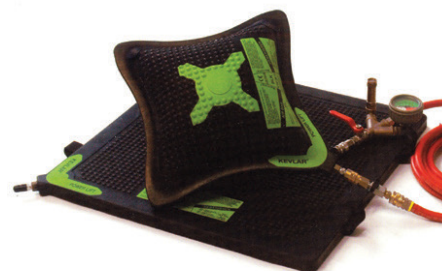
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AIR LIFTING BAGS

Code	Description
450803	Air lifting bags, low insertion height however capable of high capacity lifts



450802

ANCHOR BOLT TESTING

Code	Description
900701	Anchor Bolt Tester 0-10kN & 0-25kN. Includes Eye Bolt Tester
M2008	Hydrajaw M2008 - Test heavy duty anchors up to 145kN.



900701



M2008

BEVELLING

Code	Description
	EKF Portable Chamfering Machine - used for thin plate and pipe weld prep
	SKF Portable Plate Beveling Machine - can produce weld prep on plate steel



250602

BOLTING

FLOGGING SPANNERS/ SLUGGING WRENCHES



Code	Description
401301	Sizes Ranging From 30-65mm



401301

SOCKETS

Code	Description
400926	Socket ¾" Drive Full Range
400927	Socket 1" Drive Full Range
400928	Socket 1½" Drive Full Range
400901	Socket Set 1" Drive 15 PC 32-80mm



400901

HYDRAULIC CASSETTE HEAD

Code	Description
400804	POWERHEAD DRIVE RSL2 (166-1,937Nm)
401016	RSL2 41mm Cassette
400805	POWERHEAD DRIVE RSL4 SWEENEY (363-4,237Nm)
401017	RSL4 111/16" Cassette
401018	RSL4 17/8" Cassette
401019	RSL4 46mm Cassette
401020	RSL4 50mm Cassette
401021	RSL4 55mm Cassette
401022	RSL4 60mm Cassette
401023	RSL4 65mm Cassette
401024	RSL4 70mm Cassette
400806	POWERHEAD DURAPAC LPC2 232-2328Nm
401001	LPC2 30mm Cassette
401002	LPC2 36mm Cassette
401043	LPC2 41mm Cassette
401003	LPC2 46mm Cassette



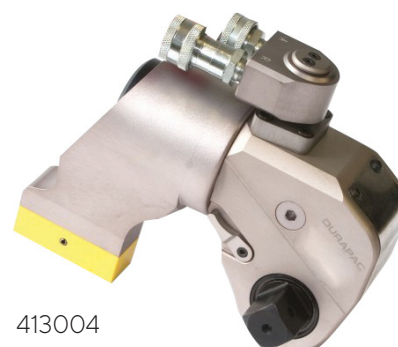
400806

400807	POWERHEAD LPC4 585-5858Nm
401002	LPC4 36mm Cassette
401028	LPC4 41mm Cassette
401003	LPC4 46mm Cassette
401005	LPC4 55mm Cassette
401027	LPC4 34mm Cassette
401029	LPC4 50mm Cassette
401030	LPC4 60mm Cassette
401035	LPC4 65mm Cassette
401031	LPC4 15/8" Cassette
401032	LPC4 17/16" Cassette
401033	LPC4 2" Cassette
401034	LPC4 2 3/16" Cassette
401035	LPC4 2 3/8" Cassette
401036	LPC4 2 9/16" Cassette



400807

400808	POWERHEAD LPC8 1,094-10,941Nm LPC8
401041	LPC8 - 2 1/4" Cassette
401042	LPC8 - 3 1/2" Cassette

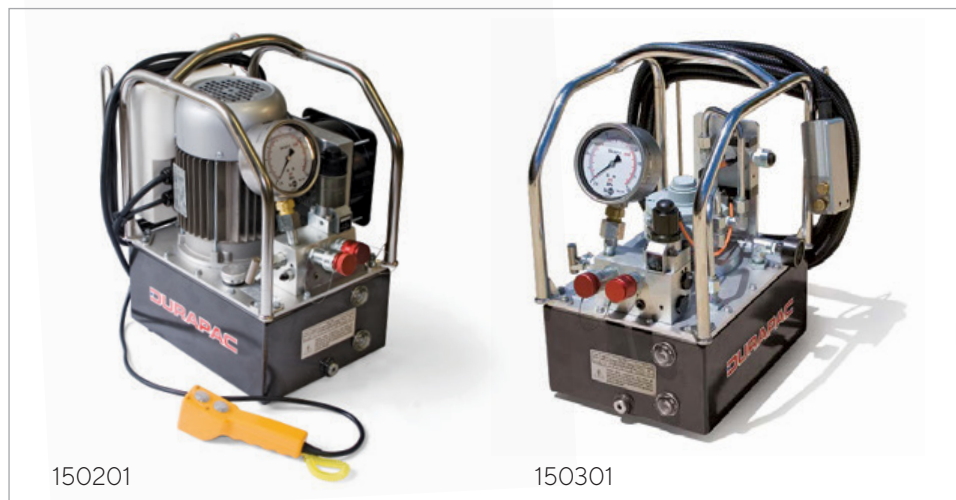


413004

RIGHT ANGLE SQUARE DRIVE	
413001	3/4" Drive Hydraulic Wrench (166-1937Nm)
413002	1" Drive Hydraulic Wrench (363-4237Nm)
413003	1 1/2" Drive Hydraulic Wrench (708-10,813Nm)
413004	1 1/2" Hydraulic Wrench (1,315-15,516Nm)

HYDRAULIC PUMPS

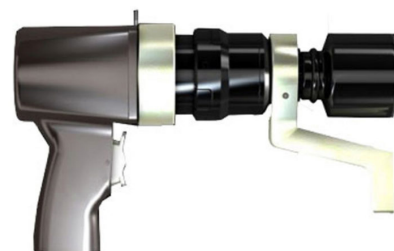
Code	Description
150301	Torque Wrench Pump – Pneumatic
150201	Torque Wrench Pump – Electric
	Torque Wrench Pump – Battery



PNEUMATIC TORQUE MULTIPLIERS

Code	Description
400301	RAD 10GX-NX ¾" DR 272-1360Nm
400310	CLD 155 1" DR 1730Nm
400304	CLD2/80 1" DR 800-2800Nm
400302	RAD 25GX-NX 1" DR 680-3400Nm
400303	CLD2/300 1" DR 385-3595Nm
400307	RAD 34GX 1" DR 1355-4600Nm
400308	RAD 50 1½" DR 2033-6770Nm
	Jgun A1 Pneumatic Torque Multiplier 1513Nm
	Jgun A3 Pneumatic Torque Multiplier 4174Nm
	Jgun A5 Pneumatic Torque Multiplier 6998 Nm

400301



ELECTRIC TORQUE MULTIPLIERS - TONE

Code	Description
	GNRS402E-CE Electronic torque multiplier 1" drive 1600-4000Nm
	GST602QE Electronic torque multiplier 1-1/2" drive 2400-6000Nm



MANUAL TORQUE MULTIPLIERS

Code	Description
400201	Torque Multiplier HT3 1300Nm 5:1
400202	Torque Multiplier 391A 1627Nm 6:1
400204	Torque Multiplier 800655 2700Nm 5:1
400203	Torque Multiplier 393B 4339Nm 18.5:1 HG20 max torque 1 inch drive 3500Nm



MANUAL TORQUE WRENCHES

Code	Description
400109	3/8" Drive 5-25Nm - QL25n
400107	1/2" Drive 20-100Nm - 100
400108	1/2" Drive 40-200Nm - QL200mh
400101	1/2" Drive 60-300Nm - 300
400102	1/2" Drive 60-330Nm - 330
400111	3/4" Drive 60-420Nm - QL420n
400103	3/4" Drive 150-700Nm - 4R
400104	3/4" Drive 200-800Nm - 4AR
400106	3/4" Drive 300-1000Nm - 5R
400105	3/4" Drive 700-1500Nm - 5AR
400110	1" Drive 300-1400Nm - QLE1400n

* Note: to be used with manual torque wrenches only

400108



400109



400111



400110



*NOT TO SCALE

ELECTRIC IMPACT WRENCHES

Code	Description
400401	1/2" Impact Wrench 350Nm
400402	3/4" Impact Wrench 588Nm
400403	1" Impact Wrench 1000Nm

400403



PNEUMATIC IMPACT WRENCHES

Code	Description
400305	Air powered impact wrench 1/2" Drive
400306	Air powered impact wrench 3/4" Drive
400309	Air powered impact wrench 1" Drive

400305





CABLE CUTTERS

Code	Description
250601	CC75 75mm Hydraulic Cable Cutter Head
250602	P100A 100mm Hydraulic Cable Cutter Head
250603	S550 ACSR 54mm Hand Cable Cutter
250604	SPA55 ACSR 50mm Hydraulic Cable Cutter Head
250804	REC S540 Battery Operated Cable Cutter



250602



250804



250603



250601



250604

CABLE PULLING

Code	Description
300801	Cable Roller NTR120
300501	Cable Sock 19.1-25.1mm 6kN
300502	Cable Sock 25.4-37.8mm 8.7kN
300504	Cable Sock 38.1-50.5mm 14.5kN
300503	Cable Sock 50.8-63.2mm 16.4kN
300505	Cable Sock 63.5-75.9mm 21.7kN
300602	Cable Swivel 10000lbs
300601	Cable Swivel 5000lbs
300702	Cable Grip 2 Tonne AL Grip 16-32mm
300701	Cable Grip 2 Tonne AL Grip 5-25mm
300703	Cable Grip 2 Tonne Steel Grip 5-16mm



CRIMPING

REMOTE HEAD CRIMPING

Code	Description
250701	12 Tonne C-Crimp Compression Tool 700 Bar Single Acting
250702	12 Tonne Compression Tool 700 Bar Single Acting
250706	22 Tonne Compression Tool 700 Bar Single Acting
250707	25 Tonne Compression Tool 700 Bar Single Acting
250708	60 Tonne Compression Tool 700 Bar Single Acting
250709	100 Tonne Compression Tool 700 Bar Single Acting



250708



250702

HAND CRIMPING

Code	Description
250704	12 Tonne HAND COMPRESSION TOOL



250704

BATTERY POWERED CRIMPING

Code	Description
250801	12 Tonne Battery Crimp Tool (includes Battery & Charger)



250801

CRIMPING DIE SETS

Code	Description
250101	12 Tonne Die Set
250301	25 Tonne Die Set
250401	60 Tonne Die Set
250501	100T Die Set (see Die selection chart on next page)



250101



250401

DIE SELECTION CHART

CRIMPING DIES

Code	Tonnes	Common Size (mm ²)	Type	A/F Size (mm)
38-XXX-CU Flat	12/22	16/220	Flexible	14/17
38-63-CU	12/22	16	Copper	6.3
38-77-CU	12/22	16/25	Copper	7.7
38-92-CU	12/22	35	Copper	9.2
38-104-CU	12/22	50	Copper	10.4
38-115-CU	12/22	70	Copper	11.5
38-142-CU	12/22	95	Copper	14.2
38-165-CU	12/22	120	Copper	16.5
38-183-CU	12/22	150	Copper	18.3
38-200-CU	12/22	185	Copper	20.0
38-231-CU	12/22	240	Copper	23.1
38-260-CU	12/22	300	Copper	26.0
CDCU-25	12/22	25	Copper	7.7
CDCU-35	12/22	35	Copper	9.2
CDCU-37	12/22	37	Copper	11.4
CDCU-50	12/22	50	Copper	10.4
CDCU-70	12/22	70	Copper	11.5
CDCU-95	12/22	95	Copper	14.2
CDCU-120	12/22	120	Copper	16.5
CDCU-150	12/22	150	Copper	18.3
CDCU-185	12/22	185	Copper	20.0
CDCU-240	12/22	240	Copper	23.1
CDCU-300	12/22	300	Copper	26
38-132-AL	12/22	50/70	Aluminium	13.2
38-173-AL	12/22	95/120	Aluminium	17.3
38-220-AL	12/22	150/185	Aluminium	22.0
38-284-AL	12/22	240/300	Aluminium	28.4
CDA-3	12/22	25/35	Aluminium	12.4
CDA-4	12/22	35/50	Aluminium	13.75
CDA-5	12/22	70/120	Aluminium	17.9
CDA-6	12/22	95/150	Aluminium	22.0
CDA-7	12/22	150/185	Aluminium	25.4
CDA-8	12/22	240	Aluminium	28.2
CDA-9	12/22	300/400	Aluminium	32.3
CDS-8	12/22	150	Steel	12.7
22T/400	22	400	Copper	28.1
22T/500	22	500	Copper	31.0
40-25 Flat	60	N/A	Flexible	N/A
40-185-CU	60	150	Copper	18.5
40-231-CU	60	240	Copper	23.1
40-260-CU	60	150/300	Copper	26.0
40-281-CU	60	400	Copper	28.1
40-310-CU	60	500	Copper	31.0
40-340-CU	60	1/2 Hex/240	Flexible	34.0
40-370-CU	60	630	Copper	37.0
40-410-CU	60	1/2 Hex/400	Flexible	41.0
40-220-AL	60	185	Aluminium	22.0
40-283-AL	60	300	Aluminium	28.3
40-390-AL	60	400/500	Aluminium	39.0
40-432-AL	60	630	Aluminium	43.2

Code	Tonnes	Common Size (mm ²)	Type	A/F Size (mm)
DS7	60	150	Steel	10.11
DS8	60	240	Steel	12.70
DS9	60	300	Steel	15.11
DS10	60	400	Steel	16.05
DA7	60	150/185	Aluminium	25.43
DA8	60	240	Aluminium	28.19
DA9	60	300/400	Aluminium	32.33
DA10	60	400	Aluminium	36.22
DA11	60	500	Aluminium	40.21
DA12	60	630	Aluminium	45.72
DA7-100	100	150/185	Aluminium	25.43
DA8-100	100	240	Aluminium	28.19
DA10-100	100	400	Aluminium	36.22
DA11-100	100	500	Aluminium	40.21
DS7-100	100	150	Steel	10.11
DS8-100	100	240	Steel	12.70
DS9-100	100	300	Steel	15.11
DS10-100	100	400	Steel	16.05
DA10/10W	100	400	Aluminium	36.22
DA/100W	100	630	Aluminium	45.72
DA11/100W	100	500	Aluminium	40.21
DS10/100W	100	400	Steel	16.05
DA14/100W	100	ACSR/CHUKAR	Aluminium	53.87
40-400 AL	60	Oxygen	Aluminium	40.0
40-345 AL	60	Nitrogen	Aluminium	34.5
40-445 AL	60	Selenium	Aluminium	44.5
40-475 AL	60	Sulphur	Aluminium	47.5
40-285 AL	60	Neon	Aluminium	28.5
475AL/100W	100	Sulphur	Aluminium	47.5
445AL/100W	100	Selenium	Aluminium	44.5
345AL/100W	100	Nitrogen	Aluminium	34.5

AAAC CRIMPING DIES

40-400 AL	60	Oxygen	Aluminium	40.0
40-345 AL	60	Nitrogen	Aluminium	34.5
40-445 AL	60	Selenium	Aluminium	44.5
40-475 AL	60	Sulphur	Aluminium	47.5
40-285 AL	60	Neon	Aluminium	28.5
100-475 AL	100	Sulphur	Aluminium	47.5
100-445 AL	100	Selenium	Aluminium	44.5
100-345 AL	100	Nitrogen	Aluminium	34.5

DIE ADAPTORS

Code	Description	Shape
25T-12T	25 - 12 Tonne Die Adaptor	Round
EP60S-12	60 - 12 Tonne Die adaptor	Round
EP100W-60	100 - 60 Tonne Die adaptor	Round
HZ100-60	100 - 60 Tonne Die adaptor	Square

SAFETY NOTES: To ensure correct operation and to maintain safety standards, customers must specify dies. If unsure, please contact connector manufacturer. HTC does not accept liability for joint failures due to incorrect die sizes.

DRILLS / ROTARY BROACHES



Code	Description
500105	Small Mag Base Drill
500101	Medium Mag Base Drill
500102	Large Mag Base Drill
	Extra Large Mag Base drills up to 100mm
500106	Small Lightweight/Low Height Mag Drill
	Medium Lightweight/Low Height Mag Drill
P.O.A.	Annular Cutters from 12mm - 65mm



500105

500106

PRE-MIXED CUTTING
FLUID AVAILABLE
FOR PURCHASE



DYNAMOMETERS/SCALES/ TENSION METERS/LOAD CELLS



Code	Description
300101	1 Tonne Dynamometer Tension Meter Analogue
300106	2 Tonne Dynamometer Tension Meter Analogue
	2 Tonne Dynamometer Tension Meter Digital
300102	3 Tonne Dynamometer Tension Meter Analogue
300104	5 Tonne Dynamometer Tension Meter Analogue
	5 Tonne Dynamometer Tension Meter Digital
	10 Tonne Dynamometer Tension Meter Digital
300103	7.5 Tonne Load Cell With Digital Indicator with Tension Meter



300102

300103

300101

EXTENSION LEADS

Code	Description
350201	Range of power leads both single and three phase.



FLANGE SPREADING EQUIPMENT

Code	Description
901401	Hydraulic Flange Spreader Kit: includes 2 x Hydraulic Spreaders, 2 x Hoses, Hydraulic Pump, 2 x 1000 Bar Gauges, 2 x Step Wedges 2 x Step Chocks
901402	Hydraulic Fixed Flange Alignment & Rotational Tool: includes 2 x Hydraulic Alignment Tools, Hydraulic Pump, Hose, 1000 Bar Gauge & Ratchet Strop

901401



901402



GAUGES

Code	Description
200201	100mm Hydraulic Gauge
200203	63mm Hydraulic gauge
200204	Digital High Accuracy Gauge



GENERATORS

Code	Description
350101	Generator 2.2 KVA
350102	Generator 5.5 KVA

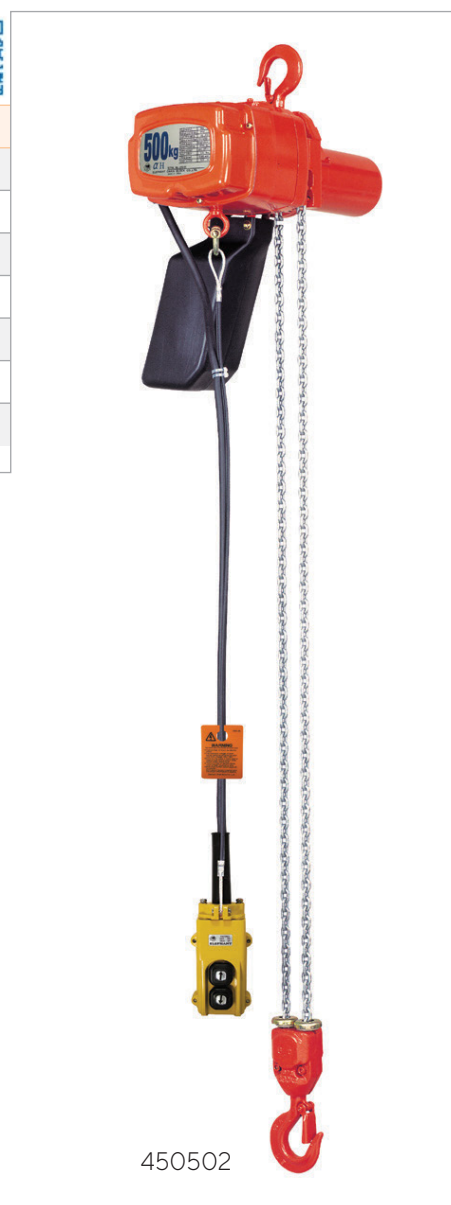
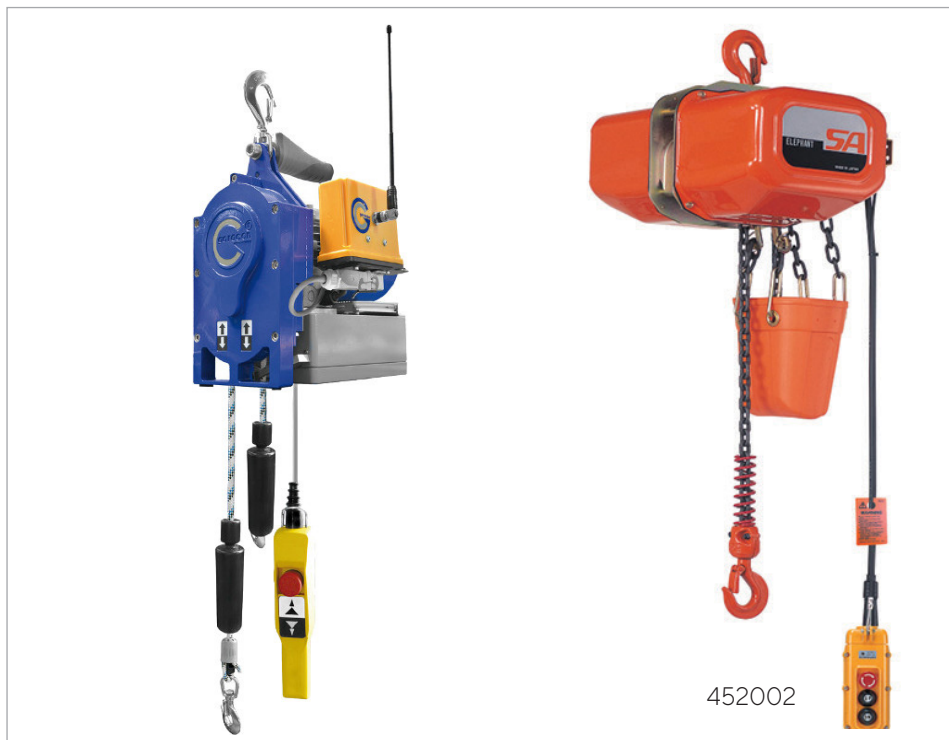


HOISTS

ELECTRIC HOISTS



Code	Description
452002	200Kg Electric Hoist Wire DM200/I 25M Drop
452001	200Kg Electric Hoist Wire DM200 I/V 40M Drop
450507	500Kg Electric Chain Hoist 6m Drop 230V
450502	1000kg Electric Chain Hoist 6m lift, 230v
450501	2000kg Electric Chain Hoist 6m lift, 230v
450508	3000kg Electric Chain Hoist 6m lift, 230v
	G-smartrac endless rope winch, 300kg or 600kg



LEVER HOISTS

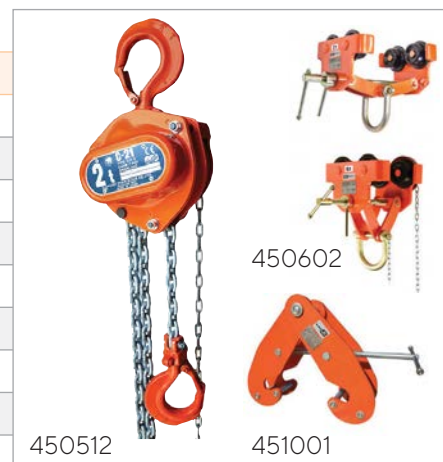
Code	Description
450504	0.8 Tonne Lever Hoist
450503	1.6 Tonne Lever Hoist
450505	3 Tonne Lever Hoist
450506	6.3 Tonne Lever Hoist



450504

MANUAL HOISTS - CHAIN BLOCKS

Code	Description
450510	1 Tonne Chain Block 6m Lift
450511	2 Tonne Chain Block 6m Lift
450512	3 Tonne Chain Block 6m Lift
450513	5 Tonne Chain Block 6m Lift
450514	10 Tonne Chain Block 6M Lift
450602	Universal Beam Trolley 1.5 Tonne 74-192mm
450605	Universal Beam Trolley 3 Tonne 100-205mm
451001	Girder Clamps

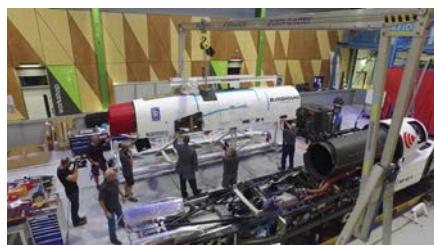


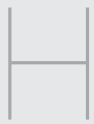
450512

451001

GANTRY HOISTS

Code	Description
450515	Gantry - Portable Aluminium - 500kg, 2000kg, 3000kg and 5000kg capacities available.



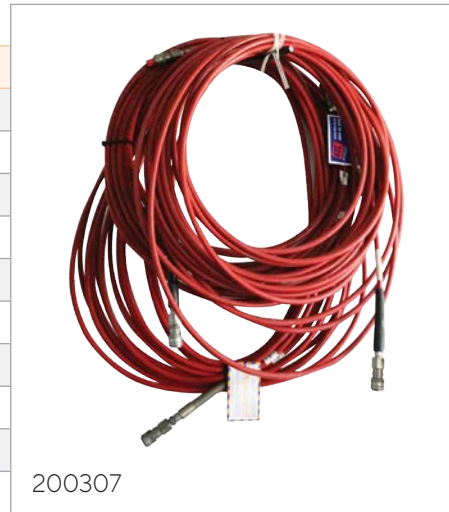


HOSES

HYDRAULIC 700 BAR HOSES

Code	Description
200301	2m Hose & Couplers
200302	3m Hose & Couplers
200304	5m Hose & Couplers
200305	10m Hose & Couplers
200307	15m Hose & Couplers
200308	20m Hose & Couplers
200309	30m Hose & Couplers
200303	4m Twin Hose & Couplers for Hydraulic Torque Pumps
200306	10m Twin Hose & Couplers for Hydraulic Torque Pumps

*Longer hoses can be produced for specific projects so feel free to ask the team.



HYDRAULIC HOSES - ADAPTORS

Code	Description
200501	Adaptors - allows for different couple brands with the same capacities to be inter connected.



LOW PRESSURE HYDRAULIC HOSES

Code	Description
200311	5m Low Pressure Return
200310	15m Twin Hose & Brunning Couplers
200313	30m Twin Hose & Brunning Couplers



AIR HOSES

Code	Description
200401	5m Air Hose & Couplers
200405	5m Air Hose & 1/2" Aro Coupler
200406	10m Air Hose & 1/2" Aro Coupler
200402	10m Air Hose & 3/8" Aro Couplers
200403	20m Air Hose & 3/8" Aro Couplers



HYDRAULIC MANIFOLDS AND VALVING

Code	Description
200101	CH-13 Check Valve with Bypass
200102	NV-13 Needle Valve
200103	BV-2 Valved Manifold 2 Port
200104	BV-43 Valved Manifold 4 Port
200105	BV-46 Valved Manifold 6 Port
200312	S-003 Y-Branch With ROC-13 Couplers



JACKS

Code	Description
450101	5 Tonne Ratchet Jack 254mm Stroke 432mm Closed Height
450102	5 Tonne Ratchet Jack 330mm Stroke 508mm Closed Height
450401	10 Tonne Bottle Jack
450403	15 Tonne Bottle Jack



450401



LIFTING SLINGS/ROPES/SHACKLES

Code	Description
450605	Strop 2 Tonne Flat Web 1.5m
450603	Strop 3 Tonne Swl Roundsling 4m
450606	Strop 10 Tonne Flat Web 3m
453001	Bow Shackle 6 Tonne
453002	Bow Shackle 9.5 Tonne



453002

LOAD CELLS - HOLLOW CENTRE

Code	Description
300105	50 Tonne Compression Cell with Digital Indicator Centre Hole 1.75" (12 UNF)



300105

LOADSKATES

Code	Description
750101	5 Tonne Loadskate
750102	12.5 Tonne Loadskate
750103	40 Tonne Loadskate Set (4 x 10 Tonne)
750105	5 Tonne Handle
750106	5 Tonne Turntable
750104	12.5 Tonne Handle
750107	12.5 Tonne Turntable



LOW PRESSURE EQUIPMENT

Code	Description
950301	Stanley CS06 Underwater Chainsaw
950101	Concrete Saw 14" Blade C/W Trolley
950201	Hydraulic Breaker 25kg 1000BPM 1" Shank
150501	Petrol Powered LP Power Unit UH103 Ex21D 25 LPM 2000 psi
	Low pressure hydraulic pumps - various capacities and flow rates available.
950401	Underwater Grinder 9" Disc - 15-38LPM
	Pole Tamper



150503



950301



950401

NUT CUTTERS/SPLITTERS

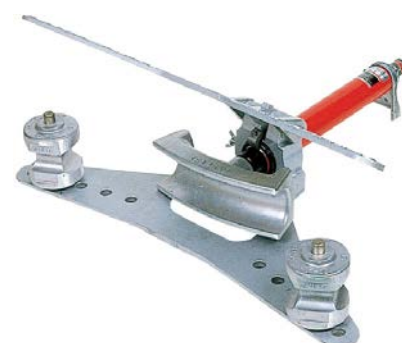
Code	Description
900605	HNS150 Hydraulic Nut Splitter 13-38mm
900601	DNS2432 Hydraulic Nut Splitter 24-32mm
900604	DNS3241 Hydraulic Nut Splitter 32-41mm
900602	HNS225 Hydraulic Nut Splitter 29-57mm



900604

PIPE BENDING

Code	Description
800102	Pipe bender + shoes up to 50mm nominal pipe



800102

PIPE THREADING

Code	Description
650101	230 ½" - 3" Pipe threading (machine only)
650207	230 Thread chaser set
650102	352 ¼" - 2" Pipe threading (machine only)
650208	352 Thread chaser set
650103	Rigid 690 ½" - 2" pipe threading (INC chasers)
650104	Asada Beaver Threading Machine ½" - 2
650301	Asada Roll Groover attachment
650104	Rigid compact 300 1/8" - 2" (machine only)
650207	Rigid 300 thread chasers
650301	Rigid 916 roll groover attachment



650104



PIPE SEALING & TESTING



Code	Description
519424	Sava Sealing Plug 70-150mm 2.5 Bar
114116	Sava Sealing Plug 100-200mm 2.5 Bar
110102	Sava Sealing Plug 150-300mm 2.5 Bar
110103	Sava Sealing Plug 300-525mm 2.5 Bar
114115	Sava Sealing Plug 350-600mm 2.5 Bar
110114	Sava Sealing Plug 375- 750mm 2.5 Bar
110109	Sava Sealing Plug 500-800mm 2.5 Bar
110110	Sava Sealing Plug 500-1000mm 1.5 Bar
110112	Sava Sealing Plug 600-1200mm 1.5 Bar
	750-1500 Sealing Plug
526849	Sava Test Plug 70-150mm with ½" bypass
110101	Sava Test Plug 150-300mm with 1" bypass
110104	Sava Test Plug 300-525mm with 1" bypass
110107	Sava Test Plug 500-800mm with 2" bypass
110108	Sava Test Plug 500-1000mm with 2" bypass
110111	Sava Test Plug 600-1200mm with 4" Bypass
	750-1500 Test Plug
110113	Sava 1.5 Bar Controller
110105	Sava 2.5 Bar Controller
110106	Sava 10m Air Hose
114117	Test Gauge for Pipeline Pressure Testing (0-60kpa)

* Pipe sealing gear incurs a sanitising charge

110101



110113



114117

PIPE JOINT TESTER

Code	Description
901501	Pipe joint tester – ready to test with water or air. Capable of testing to 15 psi air or 50 psi water. For testing pipe between 54cm and 299cm



901501



PIPE WORK ACCESSORIES

Code	Description
	Confined space exhaust fan 300mm



POLE JACKING LIGHT DUTY POLE JACKING

Code	Description
120101	Pole Jacking System for Mono Poles Consisting of 30 Tonne Jacking Stools & Full Hydraulic Gear

HEAVY DUTY POLE JACKING

Code	Description
120100	Pole Jacking System for Transmission Mono Pole consisting of 60 Tonne Jacking Stools & Full Hydraulic Gear

120100



PORTABLE MATERIAL LIFTERS

Code	Description
901201	Hydraulic Trolley 850 x 500mm, 300kg Capacity Lift Height: 300 – 900mm
450516	Portable Material Lifter 455kg Capacity Max Height: 3.5m

901201



450516



POWER TOOLS

Code	Description
900201	Metal Nibbler Cuts Up To 3.5mm Steel
901001	Ds14 Steel Cutting Drop Saw
950202	70Lb Electric Breaker
900901	Reciprocating Saw
901002	7 ¼" Metal Cutting Saw
900501	DA6301 ½" Right Angle Drill

950202



901002



900901



PULLERS

Code	Description
990104	10 Tonne F210I 2 Jaw Long Puller
990103	10 Tonne F210 2 Jaw Puller
990102	10 Tonne CH10 Cross Head
990106	10 Tonne F310 3 Jaw Puller
990105	20 Tonne F220 2 Jaw Puller
990107	20 Tonne F320 3 Jaw Puller
990111	25 Tonne PHP113 Posi Lock Puller
990110	30 Tonne HP351 2 Leg Puller Set (includes Ram)
990110	30 Tonne HP351 3 Leg Puller Set (includes Ram)
990109	5 Tonne F351 3 Leg Long Puller
990108	5 Tonne F35 3 Leg Puller
990101	5 Tonne A132 Chain Cross Head Pull Plate
	Bearing Puller, Tri Sectional Durapac ET3-495

990111



990105



HTC SHUT KIT

Here at HTC, we not only offer day to day problem solving for any of the daily challenges that may occur on the job, but we have also expanded our range to cover the regular planned maintenance programs that your company may have.

We provide you with an extensive product wish list, which in turn you tick what items you want and how many. Once this list has been compiled we price it on a day, week, month or even the duration of the shut.

NO HIDDEN COSTS. NO UNWANTED TOOLS.

We then put it all in our shut box with a checklist, padlock it shut and send it out to the supervisor in charge.

You can trust HTC to guarantee that all our equipment is serviced, certified and site safe.

It's all about **'Making The Hard Jobs Easy'** so you can do your job faster and easier.



CUSTOMISE YOUR TOOL BOX

- Pumps - Hand, Electric & Hydraulic
- Torque Equipment - Wrenches & Cassettes
- Rams & Jacks
- Chain Blocks & Pull Lifts
- Mag Drills
- Spanners, Sockets & Floggers
- Strops & Slings
- Shackles

**PLUS MANY OTHER TOOLS OR EQUIPMENT
FOR YOUR PLANNED MAINTENANCE**



Hydraulic Torque Wrenches



Mag Drill



Flange Spreader



Hoist Chain Block



Gantry



Flat Cylinders

Contact the HTC Team to discuss your Shut Kit today

PUMPS

ELECTRIC PUMPS



Code	Description
150207	SMP4AR 1800cc Pump Single Acting 230v
150210	SMP4AR 6L 6000cc Pump Single Acting 230v
150209	SMP4C 1800cc Pump Double Acting 230v
150208	SMP4C 6000cc Pump Double Acting 230v
150206	PE554 9000cc Pump Double Acting 230v
150203	MP8C Riken Pump Single Acting 230v
150214	Pem8424 20L Pump Double Acting 230v
150205	Mp15 30L Pump Double Acting 3 Phase
	PEM-8414, 8000cc tank, Double acting, 230v



150207

150214

HAND PUMPS

Code	Description
150102	P1B 600cc 2 Speed Hand Pump
150103	P4 1800cc 2 Speed Hand Pump
150108	P2200 Single Acting 2 Speed Hand Pump 2000cc
150105	P5C 5000cc Double Acting 2 Speed Hand Pump
150106	P7C 8000cc Double Acting 2 Speed Hand Pump
150109	P2200D 2000cc Double Acting 2 Speed Hand Pump



150105

150102

150108

PETROL HYDRAULIC PUMPS

Code	Description
	PPM2014 Petrol Hydraulic Pump 700bar



HYDROSTATIC TEST PUMPS

Code	Description
150401	Hydrostatic 40 Bar Max Water Test Pump
150403	Hydrostatic 100 Bar Max Water Test Pump
150404	Hydrostatic 700 Bar Max Water Test Pump



150401

PNEUMATIC 6-7 BAR INPUT 700 OUTPUT PUMPS

Code	Description
150302	PA91 1475cc Air Foot Pump
150306	DPA-15 1500cc Air Foot Pump
150303	PA911 3769cc Air Foot Pump
150304	PA6M 9100cc Air Foot Pump



150306

ULTRA HIGH PRESSURE PUMPS

Code	Description
150107	UP21G 600cc 29,000 psi High Pressure Hand Pump Comes with gauge, hose and coupler



150107

HTC SYNCMASTER

NEW ZEALAND'S LARGEST SYNCHRONOUS LIFTING SYSTEM

HTC SyncMaster is a synchronised, computer controlled, hydraulic lifting system for lifting bridges, buildings and large machinery.



HTC SyncMaster provides precision control and monitoring of complex lifting applications. Up to 5 power packs can be controlled by one master unit, giving 40 individually controlled cylinder points. Accuracies of $\pm 0.5\text{mm}$ allow the user to set parameters, limits and alarms to comply with engineer's methodology and safety margins.

HTC SyncMaster can in real time monitor and calculate cylinder loads, stroke lengths, total loads and the centre of gravity on large scale engineering and maintenance lifts. It provides a high degree of safety for personnel and property by automatically stopping the lift if set parameters are attempted to be exceeded.

Every configuration, process, alert and operator function is displayed and recorded in real time. This reduces costs by minimising manual control, measurements and comparisons to lift plans. No longer is it necessary to station workers at each lift point to synchronise activity via walkie talkie.

Lift data is collected during the lift process and this data can be downloaded for analysis and planning of future lifts.

FOR LARGE SCALE LIFTS,
INCLUDING BRIDGES,
BUILDINGS AND MACHINERY,
SYNCMASTER IS THE SAFEST,
MOST EFFICIENT SOLUTION.



THE **SYNMASTER** MULTIPLE POINTS SYNCHRONOUS LIFT SYSTEM ALLOWS FOR UP TO 5 POWER PACKS TO BE CONTROLLED BY ONE MASTER UNIT, GIVING A MAXIMUM OF 40 INDIVIDUALLY CONTROLLED CYLINDER POINTS.

The system constantly monitors cylinder positional and pressure data to safely and effortlessly achieve very accurate and repeatable load movements, regardless of weight distribution or size. One power pack controls up to eight single or double acting cylinders, or groups of cylinders. The 'X', 'Y' and 'Z' coordinates can be recorded for each cylinder, as required by the lift type. DURAPAC cylinder data may be selected from a drop down menu or manually entered for other cylinders. Pressure transducers allow pressure or load limits to be set for an individual cylinder or for all cylinders. Two linear transducers are available per lifting point to monitor cylinder and load displacement. Full data logging and real time graphical display is available for all lift variables.



NUMBER OF LIFTING POINTS

1 – 40

ACCURACY

0.5 mm

MAXIMUM OPERATING PRESSURE

700 bar



TOUCH SCREEN

15 inch full colour touch screen withstands harsh environments. The glass is toughened making it both scratch and cut resistant.



VARIABLE FLOW CONTROL

Variable frequency drive motor gives a wider pump flow range. This is controlled by a joy stick controller that governs flow and directional control of the hydraulic cylinders.



CONTROL VALVES

High cycle, high speed solenoid valves allow precise flow control. All valves are leak free and have a 100% duty cycle.



PRESSURE TRANSDUCERS

Monitor load conditions at each lift point for maximum safety. Optional load cells are available for high precision weighing operations.



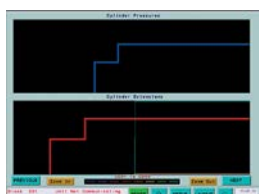
STROKE TRANSDUCERS

High precision 40 pulse per mm linear transducers combined with high speed counter cards achieve precise positional control. Various stroke transducers are available including internal cylinder design. Optional tilt meters are also available.



ADJUSTABLE FLOW CONTROL VALVES

Controls the flow during decent and can be preset and locked.



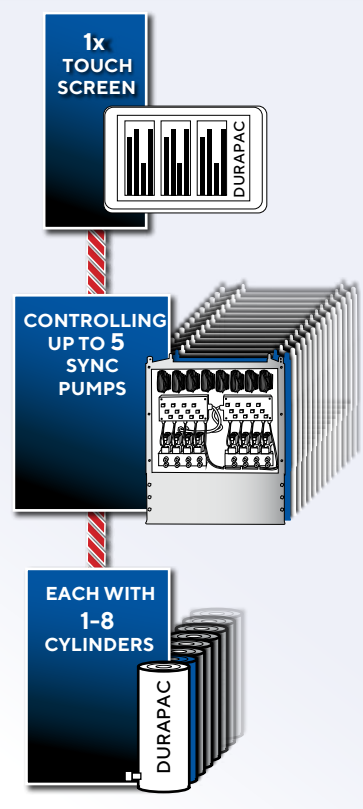
LIFT MONITORING AND DATA STORAGE

Full pressure and displacement data presentation are available on screen to monitor the lift in real time. Lift data are stored and able to be downloaded in a format suitable for importing into Excel for further analysis and record keeping. This gives a permanent record of the displacement and load on every cylinder at defined time intervals.

Did you know...

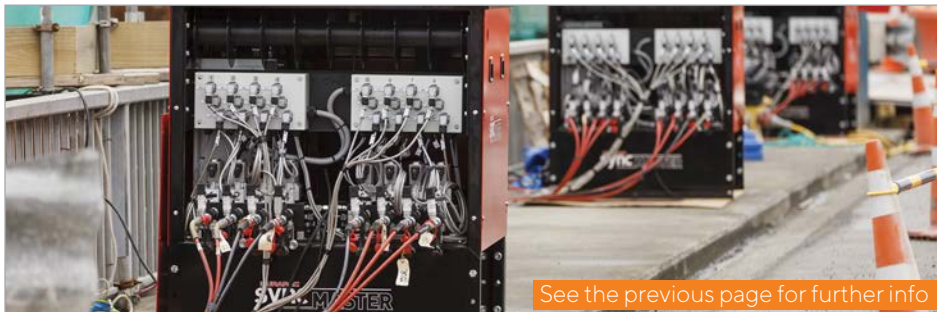
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One touch screen can control 1-5 sync pumps which can each power 1-8 cylinders. Creating a total potential of 40 lift points



SYNCHRONISED JACKING SYSTEM

Code	Description
	Synchronised Lifting System with up to 40 Points of Lift Onboard computer monitors stroke, load and centre of gravity



PUNCHES GENERAL PUNCHES

Code	Description
600102	EP2110V Diamond Long Reach Punch Unit 220V
600206A	EP2110V Punch & Die Set - Elliptical (Horizontal)
600206B	EP2110V Punch & Die Set - Elliptical (Vertical)
600207	EP2110V Punch & Die Set
600104	SH70 Hydraulic Punch
600201	SH70 Punch & Die Set Steel
600202	SH70 Punch & Die Set Copper
600106	Royal Master Punch and 3 Phase Pump with 110mm reach Max 24mm Dia x 16mm Steel. Max 28mm Dia x 17mm SS400
600208	Royal Master Punch & Die Set
600103	Riken 50 Tonne Punch
	IKURA Battery punch



SWITCHBOARD/CHASSIS PUNCHES

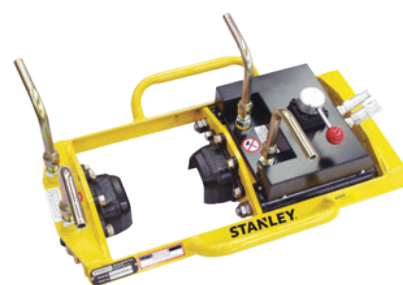
Code	Description
600101	Switch Board Punch Kit - Includes Pump, Hose & Ram
600105	Wastemaster 87mm Sink Punch (90mm Trim)
600204	Switch Board Punch & Die up to 70mm
600205	Switch Board Punch & Die over 70mm
901301	Rivnut Gun - Range of sizes available



RAIL GEAR



Code	Description
550109	Rail Drill Petrol Powered Includes Templates & Shoes
550102	Stanley Railsaw No Blade
N00754	16" Rail Cutting Blades Available To Buy
550108	Airtec Petrol Powered Impact Wrench
550103	Diesel Grinder (wheel not included)
GRIN021F	Grinding Wheel available to buy
550101	Weld Shears
550104	Petrol Tamper
550107	Stihl BT45z Petrol Sleeper Drill
550105	Stanley 1" DR Hydraulic Impact Wrench
550110	Track Gauge & Level
	70ton Rail Tensor Set



550101



550105



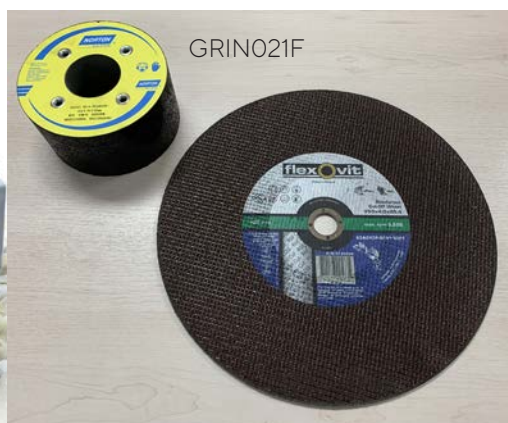
550108



550103



550109



N00754



550104



550107



550110

RAMS HOLLOW CENTRE RAMS



Code	Tonnes	Stroke (mm)	Closed Height (mm)	Centre Hole Ø (mm)	Effective Area (cm ²)	Weight (kg)	Model Number
100701	12	40	127	19.5	17.86	3	SC1240
100713	12	76	184	19.5	17.9	4.4	RHS123
100702	20	40	165	27.5	28.86	7.8	SC240
100714	20	49	162	26.9	30.7	7.7	RHS202
100715	30	64	178	33.3	46.6	10.9	RHS302
100716	30	155	330	33.3	46.6	21.8	RHS306
100718	60	76	247	53.8	82.3	28.1	RHS603
100712	60	153	323	53.8	82.3	35.4	RHS606
100717	100	76	254	79.0	133	63	RHS1003
100802	150	203	349	79.5	204.1 push/ 102.6 pull	111.0	RHD1508
100803	350	76	320	75.0	519	185	JHC-D350



4-10 TONNE RAMS

100501	4	15	44	41	6.42	0.6	RO415
100502	4	30	60	41	6.42	0.8	RO430
100101	4	127	252	39	6.42	1.9	SO4127
100121	5	25	110	38.1	6.5	1.0	RC51
100102	5	76	165	38.1	6.5	1.5	RC53
100106	10	105	172	57	14.4	3.0	C104C
100505	10	15	44	70	14.52	1.1	LJ115
100503	10	11	44.5	14.4	14.4	1.1	RLS503
100108	10	150	300	57	14.52	4.7	S1150
100109	10	300	471	57	14.52	7.4	S1300
100603	10	55	130	57	14.52	2.1	S155
100611	10	26	89	57	14.5	1.8	RG101
100612	10	38	88	69	14.5	4.1	RLP101



100612



100108

20-30 TONNE RAMS

100507	20	15	52	88	30.19	2.1	LJ215
100604	20	50	160	86	33.18	5.8	S250
100111	20	126	271	86	33.18	10.2	SJ2126
100508	20	45	96	92	28.6	5	SCS201
100116	25	102	216	86	33.2	8	C254C
100115	25	210	324	86	33.2	12.2	RC258
100613	30	62	117	101	42.1	6.8	RLP302
100510	30	8	34	112	46.56	2.6	LF310
100512	30	13	58.7	95.3x114.3	41.9	3.9	RLS300
100509	30	15	58	105	46.56	3.5	LJ315



100613



100509

Can also be used for anchor testing. Please confirm the specifications needed with Staff at time of Hire.

RAMS

50-500 TONNE RAMS

Code	Tonnes	Stroke (mm)	Closed Height (mm)	Outside Ø (mm)	Effective Area (cm²)	Weight (kg)	Model Number
100203	50	150	387	128	71.63	31.5	D5150
100514	50	15	65	132	72.38	6.4	LJ515
100607	50	60	127	128	62.0	10.5	RSS502
100606	50	25	100	128	71.63	9.4	S525
100117	50	50	206	128	71.63	13.8	S550
100118	50	154	300	128	71.63	26.5	SJ5154
100718	50	150	264	125	70.9	25	RSLC-506
100306	50	60	122	124	62.1	10.9	RLP502
100305	50	50	164	125	70.9	15	RSLC502
100608	70	25	130	150	102.69	16.5	S725
100515	90	15	85	178x153	126.7	14.5	RM1000
100614	100	25	100	175	133.3	16.9	RJ1001
100119	100	260	428	158	133	51.2	C10010
100302	100	150	286	175	132.7	45	CGG10P150
100301	100	150	287	165	132.7	48	CLL1006
100402	100	57	140	169	126.6	21.4	RA1002
100404	100	152	270	203	133	23	AR1006
100403	100	159	298.5	187.3	133	22.6	RA1006
100610	100	57	141	165	126.7	22.7	RLP1002
100516	100	10	30	145	69.4	4.5	SV11Y100
100204	200	150	473	241	285.3 push/ 139. pull	130	D20150
100303	200	50	302	350		127	SPE2002
100206	250	150	335	275	366.2	136	RDHG-250
100304	500	100	444	395	730	390	SPE5006



100514



100306



100206



RAM ATTACHMENTS

Code	Description
101002	10 Tonne CI10 Clevis Eye
101003	10 Tonne R103 Vee Base
101004	10 Tonne R104 Vee Head
101005	10 Tonne R106 Flat Base
101006	10 Tonne R106I Flat Base Large
101007	10 Tonne R107 Plunger Toe
101008	10 Tonne R113 120mm Extension
101009	10 Tonne R114 250mm Extension
101010	10 Tonne R115 500mm Extension
101011	10 Tonne R311 750mm Extension
101012	10 Tonne R116 Connector
101013	10 Tonne R117 Coupling
101014	10 Tonne R306 Ram Toe
101023	10 Tonne CB10 Round Flat Base
101015	20 Tonne CB20 Flat Base
101016	20 Tonne R202 Female Coupling
101017	20 Tonne R205 Toe Lift
101018	20 Tonne R215 125mm Extension
101019	20 Tonne R206 250mm Extension
101020	20 Tonne R207 500mm Extension
101021	20 Tonne RB20 PIS Tonne Base



RAM WEDGE

Code	Description
100901	WO11 Tonne Wedge Ram – Excludes Pump & Hose
100902	WO2 2 Tonne Wedge Ram – Excludes Pump & Hose
	DHS-15 Wedge Ram



REBAR BENDER



Code	Description
700206	DBD19L Table Bender 10, 12 & 16mm
700201	DBD25H Table Bender up to 25mm High Tensile
700101	DBR32 (Seismic 500) Rebar Bender/Straightener 220V – max 25mm
700102	HRB32 (Seismic 500) Rebar Bender/Straightener & Pump – max 32mm
	Sima Star Stirrup Bender



REBAR BENDER/CUTTER

Code	Description
700202	DBC16H Rebar Bender Cutter – max 12mm



700202

REBAR BENDER INSITU

Code	Description
700205	JIM Bender 25mm (Seismic 500)
700204	JIM32 Bender 32mm (Seismic 500)



700204

REBAR CUTTER

Code	Description
700304	DC16W 16mm Rebar Cutter Diamond
700301	DC20HI/W 20mm Rebar Cutter Diamond
700303	DC32W 32mm Rebar Cutter Diamond
700207	RBC16 Rebar Cutter 16mm – Hydraulic Remote Head
700305	DFC20 Electric Rebar Cutting Flush Saw 50W 19mm max



700304



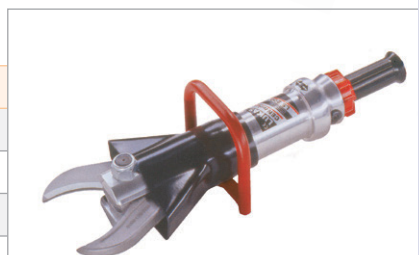
700303



700305

RECYCLING GEAR

Code	Description
900304	Recycling Cutter - Small - LS301EN
900303	Recycling Cutter - Large - LS511EN
900305	Recycling Cutter Hose Set



900305

SHIMS

Code	Description
902001	Cribbing Plates per set of 50mm
902002	Shim Plates 200 x 200 x 20mm thick
902003	Shim Plates 200 x 200 x 2mm thick



SNAKES

Code	Description
	100m/4mm O/D Fibre Glass Duct Snake
300202	125m/6mm O/D Fibre Glass Duct Snake
300203	150m/8mm O/D Fibre Glass Duct Snake
300201	200m/10mm O/D Fibre Glass Duct Snake



300202

STRESSING JACK MONO

Code	Description
900101	Mono Strand Stressing Jack 25 Tonne Includes Tooling for 0.5" Or 0.6" Strand not including Pump or Hose



900101

TRANSMISSION JACKS

Code	Description
450201	Transmission Jack + Kit



450201

TUBE BENDING

Code	Description
800201	UNI-42 Manual Tube Bender Complete with Stand Uni42 and Uni-60 Electric Benders



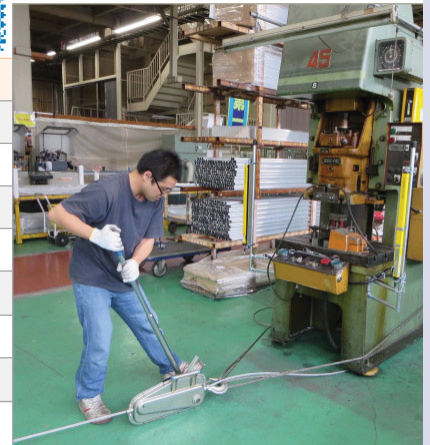
800201



WINCHES



Code	Description
450601	1.6 Tonne Tirfor - Wire Rope Puller (20m Rope)
450604	3.2 Tonne Lift Tirfor, 5 Tonne Pull (20m Rope)
300302	PCW5000 Petrol Powered Winch (1000kg) - 12m/min
300301	Electric Super Tugger (3000kg) - 8m/min
300303	Petrol Twin Capstan (1000kg) - 25m/min
	PCW-3000Li Battery Winch
	PCW-4000 Petrol Hauling Winch



300301



300302



300303



CALIBRATION, TESTING AND INSPECTION SERVICES

Now, more than ever, keeping your people safe means keeping your equipment in working order and compliant with the current standards.

The experienced team at HTC is here to help.

- Tests performed to comply with all relevant standards by experienced staff
- Presale and cyclic testing available
- All tests are traceable with secure certificate storage



Torque Testing

- Latest generation testing equipment, compliant with the ISO standard
- Manual wrenches and screw drivers
- Hydraulic Wrenches
- Powered torque multipliers



Load Cells



Tension Meters



Dielectric Testing ⚡

- Hi Voltage Insulation Testing
- PPE and Tools



Work Boots



Gloves



Sleeves



Mats



Live Line and Utility Sticks



Hydraulic Saws and Pruners



Arborist Tools and Equipment

Height Safety Inspection



Lifting Slings Inspection



KEEP YOUR PEOPLE SAFE

ABOUT HTC HIRE

31

HTC HIRE RATES

You can find 4 hour and 24 hour hire rates for all our tools listed on our website.

When you hire a tool for over 7 days our team will calculate a discounted rate based on the length of the hire. HTC hire rates usually reduce as the term of the hire increases. Once the hire period rolls into a second month, the deal can get even better.

We understand that you don't always know how long a job is going to take. Talk to our team about projected project times and actual day's usage of equipment. At HTC we aim to accommodate days when tools are not used by offering stand by rates

and contract rates for long term hire.

We don't usually charge for transit time for out of town customers.*

WWW.HTC.CO.NZ

HTC DAMAGE WAIVER

HTC Damage Waiver aims to reduce a client's financial liability during the hire of HTC's equipment. Which means it can help you avoid meeting the cost of unexpected damage of hire equipment.

HTC Damage Waiver is an agreement to cover 'loss of use'. It covers you against the cost of repair for accidental damage to equipment, replacement value, salvage costs & hire charges incurred during repair/replacement if the equipment is damaged.

It's important to know Damage Waiver does not cover against loss, theft or malicious or negligent damage. The client is responsible for the correct use, maintenance and safekeeping of HTC's equipment during the hire period.

Damage Waiver is a non-refundable fee of 10% of the hire charges for the equipment and billed on the hire invoice in addition to your hire charges. The Damage Waiver Excess is limited to no more than \$1000 for accidental loss or damage.

HTC PARTS AND SERVICE

HTC's in-house specialist fitters are trained to provide fast, reliable and economic repairs and scheduled maintenance for your hydraulic tools and equipment.

Common parts are stocked for most products we hire and sell, which means you get your gear back quicker. Worried about keeping your current projects progressing while your gear is being serviced?

HTC offers discount hire rates when your own tools and equipment are being serviced by our specialist fitters.

HTC also supply seal kits, hoses, couplers, gauges, hydraulic fluids, coolants, cutters, punches, compression dies and a large range of other spares and accessories.

The skillsets of HTC's Specialist Fitters go beyond repairs and scheduled maintenance. Our team can also create bespoke engineering solutions for your projects.

PRESSURE AND FORCE CALCULATIONS

CALCULATING FORCE FROM PRESSURE

The following calculates the amount of force being applied to a load. In order to complete the equation, the Effective Area (CEA) of the cylinder being used must be known. Each cylinder has its own specific CEA.

TO CALCULATE KILO NEWTONS USING A GAUGE READING (kgf/cm²)

$$\frac{\text{Applied Pressure (kgf/cm}^2\text{)} \times \text{Cylinder Effective Area} \times 9.81}{1000} = \text{kilo newtons}$$

TO CALCULATE KILO NEWTONS USING A GAUGE READING (psi)

$$\frac{\text{Applied Pressure (psi) divided by 14.233} \times \text{Cylinder Effective Area} \times 9.81}{1000} = \text{kilo newtons}$$

TO CONVERT KILO NEWTONS TO TONNES, DIVIDE BY 9.81

Effective Area for Cylinder Used: _____ cm²

CONVERSION FORMULAS

COMMON CONVERSION FORMULAS		SI* CONVERSION FORMULAS		APPROXIMATE CONVERSION
Multiply SI* Unit	By Conversion Factor	To get or Multiply Non-SI Unit	By Conversion Factor	To get SI* Unit
LENGTH				
millimetre (mm)	x 0.03937	= inch	x 25.4	= mm
(1 inch = 25.4mm exactly)				
centimetre (cm) 10mm	x 0.3937	= inch	x 2.54	= cm
metre (m) 1000mm	x 3.28	= foot	x 0.305	= m
metre (m)	x 1.09	= yard	x 0.914	= m
kilometre (km) 1000m	x 0.62	= mile	x 1.61	= km
AREA				
millimetre² (mm²)	x 0.00155	= inch²	x 6.45	= mm²
centimetre² (cm²)	x 01.55	= inch²	x 6.45	= cm²
metre² (m²)	x 10.8	= foot²	x 0.0929	= m²
metre² (m²)	x 1.2	= yard²	x 0.836	= m²
hectare (ha) 10,000m²	x 2.47	= acre²	x 0.405	= ha²
kilometre² (km²)	x 0.39	= mile²	x 2.59	= km²
VOLUME				
centimetre³ (cm³)	x 0.061	= inch³	x 16.4	= cm³
litre (l)	x 61	= inch³	x 0.016	= l3
millimetre (ml)	x 0.034	= oz-liq	x 29.6	= ml (1ml = 1cm³)
litre (l) 1000ml	x 1.06	= quart	x 0.946	= l3
litre (l)	x 0.26	= gallon	x 3.79	= l3
metre³ (m³) 1000l	x 1.3	= yard	x 0.76	= m³
MASS				
gram (g)	x 0.035	= ounce	x 28.3	= g
kilogram (kg) 1000g	x 2.2	= pound	x 0.454	= kg
metric Tonne (t) 1000kg	x 1.1	= Tonne (short)	x 0.907	= t
FORCE (N = kg • ms/²)				
newTonne (N)	x 0.225	= pound	x 4.45	= N
kilonewTonne (kN)	x 225	= pound	x 0.00445	= kN
TORQUE				
newTonne metre (Nm)	x 8.9	= lb. in.	x 0.113	= Nm
newTonne metre (Nm)	x 0.74	= lb. ft.	x 1.36	= Nm
PRESSURE				
kilopascal (kPa)	x 4.0	= in. H2O	x 0.249	= kPa
kilopascal (kPa)	x 0.30	= in. Hg	x 3.38	= kPa
kilopascal (kPa)	x 0.145	= p.s.i.	x 6.89	= kPa
megapascal (MPa)	x 145	= p.s.i.	x 0.00689	= MPa
Bar	x 14.5	= p.s.i.	x .0689	= Bar
POWER				
kilowatt (kw)	x 1.34	= hp	x 0.746	= kw
kilowatt (kw)	x 0.948	= Btu/s	x 1.055	= kw
watt (w)	x 0.74	= ft. lb/s	x 1.36	= w
TEMPERATURE				
°C = (°F - 32) ÷ 1.8	°F = (°C x 1.8) + 32			
FLOW				
cu. cm./min.	x 0.61	= cu. in./min. x 16.4 = cu. cm./min.		
litres/min.	x .2642	= GPMx 3.785 = litres/min.		

*System International (Modern Metric System)

Fractions	Decimals	Millimetres	Fractions	Decimals	Millimetres	Fractions	Decimals	Millimetres
1/64	0.016	0.397	23/64	0.359	9.128	45/64	0.703	17.859
1/32	0.031	0.794	3/8	0.375	9.525	23/32	0.719	18.256
3/64	0.047	1.191	25/64	0.391	9.922	47/64	0.734	18.653
1/16	0.063	1.588	13/32	0.406	10.319	3/4	0.750	19.050
5/64	0.078	1.984	27/64	0.422	10.716	49/64	0.766	19.447
3/32	0.094	2.381	7/16	0.438	11.113	25/32	0.781	19.844
7/64	0.109	2.778	29/64	0.453	11.509	51/64	0.797	20.241
1/8	0.125	3.175	15/32	0.469	11.906	13/16	0.813	20.638
9/64	0.141	3.572	31/64	0.484	12.303	53/64	0.828	21.034
5/32	0.156	3.969	2/2	0.500	12.700	27/32	0.844	21.431
11/64	0.172	4.366	33/64	0.516	13.097	55/64	0.859	21.828
3/16	0.188	4.763	17/32	0.531	13.494	7/8	0.875	22.225
13/64	0.203	5.159	35/64	0.547	13.891	57/64	0.891	22.622
7/32	0.219	5.556	9/16	0.563	14.288	29/32	0.906	23.019
15/64	0.234	5.953	37/64	0.578	14.684	59/64	0.922	23.416
1/4	0.250	6.350	19/32	0.594	15.081	15/16	0.938	23.813
17/64	0.266	6.747	39/64	0.609	15.478	61/64	0.953	24.209
9/32	0.281	7.144	5/8	0.625	15.875	31/32	0.969	24.606
19/64	0.297	7.541	41/64	0.641	16.272	63/64	0.984	25.003
5/16	0.313	7.938	21/32	0.656	16.669	1	1.000	25.400
21/64	0.328	8.334	43/64	0.672	17.006			
11/32	0.344	8.731	11/16	0.688	17.463			

1mm = 0.3937 and
.001 = 0.254mm



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