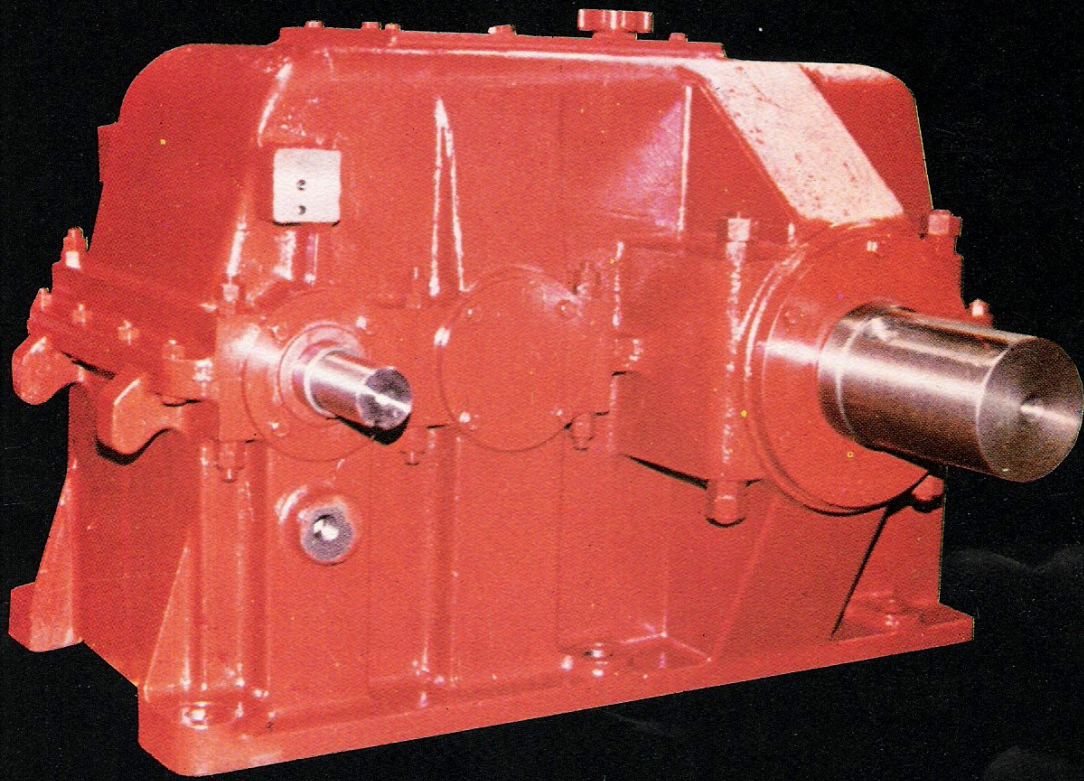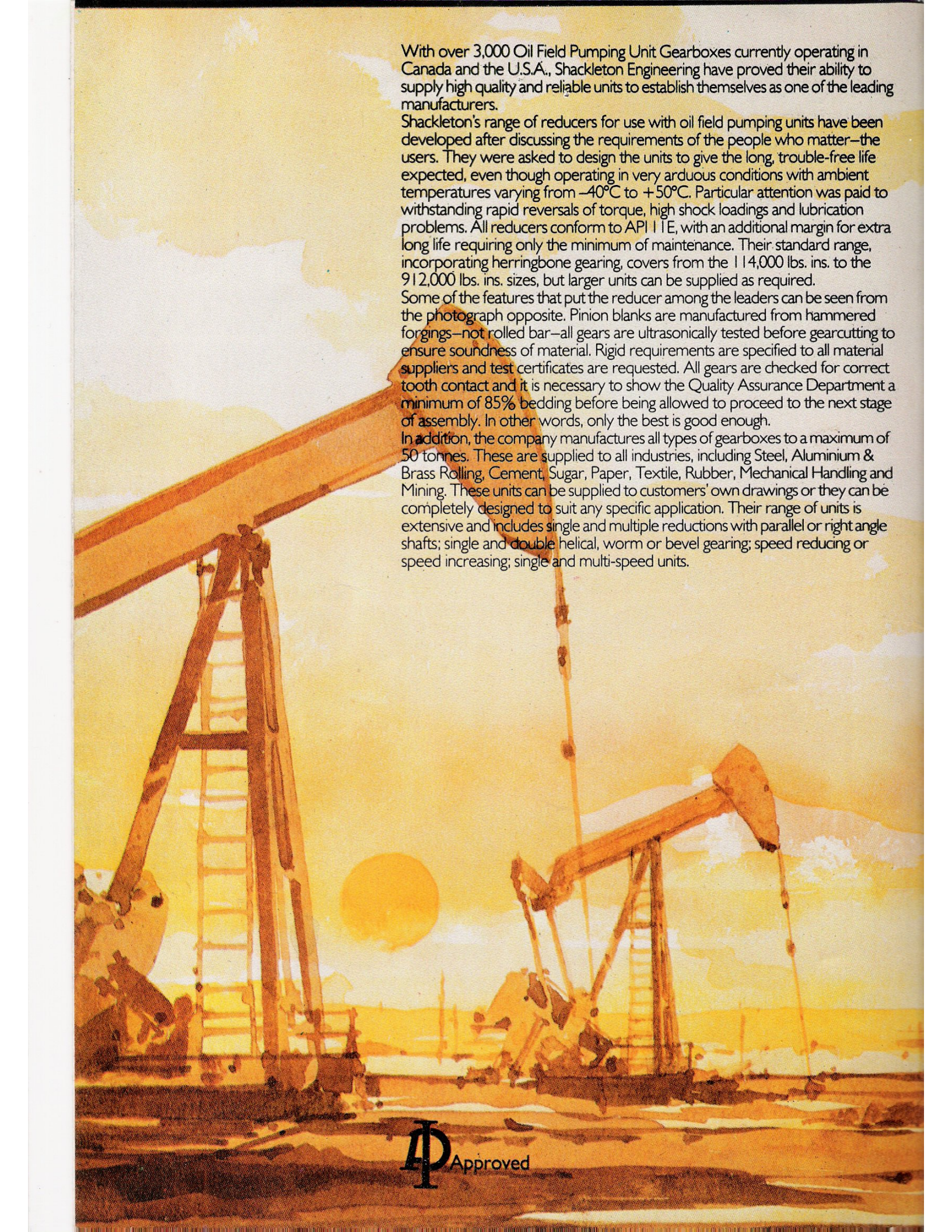# OIL FIELD PUMPING UNIT SPEED REDUCERS

Shackleton

With over 3,000 Oil Field Pumping Unit Gearboxes currently operating in Canada and the U.S.A., Shackleton Engineering have proved their ability to supply high quality and reliable units to establish themselves as one of the leading manufacturers.

Shackleton's range of reducers for use with oil field pumping units have been developed after discussing the requirements of the people who matter—the users. They were asked to design the units to give the long, trouble-free life expected, even though operating in very arduous conditions with ambient temperatures varying from –40°C to +50°C. Particular attention was paid to withstanding rapid reversals of torque, high shock loadings and lubrication problems. All reducers conform to API 11E, with an additional margin for extra long life requiring only the minimum of maintenance. Their standard range, incorporating herringbone gearing, covers from the 114,000 lbs. ins. to the 912,000 lbs. ins. sizes, but larger units can be supplied as required.

Some of the features that put the reducer among the leaders can be seen from the photograph opposite. Pinion blanks are manufactured from hammered forgings—not rolled bar—all gears are ultrasonically tested before gearcutting to ensure soundness of material. Rigid requirements are specified to all material suppliers and test certificates are requested. All gears are checked for correct tooth contact and it is necessary to show the Quality Assurance Department a minimum of 85% bedding before being allowed to proceed to the next stage of assembly. In other words, only the best is good enough.

In addition, the company manufactures all types of gearboxes to a maximum of 50 tonnes. These are supplied to all industries, including Steel, Aluminium & Brass Rolling, Cement, Sugar, Paper, Textile, Rubber, Mechanical Handling and Mining. These units can be supplied to customers' own drawings or they can be completely designed to suit any specific application. Their range of units is extensive and includes single and multiple reductions with parallel or right angle shafts; single and double helical, worm or bevel gearing; speed reducing or speed increasing; single and multi-speed units.

Approved

Large margin on gear size over API 11E recommendations for long life.

Herringbone gears with minimum backlash. All gearing ultrasonically tested before manufacture.

Heavy duty double row, self-aligning spherical roller bearings throughout 100,000 hours life.

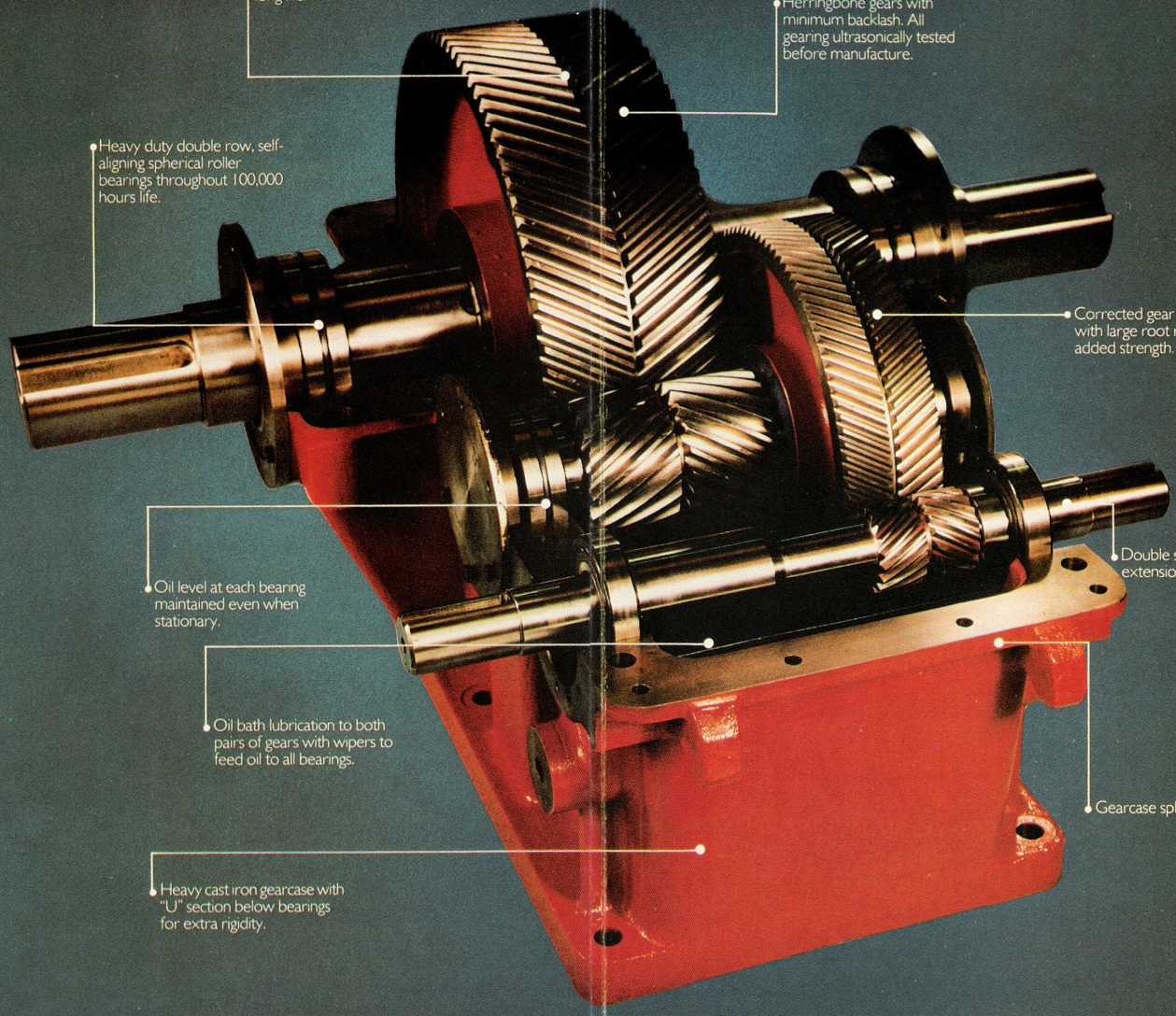Corrected gear tooth design with large root radius for added strength.

Oil level at each bearing maintained even when stationary.
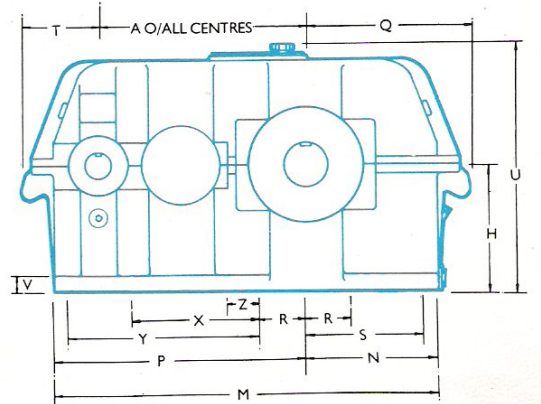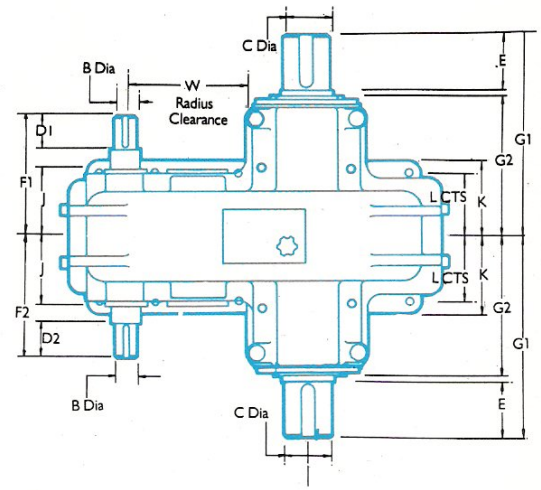
Double seals at each shaft extension.

Oil bath lubrication to both pairs of gears with wipers to feed oil to all bearings.

Gearcase split at centre line.

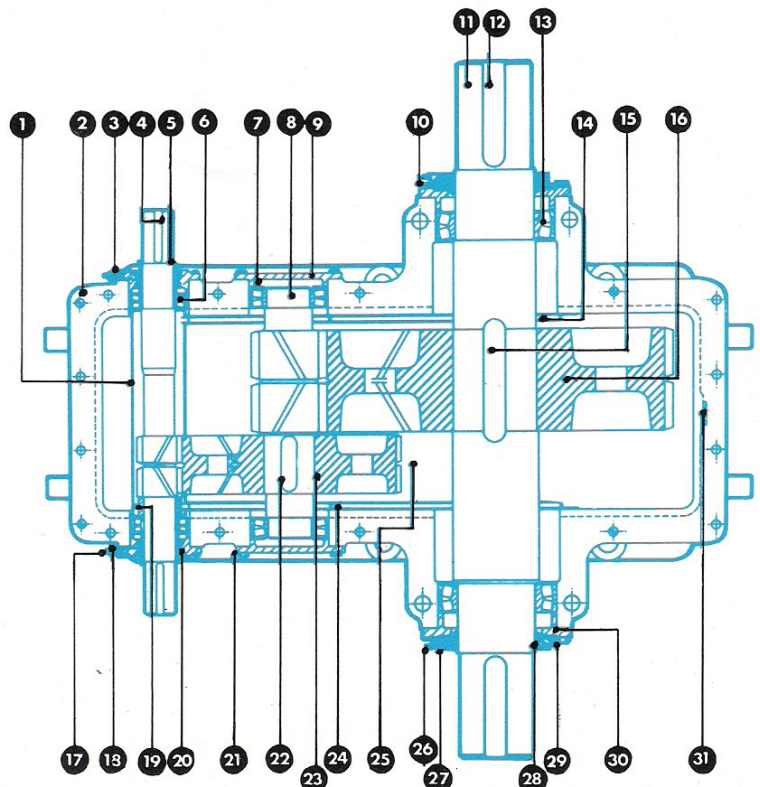Heavy cast iron gearcase with "U" section below bearings for extra rigidity.

SIZE	114,000	160,000	228,000	320,000	456,000	640,000	912,000
RATIO	30:1.NOM	30:1.NOM	30:1.NOM	30:1.NOM	30:1.NOM	30:1.NOM	30:1.NOM
A	24·56″	27·25″	30·50″	35·00″	39·75″	44·75″	51·75″
B	2·50″	2·50″	2·75″	2·75″	4·25″	4·25″	5·00″
B-K/WAY	$\frac{5}{8}$″ W × $\frac{5}{16}$″ DP	$\frac{5}{8}$″ W × $\frac{5}{16}$″ DP	$\frac{5}{8}$″ W × $\frac{5}{16}$″ DP	$\frac{5}{8}$″ W × $\frac{5}{16}$″ DP	1″ W × $\frac{1}{2}$″ DP	1″ W × $\frac{1}{2}$″ DP	1$\frac{1}{4}$″ W × $\frac{5}{8}$″ DP
C	5·00″	6·00″	6·00″	7·00″	7·50″	7·50″	7·50″
C-K/WAY	1$\frac{1}{4}$″ W × $\frac{5}{8}$″ DP	1$\frac{1}{2}$″ W × $\frac{3}{4}$″ DP	1$\frac{1}{2}$″ W × $\frac{3}{4}$″ DP	1$\frac{3}{4}$″ W × $\frac{7}{8}$″ DP	1$\frac{3}{4}$″ W × $\frac{7}{8}$″ DP	1$\frac{3}{4}$″ W × $\frac{7}{8}$″ DP	1$\frac{3}{4}$″ W × $\frac{7}{8}$″ DP
D1	4·25″	4·25″	4·88″	6·00″	10·00″	7·75″	9·50″
D2	4·25″	4·25″	4·25″	4·25″	6·50″	6·50″	7·50″
E	8·00″	8·00″	9·00″	10·00″	10·00″	10·00″	10·00″
F1	16·50″	16·50″	20·00″	22·25″	28·00″	28·00″	31·75″
F2	16·50″	16·50″	17·75″	19·00″	24·50″	26·75″	29·75″
G1	28·00″	28·00″	31·50″	33·50″	40·50″	43·00″	47·50″
G2	18·75″	18·88″	20·63″	20·63″	25·25″	29·25″	32·50″
H	16·00″	16·00″	19·00″	22·00″	26·00″	28·00″	32·00″
J	11·00″	11·37″	12·75″	14·00″	16·75″	18·75″	20·50″
K	12·00″	12·00″	13·00″	15·00″	17·00″	19·25″	23·00″
L	10·50″	10·50″	11·00″	13·00″	15·125″	17·00″	20·00″
M	44·50″	46·25″	51·75″	60·50″	70·50″	81·00″	93·00″
N	14·25″	16·00″	17·00″	20·00″	23·75″	26·50″	33·00″
P	30·25″	30·25″	34·75″	40·50″	46·75″	54·50″	60·00″
Q	18·25″	20·00″	21·00″	24·00″	28·75″	31·50″	41·00″
R	9·00″	9·00″	7·00″	7·50″	8·50″	10·50″	12·00″
S	— · —	— · —	15·00″	18·00″	21·25″	23·50″	29·00″
T	9·70″	9·70″	10·00″	9·50″	12·00″	14·75″	16·25″
U	31·50″	33·63″	37·88″	43·88″	51·63″	56·00″	64·50″
V	2·00″	2·00″	2·50″	2·50″	3·00″	3·00″	4·00″
W	17·18″	19·87″	20·63″	25·63″	29·00″	31·75″	37·00″
X	— · —	— · —	4·75″	8·13″	9·75″	26·75″	31·00″
Y	19·75″	19·75″	25·75″	31·00″	35·75″	41·25″	45·50″
Z	— · —	— · —	— · —	— · —	— · —	— · —	8·50″
BOLT DIA	1·38″	1·38″	1·38″	1·38″	1·875″	1·875″	1·875″
HOLES No.	6	6	10	10	10	10	12
WEIGHT	3,087 lbs.	3,248 lbs	4,592 lbs	6,273 lbs	10,528 lbs	13,440 lbs	18,480 lbs
OIL QTY U.S. GALLS	20·00	20·00	30·00	48·00	65·00	85·00	110·00

1. OIL CATCHMENT.
2. GEARCASE. INSPECTION COVER. END COVER SETSCREWS.
3. INPUT SHAFT END COVER.
4. INPUT SHAFT.
5. OUTER SLEEVE. ❉
6. INPUT SHAFT BEARING.
7. INTERMEDIATE SHAFT BEARING.
8. INTERMEDIATE SHAFT.
9. INTERMEDIATE SHAFT END COVER.
10. OUTPUT SHAFT END COVER.
11. OUTPUT SHAFT.
12. OUTPUT SHAFT KEY.
13. OUTPUT SHAFT BEARING.
14. OIL CASCADE R.H.
15. OUTPUT WHEEL KEY.
16. OUTPUT WHEEL.
17. GREASE NIPPLE.
18. END COVER SETSCREWS.
19. INNER SLEEVE. ❉
20. INPUT SHAFT OIL SEAL.
21. END COVER SETSCREWS.
22. INPUT WHEEL KEY.
23. INPUT WHEEL.
24. OIL CASCADE L.H.
25. DIP STICK. OIL FILLER PLUG.
26. GREASE NIPPLE.
27. RETAINING COVER SETSCREWS. OIL SEAL RETAINING COVER.
28. OUTPUT SHAFT OIL SEAL.
29. END COVER SETSCREWS.
30. END COVER SHIMS.
31. MAGNETIC DRAIN PLUG. DRAIN PLUG WASHER.

Items marked ❉ may or may not be used depending on size of gear unit.

When ordering parts, please advise size and serial number of reducer, along with the item number and name of part required.

American Petroleum Institute

Certificate of Authority To Use Official Monogram

THE AMERICAN PETROLEUM INSTITUTE hereby grants to
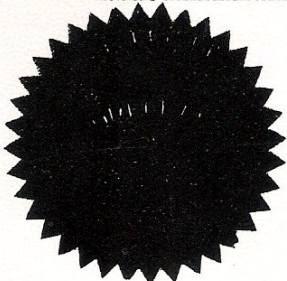
SHACKLETON ENGINEERING LIMITED

Cheshire, England

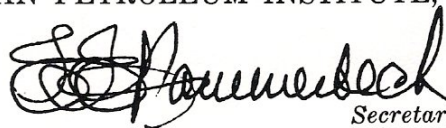the right to use the official monogram **AP** on gear boxes

under the conditions specified in the official publication of the American Petroleum Institute

entitled Std 11E -- Specification for Pumping Units

and in accordance with the provisions of the agreement set forth in the application.

The American Petroleum Institute reserves the right to revoke this authorization to use the official monogram, for any reason satisfactory to the Board of Directors of the American Petroleum Institute.

Issued   March 11, 19 82.

AMERICAN PETROLEUM INSTITUTE,

[signature]
Secretary.

SHACKLETON ENGINEERING (U.K.) LTD.

DESIGNERS & MANUFACTURERS OF INDUSTRIAL GEARBOXES

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Telephone: 061-442 8533 Telex 669 169

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Telephone : 713 946 5233/5237
Telex : 255 910 8804014.

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for Export 1981

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