

Oilfield Chain



API SPEC 7F-0020

RENOLD

Superior Chain Technology

Renold Oilfield Chain

Unique quality and safety



Leading edge technology

Renold provides practical cost effective solutions, with a commitment of value through quality. This is achieved by continuous investment in people, process technology and manufacturing.

Consistent reliability

Renold's 100 years of experience in the design and manufacture of power transmission products, to the highest specifications, with proven performance in diverse industries worldwide, underwrites the guaranteed quality and the assurance of reliability.

Package solutions

One stop for your drive systems, including roller and conveyor chain, gears, motors, couplings, variators and fabricated bases.

Service excellence and care

Renold offers a unique level of service excellence and customer care. Our experienced applications engineers will select the optimum solution with the aid of the latest computer and design technology. Renold is the name for service, care and peace of mind.

Special solutions and innovations

Renold is recognised throughout the industry for its capability to create specific solutions to customers' unique requirements. International companies and industries from steel to food processing to escalators to textile machinery have chosen Renold to solve their problems.

Local and international availability

The Renold organisation stretches world-wide.

- 18 National Sales Companies
- Over 70 Overseas Distributors offering the comprehensive Renold range of power transmission products

Chain for oil extraction

Renold can supply all your chain requirements for oil extraction. Chains for applications including mud pump drives, draw works, transmission

drives, catshafts, coil tubing injector heads and rotary countershafts and tables make up a comprehensive range of industry-proven, high specification products.

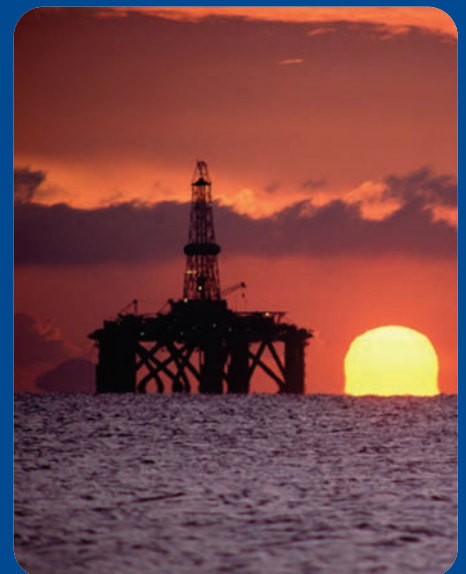
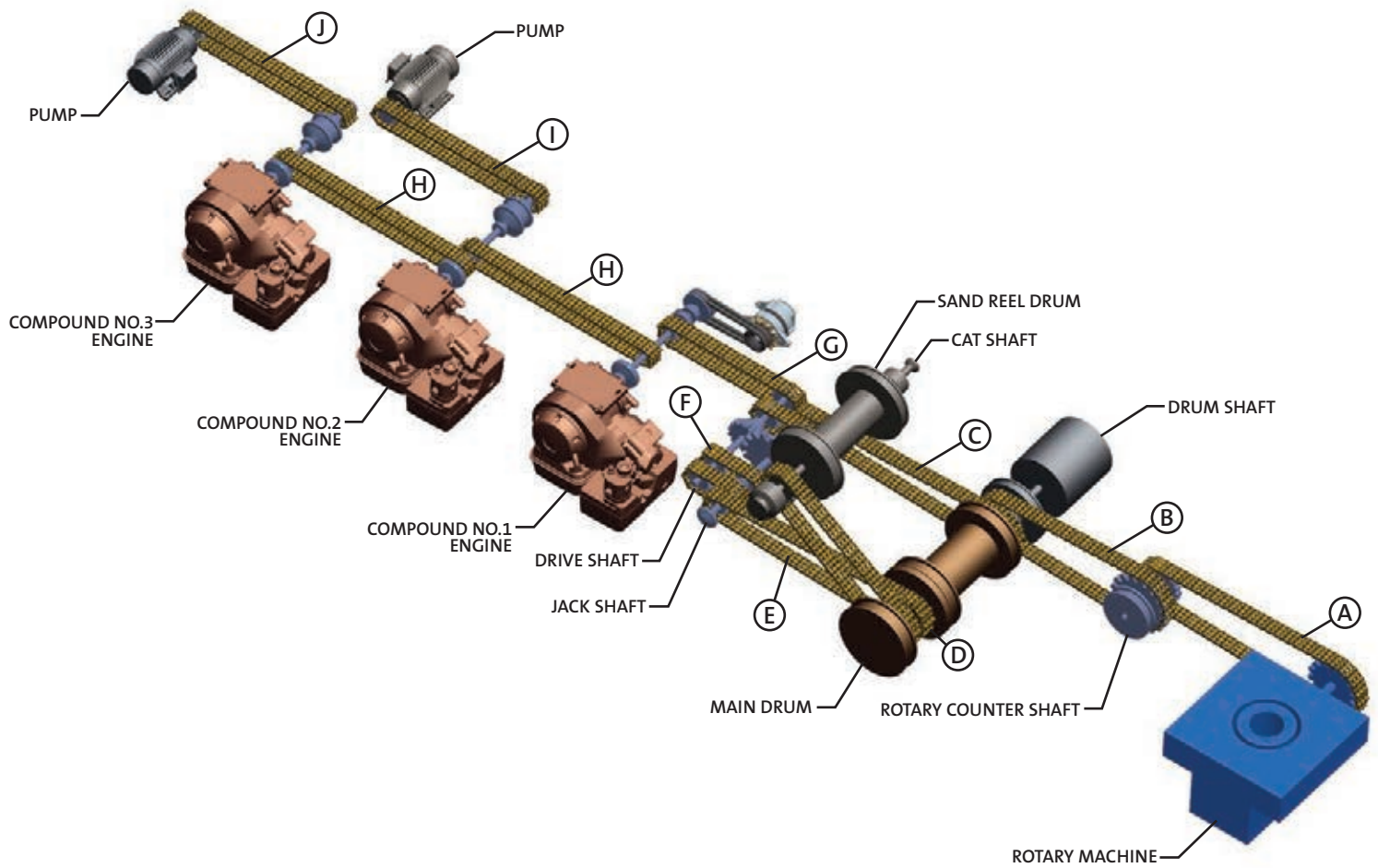


Photo Courtesy of Fluid Design Solutions Inc.

Renold Oilfield Chain



Horsepower table

S.No.	Chain Drive	4000	3000	2000	1500	1000	750	500
A	Rotary Table	160-2	160-2 200H-1	160-2	160-2 140-2	140-2 160-1	140-2 160-1	140-1 120-1
B	Rotary Countershaft	160-2 200H-1	160-2	160-2 140-2	160-2 160-1	140-2 160-1	140-2 120-1	140-1 160-1
C	High Drum	240-3	200H-3	160-4	160-3	140-3 160-2	160-2 140-2	120-3 140-2
D	Low Drum	240-3	200H-3	160-4	160-3	140-3 160-2	160-2 140-3	120-3 140-2
E	Catshaft	160-2	160-2 200H-1	160-2	160-1 140-2	160-1 140-2	160-1 140-2	140-1 120-1
F	Transmission	140-8	160-4 200H-3	160-4 160-3	160-3	160-2 140-3	140-2	120-2 100-3
G	Draw works Input	140-8	120-8	120-6	120-4	120-3 120-4	100-4	100-3 100-4
H	Compound	140-8	120-8	120-6	120-4	120-3 120-4	100-4 120-4	100-3
I & J	Mud Pump Drives	140-8	120-8	120-8 120-6	120-6 120-4	120-4 120-3	100-6 100-4	100-4 100-3

Renold Oilfield chain is best because...

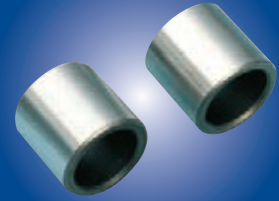


Bearing Pins

Renold pins are case hardened and centreless ground producing perfectly cylindrical diameters with extremely high surface hardness, maximizing wear life.

Bush

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



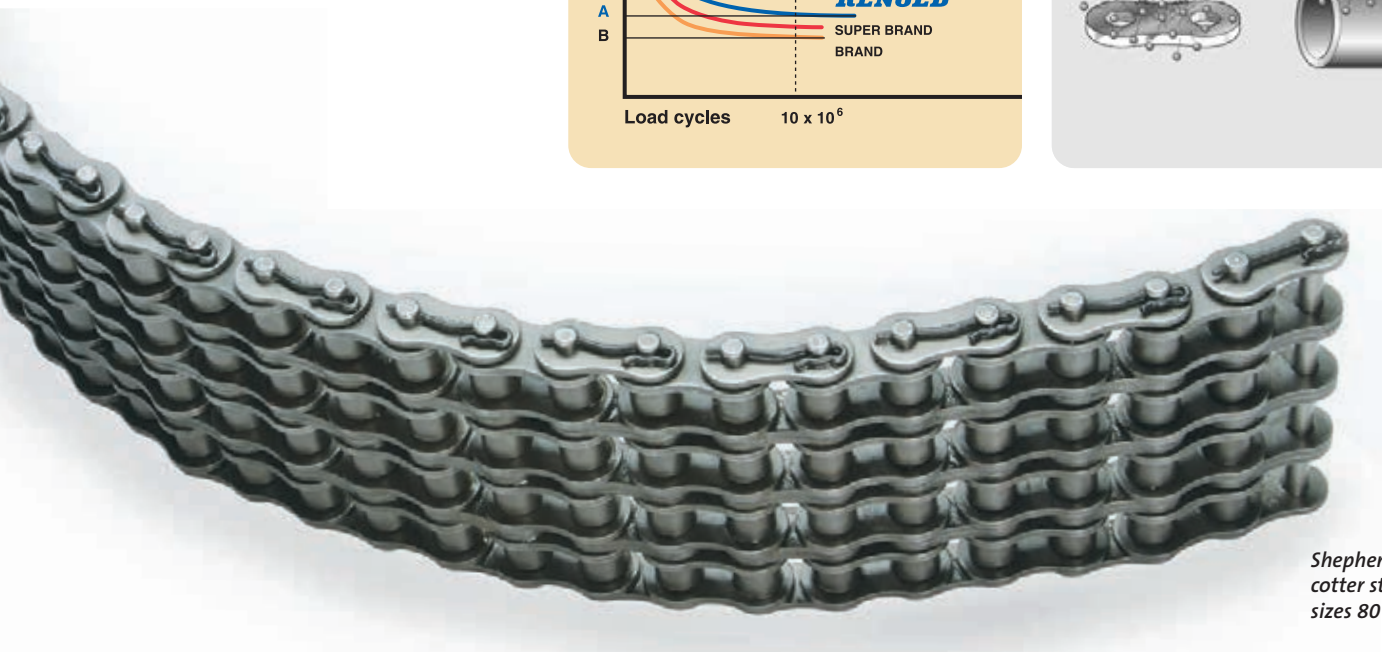
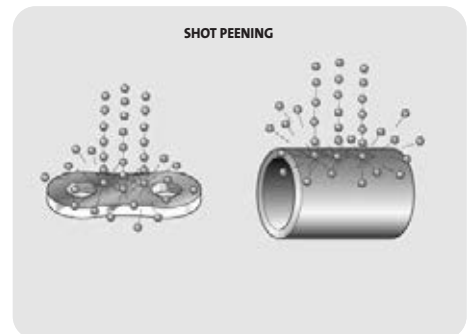
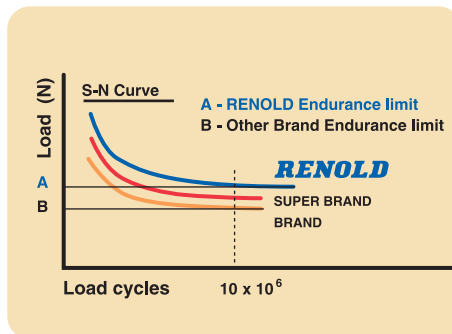
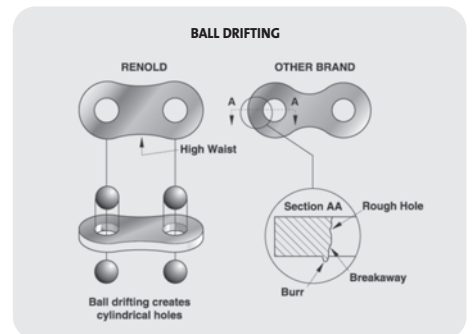
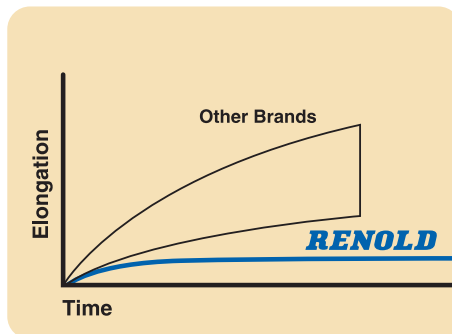
Roller

Roller and bush life are maximized by the use of precision components and the careful selection and control of the heat treatment process.

Closely controlled tolerances ensure smooth robust running even at high speeds.

Renold ultimate performance

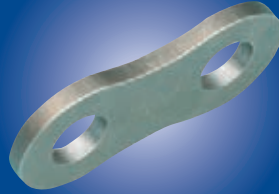
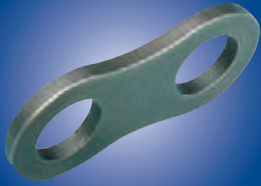
- The performance of our chain is ensured by a programme of continuous testing and quality audits
- Breaking loads exceed the minimum international standards
- Our specially formulated lubricants reduce initial wear, give corrosion protection and ensure long storage life
- Renold chain is highly fatigue resistant. Fatigue life is enhanced by shot peening and other pre-stressing techniques



Shepherd's Crook cotter standard on sizes 80 to 160

Inner Plate

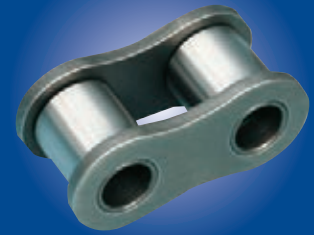
The high waisted plate shape, also pioneered by Renold, ensures optimum stress distribution.



Outer Plate

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

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



Renold Oilfield Chain

- Manufactured to API specification 7F-0020
- Proven longer life in offshore environments
- Supreme performance at high speed and shock loads
- Excellent return on investment
- All chains are proof loaded before packing in durable containers
- Other cotter styles optional



API SPEC 7F-0020

Function

Renold oilfield chains are used on:

- Mud pump drives
- Engine compounds
- Tubular and casing draw works input
- Transmission drives
- Catshafts
- Coil tubing injector gripper and skate chains
- Low and high drum
- Rotary countershafts
- Rotary tables

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

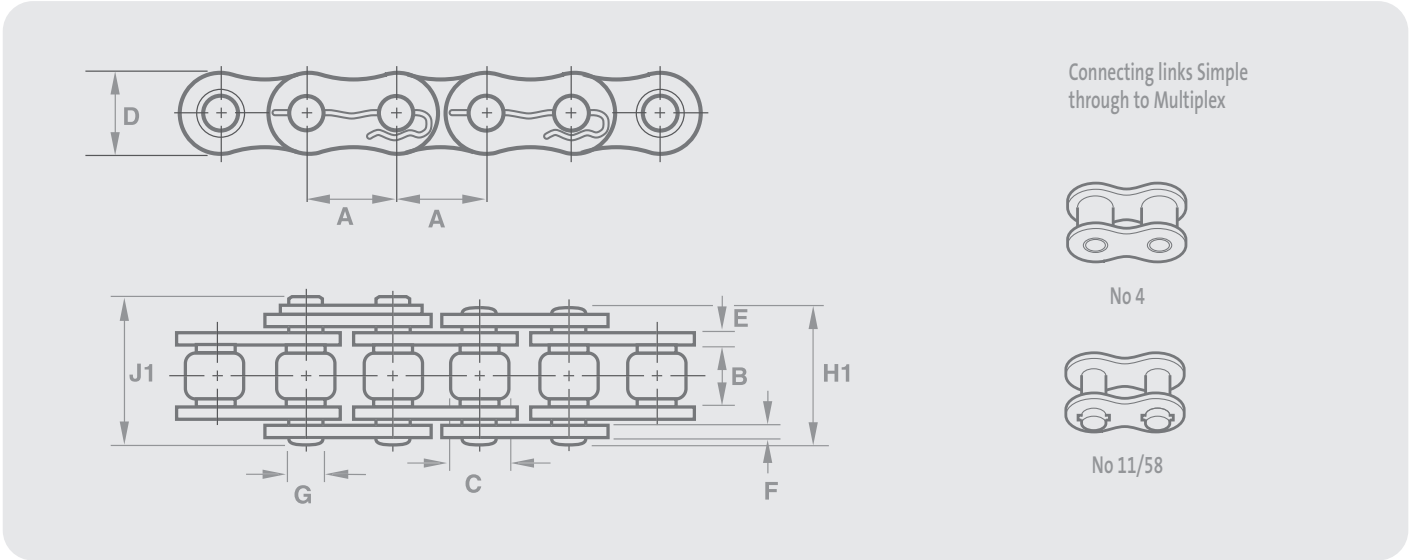


Oilfield industry - ANSI standard chain

ISO 606 / ANSI B29.1M / API spec 7F



API SPEC 7F-0020



ANSI - simplex and multiplex

Chain Ref.		Technical Details (mm)												
Renold No.	ANSI No.	Pitch (inch)	Pitch (mm)	Inside Width Min	Roller Diam Max	Plate Height Max	Inner Plate Thickness Max	Outer Plate Thickness Max	Pin Diam Max	Pin Length Max	Conn Link Extension Max	Transverse Pitch Nom	ISO606 Tensile Strength Min	Mass kg/m
		A	A	B	C	D	E	F	G	H1	J	K	(N)†	
AV80A1C	80-1	1.000	25.400	15.750	15.880	24.130	3.150	3.150	7.940	32.700	3.000	-	55600	2.800
AV80A2C	80-2	1.000	25.400	15.750	15.880	24.130	3.150	3.150	7.940	61.900	3.000	29.290	111200	5.500
AV80A3C	80-3	1.000	25.400	15.750	15.880	24.130	3.150	3.150	7.940	91.200	3.000	29.290	166800	8.300
AV80A4C	80-4	1.000	25.400	15.750	15.880	24.130	3.150	3.150	7.940	120.700	3.000	29.290	222400	11.200
AV80A5C	80-5	1.000	25.400	15.750	15.880	24.130	3.150	3.150	7.940	149.900	3.000	29.290	278000	14.000
AV80A6C	80-6	1.000	25.400	15.750	15.880	24.130	3.150	3.150	7.940	179.400	3.000	29.290	333600	16.800
AV80A8C	80-8	1.000	25.400	15.750	15.880	24.130	3.150	3.150	7.940	237.800	3.000	29.290	444800	22.400
AV100A1C	100-1	1.250	31.750	18.900	19.050	30.170	4.050	4.050	9.540	39.700	4.200	-	87000	4.200
AV100A2C	100-2	1.250	31.750	18.900	19.050	30.170	4.050	4.050	9.540	75.400	4.200	35.760	174000	8.400
AV100A3C	100-3	1.250	31.750	18.900	19.050	30.170	4.050	4.050	9.540	111.200	4.200	35.760	261000	12.600
AV100A4C	100-4	1.250	31.750	18.900	19.050	30.170	4.050	4.050	9.540	147.100	4.200	35.760	348000	16.800
AV100A5C	100-5	1.250	31.750	18.900	19.050	30.170	4.050	4.050	9.540	182.900	4.200	35.760	435000	21.000
AV100A6C	100-6	1.250	31.750	18.900	19.050	30.170	4.050	4.050	9.540	218.700	4.200	35.760	522000	25.200
AV120A1C	120-1	1.500	38.100	25.230	22.230	36.200	4.800	4.800	11.110	49.300	5.300	-	125000	5.700
AV120A2C	120-2	1.500	38.100	25.230	22.230	36.200	4.800	4.800	11.110	94.700	5.300	45.440	250000	11.000
AV120A3C	120-3	1.500	38.100	25.230	22.230	36.200	4.800	4.800	11.110	140.200	5.300	45.440	375000	16.700
AV120A4C	120-4	1.500	38.100	25.230	22.230	36.200	4.800	4.800	11.110	185.700	5.300	45.440	500000	22.800
AV120A5C	120-5	1.500	38.100	25.230	22.230	36.200	4.800	4.800	11.110	231.200	5.300	45.440	625000	27.400
AV120A6C	120-6	1.500	38.100	25.230	22.230	36.200	4.800	4.800	11.110	276.600	5.300	45.440	750000	33.500
AV120A8C	120-8	1.500	38.100	25.230	22.230	36.200	4.800	4.800	11.110	367.600	5.300	45.440	1000000	44.650
AV140A1C	140-1	1.750	44.450	25.230	25.400	42.230	5.850	5.850	12.710	52.900	5.200	-	170000	7.800
AV140A2C	140-2	1.750	44.450	25.230	25.400	42.230	5.850	5.850	12.710	101.800	5.200	48.870	340000	15.500
AV140A3C	140-3	1.750	44.450	25.230	25.400	42.230	5.850	5.850	12.710	150.700	5.200	48.870	510000	23.100
AV140A4C	140-4	1.750	44.450	25.230	25.400	42.230	5.850	5.850	12.710	199.700	5.200	48.870	680000	30.800
AV140A6C	140-6	1.750	44.450	25.230	25.400	42.230	5.850	5.850	12.710	297.500	5.200	48.870	1020000	45.240
AV160A1C	160-1	2.000	50.800	31.550	28.580	48.260	6.550	6.550	14.290	63.100	6.500	-	223000	10.400
AV160A2C	160-2	2.000	50.800	31.550	28.580	48.260	6.550	6.550	14.290	121.600	6.500	58.550	446000	20.600
AV160A3C	160-3	2.000	50.800	31.550	28.580	48.260	6.550	6.550	14.290	180.200	6.500	58.550	669000	31.000
AV160A4C	160-4	2.000	50.800	31.550	28.580	48.260	6.550	6.550	14.290	238.800	6.500	58.550	892000	41.200
AV200A1C	200-1	2.500	63.500	37.850	39.670	60.330	8.250	8.250	19.850	76.900	9.000	-	347000	17.300
AV200A2C	200-2	2.500	63.500	37.850	39.670	60.330	8.250	8.250	19.850	148.500	9.000	71.550	694000	34.400
AV200A3C	200-3	2.500	63.500	37.850	39.670	60.330	8.250	8.250	19.850	229.000	9.000	71.550	1041000	51.200
AV200A4C	200-4	2.500	63.500	37.850	39.670	60.330	8.250	8.250	19.850	291.600	9.000	71.550	1420000	68.240
AV240A1C	240-1	3.000	76.200	47.350	47.620	72.390	9.750	9.750	23.800	94.400	10.500	-	500000	25.000

NB: From ANSI 80 to ANSI 160 Chains Shepherd's Crook option available. For ANSI 200 and ANSI 240 Chains T-pin option available.
 Before specifying / using crank links or other connecting links please consult Renold.
 For Through Hardened pin design, the Renold chain number is AV80V1C.

Oilfield industry - ANSI Xtra chain

RENOLD ANSI XTRA...

Xtra shock resistant pins

Xtra round components with seamless roller/bush

Xtra finish shot peening ball drifting

Xtra security interference fits

Xtra thick plates resists heavy loads

Shock resistant

Fatigue resistant

High loads

... THE HEAVY DUTY CHAIN

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 ANSI chain
- Through hardened pins, denoted by 'V' (used commonly in our Coil Tubing Injector chain replacement kits)

Product summary

H Range - Identical to standard ANSI chain with the exception of the overall width. Thicker plates give this chain excellent resistance to heavy loads and help absorb shock. Duplex and triplex chain must have sprockets with an increased transverse pitch of the teeth.

V Range - Identical dimensions to standard 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.

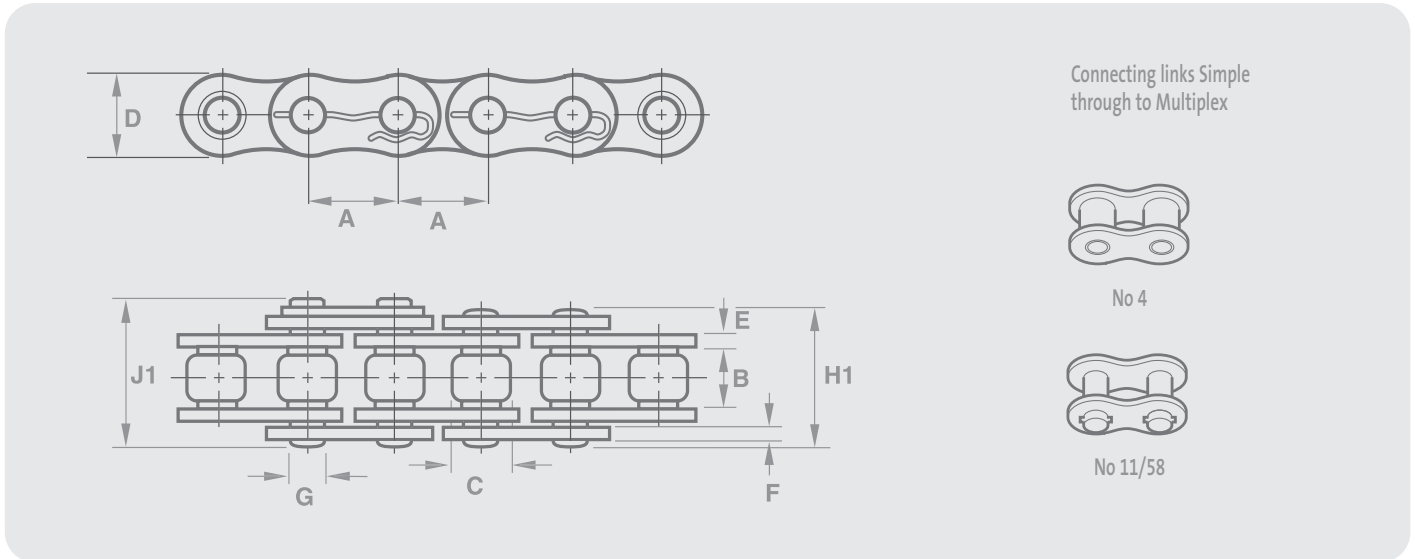
A further enhancement to the chain life can be achieved by hardening the sprocket teeth of the drive. 'H' and 'HV' chains are designed for improved fatigue life, therefore offset and slip fit joints which have a lower fatigue resistance are not recommended.

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 XTRA H Range XTRA V Range XTRA HV Range	Good Good Excellent Excellent	Excellent Excellent Good Good	Good Excellent Good Excellent	Good Good Excellent Excellent	Excellent Not Suitable Good Not Suitable

Oilfield industry - ANSI Xtra chain

Simplex & multiplex



ANSI XTRA - simplex and multiplex

Chain Ref.		Technical Details (mm)												
Renold No.	ANSI No.	Pitch (inch)	Pitch (mm)	Inside Width Min	Roller Diam Max	Plate Height Max	Inner Plate Thickness Max	Outer Plate Thickness Max	Pin Diam Max	Pin Length Max	Conn Link Extension Max	Transverse Pitch Nom	ISO606 Tensile Strength Min	Mass kg/m
		A	A	B	C	D	E	F	G	H1	J	K	(N)†	
AV80H1C	80H-1	1.000	25.400	15.750	15.880	24.050	4.050	4.050	7.940	37.000	5.400	-	55600	3.300
AV80H2C	80H-2	1.000	25.400	15.750	15.880	24.050	4.050	4.050	7.940	68.700	5.400	32.590	112200	6.600
AV80H3C	80H-3	1.000	25.400	15.750	15.880	24.050	4.050	4.050	7.940	101.300	5.400	32.590	166800	9.900
AV100H1C	100H-1	1.250	31.750	18.900	19.050	29.970	4.800	4.800	9.540	44.100	6.100	-	87000	4.800
AV100H2C	100H-2	1.250	31.750	18.900	19.050	29.970	4.800	4.800	9.540	83.200	6.100	39.090	174000	10.300
AV100H3C	100H-3	1.250	31.750	18.900	19.050	29.970	4.800	4.800	9.540	122.300	6.100	39.090	261000	15.500
AV120H1C	120H-1	1.500	38.100	25.230	22.230	35.890	5.850	5.850	11.110	52.5300	6.600	-	125000	6.300
AV120H2C	120H-2	1.500	38.100	25.230	22.230	35.890	5.850	5.850	11.110	105.000	6.600	48.870	250000	12.600
AV120H3C	120H-3	1.500	38.100	25.230	22.230	35.890	5.850	5.850	11.110	158.00	6.600	48.870	375000	18.800
AV140H1C	140H-1	1.750	44.450	25.230	25.400	41.810	6.550	6.550	12.710	57.900	7.400	-	170000	8.600
AV140H2C	140H-2	1.750	44.450	25.230	25.400	41.810	6.550	6.550	12.710	106.900	7.400	52.200	340000	16.700
AV140H3C	140H-3	1.750	44.450	25.230	25.400	41.810	6.550	6.550	12.710	160.400	7.400	52.200	510000	25.100
AV160H1C	160H-1	2.000	50.800	31.550	28.580	47.730	7.250	7.250	14.290	68.500	7.900	-	223000	11.200
AV160H2C	160H-2	2.000	50.800	31.550	28.580	47.730	7.250	7.250	14.290	130.400	7.900	61.900	446000	23.500
AV160H3C	160H-3	2.000	50.800	31.550	28.580	47.730	7.250	7.250	14.290	182.900	7.900	61.900	669000	35.200
AV180H1C	180H-1	2.250	57.150	35.480	35.710	53.510	8.250	8.250	17.460	73.900	9.100	-	281000	15.200
AV180H2C	180H-2	2.250	57.150	35.480	35.710	53.510	8.250	8.250	17.460	140.800	9.100	65.840	562000	30.400
AV180H3C	180H-3	2.250	57.150	35.480	35.710	53.510	8.250	8.250	17.460	206.000	9.100	65.840	843000	45.600
AV200H1C	200H-1	2.500	63.500	37.850	39.670	59.560	9.750	9.750	19.850	86.400	10.200	-	347000	19.500
AV200H2C	200H-2	2.500	63.500	37.850	39.670	59.560	9.750	9.750	19.850	164.700	10.200	78.310	694000	39.000
AV200H3C	200H-3	2.500	63.500	37.850	39.670	59.560	9.750	9.750	19.850	243.000	10.200	78.310	1041000	57.700
AV240H1C	240H-1	3.000	76.200	47.350	47.630	71.300	13.000	13.000	23.800	106.900	10.500	-	500000	30.500

NB: From ANSI 80H to ANSI 160H Chains Shepherd's Crook option available. For ANSI 180H to ANSI 240H Chains T-pin option available.

For Through Hardened pin design, the Renold chain number is AV80HV1C.

† Renold chain far exceeds the ISO 606 tensile strength requirement, but Renold do not consider that this figure provides a useful indicator to the key chain performance areas of wear and fatigue.

Oilfield industry

Renold products for the oilfield industry



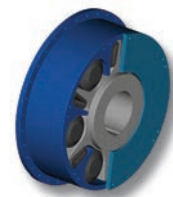
SMX^{TRA}

SMXtra Series speed reducers are available in 12 sizes with 5 ratios options per size. Power capacities available up to 235kW. Parallel and taper output shaft mounting.



TW series

Worm gear units for arduous applications with 10" to 28" centre distances. Power capacities up to 1,361kW.



DCB-GS Coupling

High torque, intrinsically fail safe, rubber in compression coupling ideally suited for both engine and electric motor driven critical applications such as pumping sets, generator sets and compressor sets for torques up to 846 kNm.



PM series

The PM Series are available in three variants, Helical/worm, Helical/Bevel/Helical and Single reduction worm.

Available in 6 sizes with ratios up to 333/1
Direct mounting of IEC and Nema motors.



HC series

The HC range of Helical and Bevel/Helical units, Mounting options include foot, hollow shaft and speed reducer types

Available in 14 sizes with power capacities up to 11,000kW



Hydrastart

Fluid soft start couplings available in many sizes and types up to 700kW (950HP) capacity.



Carter gear

Hydrostatic variable speed drive units up to 37kW.

- Proven reliability in hazardous environments
- Electronic pneumatic and manual controls allowing design flexibility
- 27:1 stepless speed range with high speed holding accuracies
- Accurate speed holding



RB Coupling

Intrinsically fail safe, maintenance free, rubber in compression coupling which is ideally suited for safety critical applications such as fire pumps, generator sets and compressor sets for torques up to 41 kNm.



Gearflex

Single and double arrangement, standard and heavy duty series types up to 60,000kW (80,000HP) capacity.



Sprag Clutches

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.

Drill string compensating chain

Chain No.	Pitch
BL1266-DS	1.500
BL1466-DS	1.750
BL1688-DS	2.000

Drill String Compensating Chain is specifically designed for use in systems adjusting for vertical heave motion of the drilling vessel.

