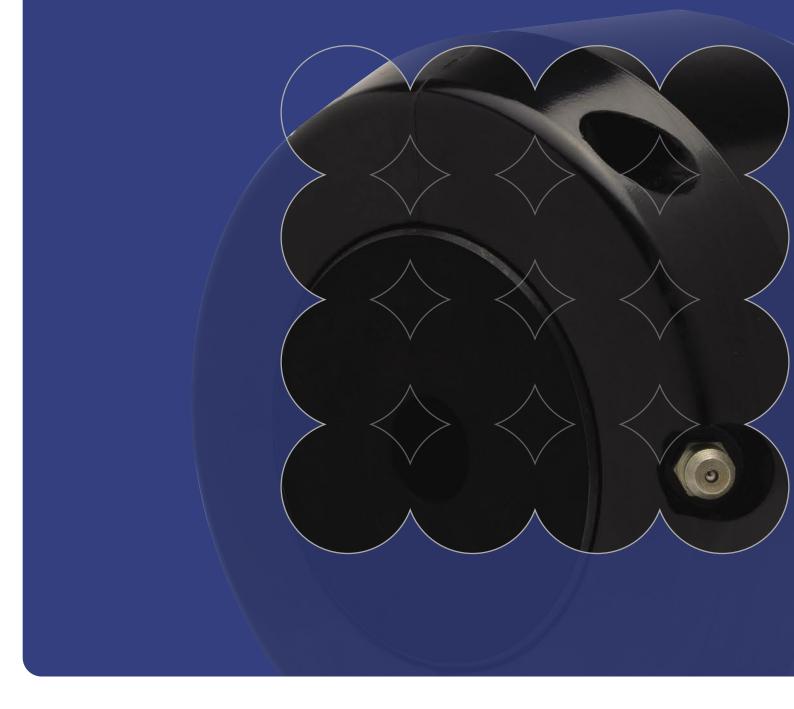
Chainflex Couplings

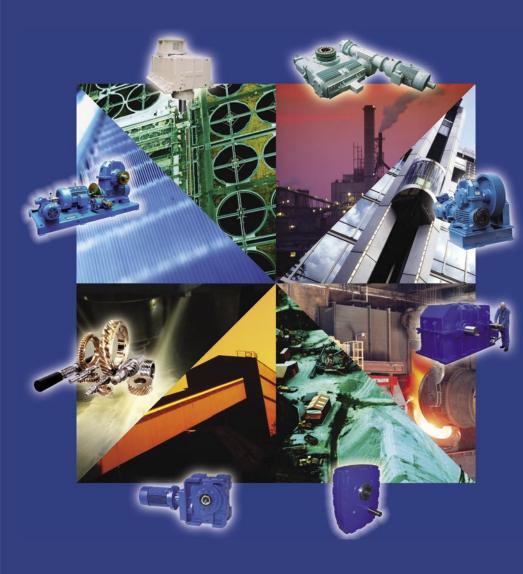




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Strength through Service Renold Gears has been manufacturing high quality, high specification gear units for over 100 years and has always been at the leading edge of gear technology with innovative products and power transmission solutions.



Interchangeability

Many of the products from Renold Gears are dimensionally interchangeable with other manufacturers gear units, allowing a trouble free replacement of gearboxes, in most cases upgrading the capacity through state of the art technology and materials.

Custom Made

Renold Gears is unique in it's ability to offer custom made products designed to meet customers exacting requirements without compromise on availability and cost. From complete package solutions to individual precision replacement gears, all can be tailor made to meet specific applicational requirements.

Available

The most popular ranges of gearboxes are available from local distribution stock, backed up by extensive stocks from our manufacturing plant in the UK.



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The **RENOLD** Collection

A Starte	
	33 kW
Max power / 100 rpm (kW)	00 111
Max power / 100 rpm (kW) Max weight	63 kg
Max weight	63 kg
Max weight Max shaft size	63 kg 115 mm















The **RENOLD** Collection





Max power / 100 rpm (kW)	1,640 kW
Max power / 100 rpm (kW) Max weight	1,640 kW 443 kg
Max weight	443 kg
Max weight Max shaft size	443 kg 260 mm

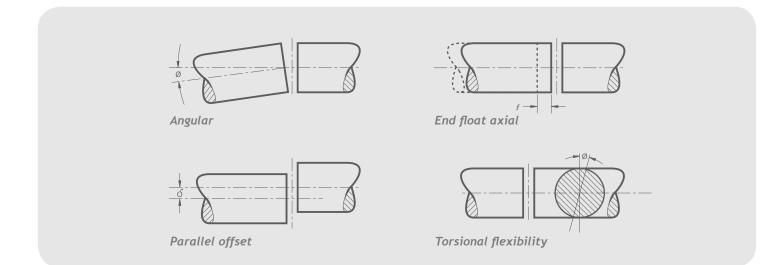








Coupling Selection Guide



Flexible Couplings should be used to accommodate any combination of misalignment conditions described below.

At installation all couplings should be aligned as near to perfect as possible.

1. Angular

Angular misalignment is present when the shaft axes are inclined one to the other. Its magnitude can be measured at the coupling faces.

2. Parallel Offset

Parallel misalignment is present when the axes of the driving and driven shafts are parallel but laterally displaced.

3. End float (axial)

End float is the ability to accommodate a relative axial displacement of the connected shafts; achieved by sliding members or flexing of resilient components.

4. Torsional flexibility

Torsional flexibility is a design feature necessary to permit shock and impulsive loadings to be suitably dampened. It is achieved by the provision of a flexible medium such as rubber, springs, etc., between the two halves of the coupling.

Selection

In order to select the correct type and size of coupling, the following basic information should be known:

Power to be transmitted

- (a) Normal.
- (b) Maximum.
- (c) Whether continuous or intermittent.

Characteristics of the drive

- (a) Type of prime mover and associated equipment.
- (b) Degree of impulsiveness of driven load.

Speed in revolutions per minute

(a) At which normal power is transmitted.(b) At which maximum power is transmitted.(c) Maximum speed.

Dimensions of shafts to be connected

- (a) Actual diameter.
- (b) Length of shaft extension.
- (c) Full keyway particulars.

Selection

When the input drive is not steady (i.e. not from an electric motor), and/or the driven load is impulsive, the actual power is multiplied by a Service Factor from the Table 2 (page 13).

Selection Procedure

1. Nominal power in kW to be transmitted = K.

2. Select appropriate load classification from Table 1, denoted as either S, $\ensuremath{\mathsf{M}}$ or H.

3. From Table 2, establish Service Factor(s) to be applied, taking into account hours of operation/day and prime mover = fD.

4. From Table 3 select factor for the required frequency of starts/hr = fS.

- 5. Selection Power Ks = K x fD x fS
- 6. Equivalent power at 100 RPM = Ks x 100

RPM

7. Check that coupling selected will accept the required shaft diameters. Should shaft diameter exceed maximum permissible, then re-select using next larger size of coupling.

Load Classification by Application

Page **05**

able 1		Dry dock cranes	(0)	Planer feed chains	M	Presses	
lgitators		Main hoist	(2)	Planer floor chains	м	Pulp machine reel	
Pure liquids	ç	Auxiliary hoist	(2)	Planer tilting hoist	Μ	Stock chest	
	S	Boom, luffing	(2)	Re-saw merry-go-round conveyor	Μ	Suction roll	
iquids and solids	M	Rotating, swing or slew	(3)	Roll cases	Н	Washers and thickeners	
iquids - variable density	M	Tracking, drive wheels	(4)	Slab conveyor	Н	Winders	
llowers		Elevators		Small waste conveyor-belt	S	Printing presses	
entrifugal	S	Bucket - uniform load	S	Small waste conveyor-chain	Μ	Pullers	
obe	Μ	Bucket - heavy load	M	Sorting table	Μ		
ane	S		S	Tipple hoist conveyor	M	Barge haul	
rewing and distilling	-	Bucket - continuous	S	Tipple hoist drive	M	Pumps	
	ç	Centrifugal discharge			M	Centrifugal	
ottling machinery	S	Escalators	S	Transfer conveyors		Proportioning	
rew kettles - continuous duty	S	Freight	Μ	Transfer rolls	M	Reciprocating	
ookers - continuous duty	S	Gravity discharge	S	Tray drive	Μ	single acting: 3 or more cylinders	
ash tubs - continuous duty	S	Man lifts	*	Trimmer feed	Μ	double acting: 2 or more cylinders	
cale hopper - frequent starts	м	Passenger	*	Waste conveyor	м	single acting: 1 or 2 cylinders	
an filling machines	S	Extruders (plastic)		Machine tools			
ane knives (1)	M	Film	S	Bending roll	Μ	double acting: single cylinder	
~ / /			S	Punch press - gear driven	H	Rotary - gear type	
ar dumpers	Н	Sheet		Notching press - belt drive	*	Rotary - lobe, vane	
ar pullers	Μ	Coating	S		Н	Rubber and plastics industries	
larifiers	S	Rods	S	Plate planners		Crackers (1)	
		Tubing	S	Tapping machine	Н	Laboratory equipment	
lassifiers	М	Blow moulders	Μ	Other machine tools		Mixed mills (1)	
lay working machinery		Pre-plasticiers	Μ	Main drives	Μ	Refiners (1)	
rick press	Н	Fans		Auxiliary drives	S	Rubber calenders (1)	
riquette machine	Н	Centrifugal	S	Metal mills			
lay working machinery	M	Cooling towers	J	Drawn bench carriage and		Rubber mill, 2 on line (1)	
ug mill	M		*	main drive	м	Rubber mill, 3 on line (1)	
-	m	Induced draft	*	Pinch, dryer and scrubber	147	Sheeter (1)	
ompressors	6	Forced draft			*	Tyre building machines	
entrifugal	S	Induced draft	м	rolls, reversing		Tyre and tube press openers	
obe	м	Large, mine etc.	Μ	Slitters	Μ	Tubers and strainers (1)	
eciprocating - multi-cylinder	м	Large, industrial	Μ	Table conveyors nonreversing		Warming mills (1)	
eciprocating - single cylinder	Н	Light, small diameter	S	group drives	Μ	Sand muller	Ē
onveyors - uniformly loaded or f	ed	Feeders		Individual drives	Н		
pron	S	Apron	м	Reversing	*	Screens	
	S	Belt	M	Wire drawing and flattening machine	Μ	Air washing	
ssembly				Wire winding machine	Μ	Rotary, stone or gravel	
elt	S	Disc	S	-		Travelling water intake	
ucket	S	Reciprocating	Н	Mills, rotary type		Sewage disposal equipment	
hain	S	Screw	M	Ball (1)	M	Bar screens	-
light	S	Food industry		Cement kilns (1)	Μ	Chemical feeders	
ven	S	Beef slicer	Μ	Dryers and coolers (1)	Μ		
crew	S	Cereal cooker	S	Kilns other than cement	Μ	Collectors	
onveyors - heavy duty		Dough mixer	Ň	Pebble (1)	Μ	Dewatering screws	
ot uniformly fed		Meat grinder	M	Rod, plain & wedge bar (1)	Μ	Scum breakers	
-	м	0		Tumbling barrels	Н	Slow or rapid mixers	
pron		Generators - not welding	S	Mixers		Thickeners	
ssembly	м	Hammer mills	Н			Vacuum filters	
elt	м	Hoists		Concrete mixers continuous	M	Slab pushers	
ucket	м		U	Concrete mixers intermittent	Μ		_
hain	Μ	Heavy duty	H	Constant density	S	Steering gear	ſ
ight	Μ	Medium duty	M	Variable density	Μ	Stokers	
ive roll	*	Skip hoist	Μ	Oil industry		Sugar industry	f
ven	м	Laundry		Chillers	М	Cane knives (1)	1
eciprocating	H	Washers - reversing	Μ	Oil well pumping	*		
	M	Tumblers	M	Paraffin filter press		Crushers (1)	
crew paker		Line shafts			M	Mills (1)	
naker	H			Rotary kilns	м	Textile industry	Ĺ
rane Drives - not dry dock		Driving processing equipment	M	Paper mills		Batchers	1
ain hoists	S	Light	S	Agitators (mixers)	Μ	Calenders	
ridge travel	*	Other line shafts	S	Barker - auxiliaries hydraulic	Μ	Cards	
rolley travel	*	Lumber industry		Barker - mechanical	Н	Dry cans	
rushers		Barkers, hydraulic, mechanical	Μ	Barking drum	Н	Dryers	
re	Н	Burner conveyor	M	Beater and pulper	M	Dyeing machinery	
		Chain saw and drag saw	H	Bleacher	S	Looms	
cone	н	Chain transfer	Н	Calenders			
ıgar (1)	Μ	Craneway transfer	Н		M	Mangles	
redges				Calenders - super	Н	Nappers	
able reels	Μ	De-barking drum	H	Converting machine except		Pads	
onveyors	M	Edger feed	M	cutters, platers	Μ	Range drives	
utter head drives	H	Gang feed	Μ	Conveyors	S	Slashers	
g drives		Green chain	Μ	Couch	Μ	Soapers	
	н	Live rolls	Н	Cutters, platers	Н	Spinners	
anoeuvring winches	M	Log deck	H	Cylinders	M	Tenter frames	
umps	м	Log haul - incline	Н				
creen drive	Н			Dryers Fall startshere	M	Washers	
a alcara	Μ	Log haul - well type Log turning device	H	Fell stretcher	M	Winders	
tackers			н	Foll whippor	н	Windloss.	
tility winches	М	Main log conveyor	Н	Fell whipper Jordans	M	Windlass	_

Key

S = Steady

- Μ = Medium Impulsive
- Н = Highly Impulsive
- * = Refer to Renold
- (1) = Select on 24 hours per day service factor only.

(2) = Use service factor of 1.00 for any duration of service.

- (3) = Use service factor of 1.25 for any duration of service.
- (4) = Use service factor of 1.50 for any duration of service.

Note

Machinery characteristics and service factors listed in this catalogue are a guide only. Some applications (e.g. constant power) may require special considerations. Please consult Renold.

Service Factors and Selection

Table 2 Service Factor (fD)

Prime mover	Driven machinery characteristics							
(Drive input)	Duration service hours/day	Steady load	Medium impulsive	Highly impulsive				
Electric, air & hydraulic Motors or steam turbine (Steady input)	Intermittent - 3hrs/day max 3 - 10 over 10	0.90 1.00 1.25	1.00 1.25 1.50	1.50 1.75 2.00				
Multi-cylinder I.C. engine (Medium impulsive input)	Intermittent - 3hrs/day max 3 - 10 over 10	1.00 1.25 1.50	1.25 1.50 1.75	1.75 2.00 2.25				
Single-cylinder I.C. engine (Highly impulsive input)	Intermittent - 3hrs/day max 3 - 10 over 10	1.25 1.50 1.75	1.50 1.75 2.00	2.00 2.25 2.50				

Table 3 Factor for Starts/Hour(fs)

No of starts per hour	0-1	1-30	30-60	60-
Factor	1,0	1,2	1,3	1,5

Example of Selection

Coupling is required to transmit 7.5kW at 1440 RPM to connect an electric motor to a gear box driving a chain conveyor running for 18 hours/day and starting 15 times/hour. Shaft diameters /55mm respectively.

K = 7.5kW

From Table 1 Load Classification = M (medium impulsive)

From Table 2 Service Factor fp = 1.5

From Table 3 fs = 1.2

Therefore selection kW is:-

 $Ks = K \times f_D \times fS$

= 7.5 x 1.5 x 1.2

= 13.5 kW

Equivalent power at 100 RPM =

RPM 13.5 x 100

=

```
1440
```

= 0.9375kW @ 100RPM

Ks x 100

From page 17 selection is RSC110 (644911) (maximum bore 55 mm).



It is the responsibility of the system designer to ensure that the application of the coupling does not endanger the other constituent components in the system. Service factors given are an initial selection guide.

Key Stress

1. Permissible key stress = 70N/mm²

2. Nominal torque TKM = K x 9550 / RPM Nm

- 3. Force at key F = TKM /r
- 4. Shaft Rad r. metres
- 5. Key area A = J x HUB length mm (Obtain from relevant catalogue page).
- 6. Key stress fk = F/A N/mm²
- 7. If resultant stress is less than 70 N/mm² key stress is acceptable.
 If resultant fk is greater than 70, consider either two keyways or extending hub length.
- 8. Example:

 $T_{KM} = 7.5 \times 9550/1440 = 49.7Nm$ r = 55/2 = 27.5mm ÷ 1000 = 0.0275m F = 49.7/0.0275 = 1741N A = 16 x 45 = 720mm² fk = 1741/720 = 8/480/n2m²

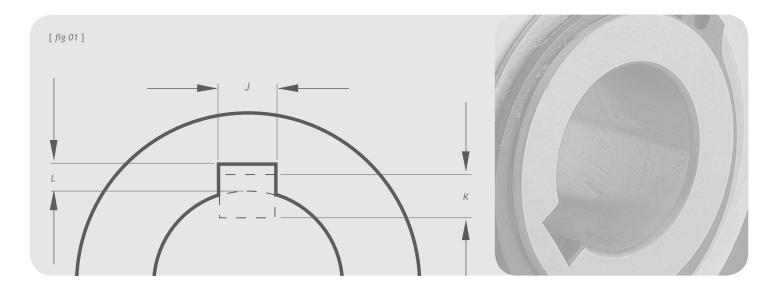
Selection is therefore good.

For operation above 80% of the declared maximum coupling speed it is recommended that the coupling is dynamically balanced.



Rotating equipment must be provided with a suitable guard before operating or injury may result.

Key and Keyway Dimensions



Metric (mm)

Keyways comply with BS4235: Part 1: 1972

Sha	ıft dia.	Key & keyway				
Over	Incl.	J	K	L		
6	8	2	2	1.0		
8	10	3	3	1.4		
10	12	4	4	1.8		
12	17	5	5	2.3		
17	22	6	6	2.8		
22	30	8	7	3.3		
30	38	10	8	3.3		
38	44	12	8	3.3		
44	50	14	9	3.8		
50	58	16	10	4.3		
58	65	18	11	4.4		
65	75	20	12	4.9		
75	85	22	14	5.4		
85	95	25	14	5.4		
95	110	28	16	6.4		
110	130	32	18	7.4		
130	150	36	20	8.4		
150	170	40	22	9.4		
170	200	45	25	10.4		
200	230	50	28	11.4		

Imperial (inches)

Keyways comply with BS46: Part 1: 1958

Sha	aft dia.		у	
Over	Incl.	J	K	L
0.25	0.05	0.125	0.125	0.060
0.50	0.75	0.187	0.187	0.088
0.75	1.00	0.250	0.250	0.115
1.00	1.25	0.312	0.250	0.112
1.25	1.50	0.375	0.250	0.108
1.50	1.75	0.437	0.312	0.135
1.75	2.00	0.500	0.312	0.131
2.00	2.50	0.625	0.437	0.185
2.50	3.00	0.750	0.500	0.209
3.00	3.50	0.875	0.625	0.264
3.50	4.00	1.000	0.750	0.318
4.00	5.00	1.250	0.875	0.366
5.00	6.00	1.500	1.000	0.412

Keyway dimensions [fig 01] Parallel keyways are supplied unless customer states otherwise.

Chainflex



An all metal flexible yet torsionally stiff coupling, suitable for use in arduous working conditions.

Coupling capacity

- Maximum power @ 100RPM: 90kW
- Maximum torque: 8595Nm

Features and benefits

- Torsionally stiff for use as a positive drive connection.
- Easy installation for ease of maintenance
- Misalignment capabilities allowing flexibility in installation.
- Hardened teeth giving long life with high torque capacity.
- All metal coupling for use in hostile environments.
- Taper bush bores available for ease of maintenance.

- Easy removal of chain for high speed disconnection of driven and driving machines.
- Precison moulded plastic cover with seals for lubrication retention and dust protection.

Standard range comprises

- Shaft to Shaft
- Taper Bush or Parallel Bored

Applications

- Fans
- Feeders
- Kiln Dryers
- Line Shafts
- Pump Drives

Construction details

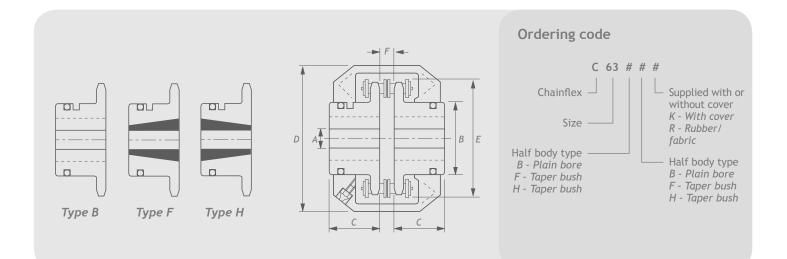
- Hardened Steel Sprockets
- Renold Duplex Chain
- Moulded Cover

General misalignments

Angular

• Max 1°

Chainflex



Coupling	Power/	Torque	Speed	Тур	e B	Ţ	ype F &	Н			Dimer	nsions			Parallel	End
size	100rpm	nominal	max	Во	re	Bush	Во	re	В	C	D	E	F	Mass	Offset Max	float
with cover	kW	Nm	rpm	Max	Min	size	Max	Min	mm	mm	mm	mm	mm	kg	mm	mm
C28BB K	0.55	52.5	3500	25	12	N/A	-	-	42	21	72	62	3	0.5	0.25	0.7
C33BB K	1	95.5	3000	30	12	N/A	-	-	50	25	83	74	5.1	1.0	0.25	1.0
C43 # # K	2.25	215	2250	40	14	TB1008	25*	9	59	32	108	99	6.9	2.1	0.25	1.3
C63 # # K	7.5	716	1500	60	19	TB1615	42	14	91	51	159	148	8.9	7.1	0.30	2.0
C81 # # K	17.5	1671	1200	80	24	TB2525	60	19	117	63	206	197	16.2	16	0.38	2.5
C101BB K	33.5	3200	960	100	32	N/A	-	-	144	76	258	245	18.8	30	0.38	3.3
C122BB K	60	5730	750	130	50	N/A	-	-	182	101	311	295	25.1	61	0.50	3.8
C140BB K	90	8595	700	140	55	N/A	-	-	195	114	357	343	31.2	85	0.50	4.6

*with shallow key

Component Spares

With	cover	Withou	t cover		Half body	Half body	Half body	Chain
Coupling number	Product number	Coupling number	Product number	Cover	pilot bored	taper bored F type	taper bored H type	with connectors
C28BBK	642602	C28BB	642802	616602	642080	-	-	114500/96620
C33BBK	642603	C33BB	642803	616603	642081	-	-	114038/96620
C43BBK	642604	C43BB	642804	616604	642082	-	-	114046/96620
C43FFK	642604/77	C43FF	642804/77	616604	-	642082/77	642082/88	114046/96620
C63BBK	642606	C63BB	642806	616606	642084	-	-	114066/96620
C63FFK	642606/77	C63FF	642806/77	616606	-	642084/77	642084/88	114066/96620
C81BBK	642608	C81BB	642808	616608	642086	-	-	114088/96620
C81FFK	642608/77	C81FF	642808/77	616608	-	642086/77	642086/88	114088/96620
C101BBK	642610	C101BB	642810	616610	642088	-	-	114106/96620
C122BBK	642612	C122BB	642812	616612	642090	-	-	114127/96620
C140BBK	642614	C140BB	642814	616614	642092	-	-	114147/96620

Notes

The best range of solution chain products available anywhere



Synergy

- High performance
- Superior wear life
- Outstanding fatigue resistance





- Maintenance free
- Self-lubricating chain
- Food industry-approved lubricant



RENOLD

- Best premium chain
- Leading performance
- Solid bush / solid roller / end softened pin



Hydro-Service[™]

- Superior corrosion resistant coating
- Alternative choice to stainless steel chain
- Will not chip or peel
- Hexavalent chrome-free



Steel Pin Bush Roller Chain

- Manufactured to international stds
- Full range of pitch alternatives
- Breaking loads 13 to 900 kN as std
- Attachments to suit varied applications



Leaf Chain

- Comprehensive ranges used worldwide for safety critical lifting applications
- 100 years experience in developing and maintaining lifting chain



Steel Knuckle Chain

- Heavy duty, detachable elevator chains
- Integral K type attachments
- Breaking loads from 642kN
 to 1724kN
- Sealed joint to extend chain life



Roll-Ring[™]

- Revolutionary chain tensioner
- Installed in seconds and self adjusting
- Maintenance free
- Also acts as noise damper



Customised Engineering Chain

- Wide range to suit specialised applications using high specification materials and treatment processes
- Designed in close collaboration with customer



Smartlink[™]

- Load monitoring technology
- Technical reports & data logging



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