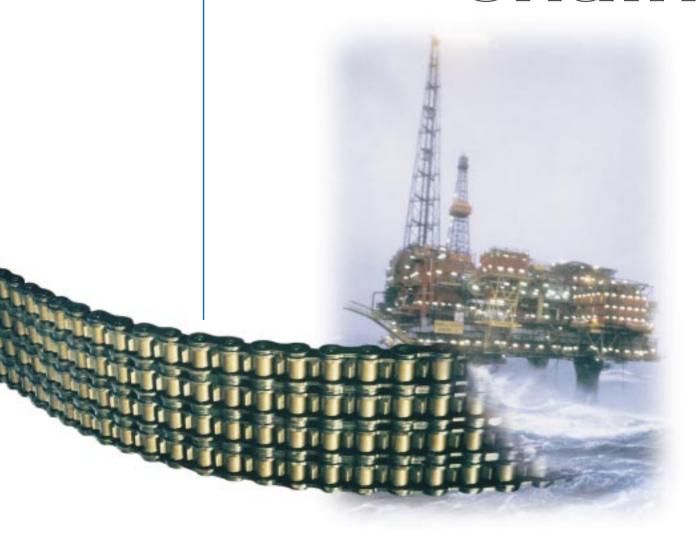


# oilfield

chain



**RENOLD** when compromise is not an option

## Oilfield industry ISO 606, ANSI B29.1M, API spec 7f

## RENOLD OILFIELD CHAIN



- API Approved
- Proven longer life in offshore environments
- Supreme performance at high speed and shock loads
- Excellent value

## **FUNCTION**

## Renold oilfield chains are used on:

- · Mud pump drives
- · Engine compounds
- · Tubular and casing draw works input
- · Transmission drives
- Catshafts
- · Low and high drum
- · Rotary countershafts
- · Rotary tables

In fact wherever chains are required in oilfields because reliability is paramount.

## **KEY FEATURES**

- Close control of material specifications to ensure consistent response to heat treatment
- Renold's new improved plate profile ensures optimum stress distribution for greater reliability
- Fatigue life is enhanced by shot peening and other pre-stressing processes on plates, bushes and rollers
- Renold's special holing processes for oilfield chain were specifically developed to give improved fatigue resistance while minimising susceptibility to stress corrosion cracking
- Bearing pins undergo customised heat treatment and surface finish operations to ensure unsurpassed toughness and wear life
- Closely controlled tolerances ensure smooth robust running even at high speeds
- Specially formulated factory lubrication gives substantially better initial wear performance and enhanced corrosion resistance
- Detachable chains for ease of fitting and replacement
- All chains are proof loaded before packing in durable containers
- · Roll pins standard for extra security

## PRODUCT DESCRIPTION

### As standard Renold offer chain:

- To API specification 7f-0008
- · Fully detachable along its length
- Simple, duplex (2 strand) and triplex (3 strand) with split pins
- Quadruplex (4 strand), Sextuplex (6 strand),
   Octoplex (8 strand) and Decuplex (10 strand) with roll pins for added security
- · With slip fit intermediate plates

## Options available on request include:

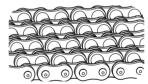
- · Split pins/roll pins
- · Press fit intermediate plates
- Special lubrication
- Renold ANSI Xtra for particularly arduous conditions
- · Pipe wrench chain

Many common oilfield chains are held in stock at our factories and many outlets worldwide.

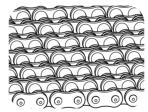
## CHAIN TYPES



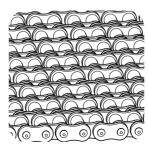
Duplex chain Standard ANSI B29.1 ISO 606 A



Quadruplex chain Standard ANSI B29.1 ISO 606 A



Sextuplex chain Standard ANSI B29.1 ISO 606 A



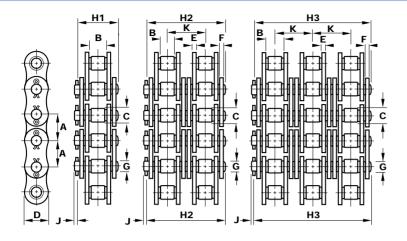
Octuplex chain Standard ANSI B29.1 ISO 606 A



Pipe wrench chain Special

# Oilfield industry ISO 606, ANSI B29.1M, API spec 7f

## RENOLD



## Connecting links Simple through to Multiplex













No 4

No 11/58

## **ANSI STANDARD - SIMPLE AND MULTIPLEX**

Chain Technical Details

Connecting Links

ANSI No	Renold Chain No	Pitch Inch A	Pitch mm	Inside Width B	Roller Dia C	Plate Height D	Plate Width Inner E	Plate Width Outer F	Pin Dia G	Pin Len H	Con Link Extra J	Trans Pitch K	F <sub>B</sub> Newtons Min	Weight kg/m	No 4	No 11/58
								·		_,,	,					
80	119084	1.000	25.4	15.38	15.75	24.05	3.25	3.25	7.93	33.5	5.4		64500	2.80	<b>V</b>	V
80-2	115084	1.000	25.4	15.38	15.75	24.05	3.25	3.25	7.93	62.7	5.4	29.29	129000	5.50	~	V
80-3	117084	1.000	25.4	15.38	15.75	24.05	3.25	3.25	7.93	91.9	5.4	29.29	193500	8.30	1	V
80-4	118085	1.000	25.4	15.38	15.75	24.05	3.25	3.25	7.93	120.7	5.4	29.29	258000	11.20	<b>~</b>	<b>V</b>
80-5	187815	1.000	25.4	15.38	15.75	24.05	3.25	3.25	7.93	149.9	5.4	29.29	322500	14.00	~	<b>V</b>
80-6	187825	1.000	25.4	15.38	15.75	24.05	3.25	3.25	7.93	179.4	5.4	29.29	387000	16.80	<b>V</b>	<b>V</b>
80-8	187955	1.000	25.4	15.38	15.75	24.05	3.25	3.25	7.93	237.8	5.4	29.29	516000	22.40	~	<b>V</b>
100	119104	1.250	31.75	19.05	19.05	29.97	4.06	4.06	9.54	41.1	6.1		104500	4.20	~	V
100-2	115104	1.250	31.75	19.05	19.05	29.97	4.06	4.06	9.54	77.0	6.1	35.76	209000	8.40	<b>V</b>	<b>V</b>
100-3	117104	1.250	31.75	19.05	19.05	29.97	4.06	4.06	9.54	113.0	6.1	35.76	313500	12.60	<b>~</b>	<b>V</b>
100-4	118105	1.250	31.75	19.05	19.05	29.97	4.06	4.06	9.54	147.1	6.1	35.76	418150	16.80	~	<b>V</b>
100-5	184825	1.250	31.75	19.05	19.05	29.97	4.06	4.06	9.54	182.9	6.1	35.76	522600	21.00	V	V
100-6 100-8	184835	1.250	31.75	19.05 19.05	19.05 19.05	29.97 29.97	4.06	4.06	9.54 9.54	218.7 290.1	6.1	35.76 35.76	627200	25.20	V	V
100-8	184845	1.250	31.75	19.00	19.00	29.91	4.06	4.06	9.54	290. l	6.1	33.70	836300	33.60	<b>V</b>	~
120	119124	1.500	38.1	25.68	22.23	35.89	4.8	4.8	11.11	50.8	6.6		142000	5.70	V	<b>V</b>
120-2	115124	1.500	38.1	25.68	22.23	35.89	4.8	4.8	11.11	96.3	6.6	45.44	284000	11.00	<b>V</b>	~
120-3	117124	1.500	38.1	25.68	22.23	35.89	4.8	4.8	11.11	141.7	6.6	45.44	427000	16.70	<b>V</b>	~
120-4	118125	1.500	38.1	25.68	22.23	35.89	4.8	4.8	11.11	185.7	6.6	45.44	570000	22.92	V	~
120-5	185985	1.500	38.1	25.68	22.23	35.89	4.8	4.8	11.11	231.2	6.6	45.44	711700	27.96	<b>V</b>	V
120-6 120-8	185975 185995	1.500 1.500	38.1 38.1	25.68 25.68	22.23 22.23	35.89 35.89	4.8	4.8 4.8	11.11	276.6 367.6	6.6	45.44 45.44	854000 1138000	33.50 44.65	<b>V</b>	V
120-8	188635	1.500	38.1 38.1	25.68 25.68	22.23	35.89 35.89	4.8 4.8	4.8 4.8	11.11 11.11	367.6 458.4	6.6 6.6	45.44 45.44	1423500	55.80	7	~
120-10	100033	1.500	30.1	23.00	22.23	33.07	4.0	4.0	11.11	430.4	0.0	43.44	1423300	33.00	•	V
140	119144	1.750	44.45	25.73	25.4	41.81	5.61	5.61	12.64	54.9	7.4		191000	7.80	~	~
140-2	115144	1.750	44.45	25.73	25.4	41.81	5.61	5.61	12.64	103.6	7.4	48.87	382000	15.50	~	<b>V</b>
140-3	117144	1.750	44.45	25.73	25.4	41.81	5.61	5.61	12.64	152.4	7.4	48.87	573000	23.10	V	V
140-4	118145	1.750	44.45	25.73	25.4	41.81	5.61	5.61	12.64	199.7	7.4	48.87	765000	30.21	V	V
140-5 140-6	188835 184935	1.750 1.750	44.45	25.73 25.73	25.4 25.4	41.81 41.81	5.61 5.61	5.61 5.61	12.64 12.64	248.4 297.5	7.4 7.4	48.87 48.87	956400 1147680	37.72 45.24	V	~
140-0	104733	1.750	44.45	23.73	23.4	41.01	3.01	3.01	12.04	271.3	1.4	40.01	114/000	43.24	V	V
160	119164	2.000	50.8	32.13	28.58	47.73	6.35	6.35	14.29	65.5	7.9		244500	10.40	~	<b>V</b>
160-2	115164	2.000	50.8	32.13	28.58	47.73	6.35	6.35	14.29	124.2	7.9	58.55	489000	20.60	<b>V</b>	~
160-3	117164	2.000	50.8	32.13	28.58	47.73	6.35	6.35	14.29	182.9	7.9	58.55	733950	31.00	<b>~</b>	<b>V</b>
160-4	118165	2.000	50.8	32.13	28.58	47.73	6.35	6.35	14.29	238.8	7.9	58.55	978600	38.90	<b>V</b>	~
160-6	184615	2.000	50.8	32.13	28.58	47.73	6.35	6.35	14.29	355.9	7.9	58.55	1467900	62.4	~	~
200	119204	2.500	63.5	38.15	39.67	59.56	8.13	8.13	19.81	80.3	10.2		422500	17.3	V	V
200-2	115204	2.500	63.5	38.15	39.67	59.56	8.13	8.13	19.81	151.9	10.2	71.55	845000	34.4	~	V
200-3	117204	2.500	63.5	38.15	39.67	59.56	8.13	8.13	19.81	223.5	10.2	71.55	1267500	51.2	V	V
200-4	118205	2.500	63.5	38.15	39.67	59.56	8.13	8.13	19.81	291.6	10.2	71.55	1690000	68.24	V	V

NB: Split pin chain is available on request for quadruplex chain and above.

Before specifying / using crank links or other connecting links please consult Renold.

## Oilfield industry -Renold ANSI Xtra chain

## RENOLD ANSI XTRA CHAIN - WHEN PERFORMANCE IS CRITICAL



Xtra shock resistant pins

Xtra finish shot peening and ball drifting

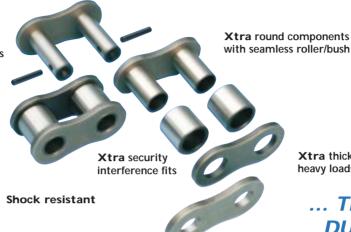


Fatigue resistant



High loads





Xtra thick plates resists heavy loads



## PRODUCT DESCRIPTION

Renold ANSI Xtra chain incorporates the usual Renold performance enhancing features including seamless bushes, ball drifted plate holes, shot peening and optimum interference fits. The extra features incorporated into this range of chain is classified by:

- Thicker side plates denoted by 'H'. These plates are approximately 20% thicker than standard Renold ANSI chain.
- · Through hardened pins, denoted by 'V'.

The gearing dimensions of ANSI Xtra chain are identical to our standard ANSI simple range and will therefore run on standard sprockets. The larger transverse pitch of duplex and triplex chains with heavy duty side plates (H or HV range) require special sprockets. The range can therefore be summarised as follows:

**H RANGE** - Identical to standard Renold ANSI chain with the exception of the overall width.

Thicker plates give this chain excellent resistance to heavy loads and help absorb shock.

Duplex (two strand) and triplex (three strand) chain must have sprockets with an increased transverse pitch of the teeth.

V RANGE - Identical dimensions to standard Renold ANSI chain but with a higher breaking load and excellent resistance to shock loads.

**HV RANGE** - A combination of the 'H' and 'V' chain, giving excellent resistance to both heavy and shock loads.

A further enhancement to the chain life can be achieved by hardening the sprocket teeth of the drive. 'H' and 'HV' chains are designed for improved fatigue life, therefore offset and slip fit joints which have a lower fatigue resistance are not recommended.

Shown below is an easy to use features guide to help in selecting chain to suit its application.

Chain Type	Strength	Wear	Heavy Loads	Shock Loads	High Speeds		
Standard ANSI	Good	Excellent	Good	Good	Excellent		
Xtra H Range	Good	Excellent	Excellent	Good	Not Suitable		
XtraV Range	Excellent	Good	Good	Excellent	Good		
Xtra HV Range	Excellent	Good	Excellent	Excellent	Not Suitable		

# Oilfield industry - Renold ANSI Xtra chain

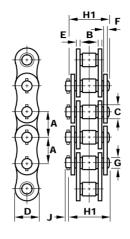
## RENOLD

## RENOLD ANSI XTRA CHAIN

Part Number: See technical data below.

**Application:** ANSI Xtra roller chain is specifically designed and manufactured for arduous applications such as oilfield draw works where frequent, impulsive or heavy loads are involved.

This chain is interchangeable with our standard ANSI range and can be used to upgrade the performance of existing applications subject to normal design and installation checks. Chains are supplied with roll pins as standard. Multiplex versions are also available on request.



Connecting links Simple





No 4

No 11/58

## Renold ANSI Xtra Chain - Simple

Chain Technical Details

Connecting Links

ANSI No	Renold Chain No	Pitch Inch		Inside Width	Roller Dia C	Plate Height Max D	Plate Width Inner E	Plate Width Outer F	Pin Dia	Pin Len	Con Link Extra	F <sub>B</sub> Newtons Min	Weight kg/m	No 4	No 11/58
		Α	Α	В					G	H1	J				
60H 60HV	583661 583666	0.75 0.75	19.05 19.05	12.57 12.57	11.91 11.91	17.50 17.50	3.17 3.17	3.17 3.17	5.94 5.94	28.6 28.6	4.6 4.6	40000 55000	1.80 1.80	<i>V</i>	<i>V</i>
80H 80V 80HV	584531 584546 584541	1.00 1.00 1.00	25.4 25.4 25.4	15.75 15.75 15.75	15.88 15.88 15.88	24.05 24.05 24.05	4.06 3.25 4.06	4.06 3.25 4.06	7.93 7.93 7.93	37.0 35.5 37.0	5.4 5.4 5.4	70000 75000 87000	3.30 2.80 3.30	V V	V V
100H 100V 100HV	585156 585176 585166	1.25 1.25 1.25	31.75 31.75 31.75	18.90 18.90 18.90	19.05 19.05 19.05	29.97 29.97 29.97	4.8 4.06 4.8	4.8 4.06 4.8	9.54 9.54 9.54	44.1 41.1 44.1	6.1 6.1 6.1	104500 122000 133450	4.80 4.20 4.80	<i>y y</i>	V V
120H 120V 120HV	585561 585576 585571	1.50 1.50 1.50	38.1 38.1 38.1	25.23 25.23 25.23	22.23 22.23 22.23	35.89 35.89 35.89	5.61 4.8 5.61	5.61 4.8 5.61	11.11 11.11 11.11	54.1 50.8 54.1	6.6 6.6 6.6	142000 169000 182400	6.30 5.70 6.30	<i>y y</i>	V V
140H 140V 140HV	585816 585836 585826	1.75 1.75 1.75	44.45 44.45 44.45	25.23 25.23 25.23	25.4 25.4 25.4	41.81 41.81 41.81	6.35 5.61 6.35	6.35 5.61 6.35	12.71 12.71 12.71	57.9 54.9 57.9	7.4 7.4 7.4	191000 235000 258000	8.60 7.80 8.60	<i>y y y</i>	V V
160H 160V 160HV	586031 586046 586041	2.00 2.00 2.00	50.8 50.8 50.8	31.55 31.55 31.55	28.58 28.58 28.58	47.73 47.73 47.73	7.11 6.35 7.11	7.11 6.35 7.11	14.29 14.29 14.29	68.5 65.5 68.5	7.9 7.9 7.9	244500 289000 311400	11.20 10.40 11.20	V V	V V
180H 180V 180HV	586261 586256 586271	2.25 2.25 2.25	57.15 57.15 57.15	35.48 35.48 35.48	35.71 35.71 35.71	53.51 53.51 53.51	8.13 7.11 8.13	8.13 7.11 8.13	17.46 17.46 17.46	77.94 73.90 77.94	9.1 9.1 9.1	324700 382500 422500	15.21 13.94 15.21	<i>V V V</i>	V V
200H 200V 200HV	586481 586476 586491	2.50 2.50 2.50	63.5 63.5 63.5	37.85 37.85 37.85	39.67 39.67 39.67	59.56 59.56 59.56	9.65 8.13 9.65	9.65 8.13 9.65	19.85 19.85 19.85	86.4 80.3 86.4	10.2 10.2 10.2	422500 445000 600500	19.50 17.30 19.50	V V	V V

 $F_B$  = AXIAL BREAKING FORCE

NB: Split pin chain is available on request.

Before specifying / using crank links or other connecting links please consult Renold.

# Oilfield chain - value through quality

## RENOLD ULTIMATE SPECIFICATION

The Renold oilfield Chain specification results from years of design, test and application experience ensuring product reliability and consistency. In order to optimise product performance, we strictly control: materials specification, heat treatment, processes, fits, assembly, lubrication and packaging.

Renold Pins are hardened and centreless ground producing almost perfectly cylindrical diameters with an extremely high surface hardness, optimising wear life.

Fatigue life is substantially improved by optimising fits and controlling plate hole quality.

Sprocket life is enhanced by matching the chain gearing exactly to the Renold tooth form.

Renold Chain has detachable fatigue resistant interference fit roll pins, ensuring a maintenance friendly feature to minimise downtime, and to provide extra security.

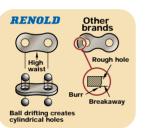
The Renold geometrically designed bush facilitates optimum fits in the plates, substantially improving resistance to fatigue.

Roller and bush life are maximised by the use of highly technological components and the careful selection and control of the heat treatment process.

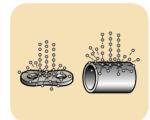
The high waisted plate shape, pioneered by Renold in 1975, ensures optimum stress distribution.



## BALL DRIFTING



## SHOT PEENING



Renold pioneered ball drifting to create precisely controlled holes, which combined with other Renold process technology improves fatigue resistance and enhances wear performance.

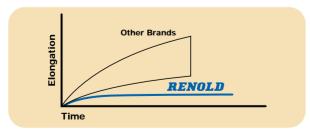
## RENOLD ULTIMATE PERFORMANCE

- The performance of our chain is ensured by a programme of continuous testing and quality audits.
- Breaking loads exceed the minimum international standards and ANSI standards.
- Our specially formulated lubricants reduce initial wear, give corrosion protection and ensure long storage life.
- Renold Chain is highly fatigue resistant, giving up to four times the life of many other chains.

## RENOLD ULTIMATE RELIABILITY

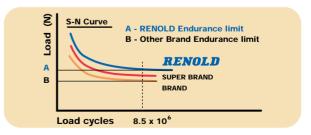
- The key to Renold Chain reliability is consistency in design and manufacture.
- Renold's sophisticated non conformity systems are the basis of continuous quality improvements.
- In over 100 years of manufacture, Renold product has a proven track record throughout industry, not only in oilfield but also in; aerospace, automotive, agricultural, nuclear power, marine diesel engines, food processing and many other applications.

## WEAR PERFORMANCE



Renold's unique control over pin/bush contact makes sure that wear life is better than other brands.
Little initial chain adjustment is therefore required.

## FATIGUE PERFORMANCE



The combination of all the features described ensures Renold Chain out performs other brands as shown in the S-N curve above

## Fixed and variable speed gear units for the oilfield industry

## RENOLD

## **SM SERIES**

SM Series speed reducers are available as single reduction units with 5:1 ratios and as double reduction units with ratios of 13:1, 20:1, 25:1.
Ten sizes are available up to 160kW capacity. Parallel and taper output shaft mounting are offered as standard.



## PM SERIES

The PM Series are helical/worm geared motor units available in six unit sizes up to 90kW capacity. A wide range of mounting and shaft options are available. The standard unit has ratios from 8:1 to 307:1 and when combined with RS Series helical gear, offers ratios of up 20,000:1.



# standards of excellence requires finer and ever more stringent process control.

The need for reproducible

Renold's proficiency, total capability and flexibility offers designers, specifiers and end users the reassurance required for precision and accuracy.

This distinguishes Renold as the Hallmark of Quality.

## **TITAN**

The Titan range of 10" to 28" centres, heavy-duty worm units is available in single and double reduction types, ratios from 5:1 up to 4900:1, with input powers from 16 to 506kW.



## **HERCULES**

The Hercules range of gear units include helical and bevel/helical types, foot, shaft mounted, speed reducer and motorised options. The ratio range is 1.12:1 to 1250:1 power capacity of up to 1000kW.



## CARTER GEAR

Carter hydrostatic variable speed drives with 27:1 speed range and capacities up to 37kW offer a number of control options. This particular unit is suitable

for use in flameproof and hostile environments.



# Fixed and variable speed gear units for the oilfield industry



## **GEARFLEX**

Designed to AGMA and metric standards of interchangeability the Gearflex 'A' series coupling is a heavy duty product with power capacities of up to 60,000kW @ 100rpm.



## **HYDRASTART**

The Hydrastart fluid coupling gives soft start speed and torque control on high inertia load applications. Standard fill and delay fill types are available, extending the acceleration time and further reducing the start up torque.



## SPRAG CLUTCH

Sprag clutches are the solution for back stopping, indexing and over running applications. The no backlash design gives positive connection between driver and driven components. Torque capacities of over 800,000NM are available, with bore sizes of 500mm.



## **RB COUPLING**

General purpose, cost effective range available in either shaft or shaft or fly wheel to shaft configuration torque of 41kNm.



## **DCB COUPLING**

DCB couplings make it ideally suited for marine propulsion, power generation and reciprocating compressor applications where long life, fail safe operation and control of resonant torsional vibrations are essential.

# Unique quality and safety

## RENOLD

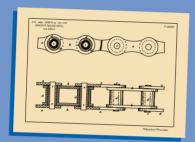
## 'IN A CLASS OF ITS OWN'

Renold, the inventor of Bush Roller Chain has led the world in chain technology for more than a century.



Only products designed and supplied to our specification carry the MARK OF EXCELLENCE, 'RENOLD'. You can be sure that when you choose such a product, Renold Service, Quality, Value for Money and LONG LIFE PERFORMANCE are guaranteed.

Original patent drawing 1880



## A UNIQUE SERVICE

Renold, the premier chain company is dedicated to providing national and global customers with products to the ultimate of specification and design, manufactured to exceed the highest international standards.

Investment in manufacturing and process technology, combined with an international sales and distribution network, places Renold's commitment to the development of chain products and customer service at the forefront of the industry. Renold's 16 national sales companies and over 70 country distributors around the world have direct access to extensive Renold design, test and manufacturing facilities, enabling the chain required to be promptly specified and produced. Renold, the power transmission specialists, provide a worldwide customer orientated product service.

## CONSISTENCY

Only materials that meet the Renold exacting specifications are used for the manufacture of our chain components.

Continual investment in new technology demonstrates Renold's commitment to innovation. State of the art automatic assembly, ensures consistent quality of all Renold components.



Stringent process controls are in place at every stage of production.
Every chain is proof loaded, resulting in minimum initial wear, greater fatigue resistance and improved wear performance.



Corrosion protection and long life are achieved by automatically pre-lubricating every chain with a specially formulated grease.
Chain lubrication is one of the most important factors in achieving a long and trouble free service life.
Renold can advise the correct method to suit your needs.



## QUALITY

Our commitment to quality ensures that Renold Transmission and Conveyor Chain conforms to and surpasses the highest international standards of manufacture and design, including approval by the American Petroleum Institute.

All of our manufacturing systems conform to ISO9001.

Renold employees are fully trained to ensure all products meet the unique Renold specification.



We also manufacture to the specifications required by API, BAe, CAA, LONDON UNDERGROUND, ROLLS-ROYCE and JAGUAR.



## RENOLD WORLDWIDE

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