

Rod/Piston seals

TECHNICAL DETAILS

METRIC

INCH



OPERATING CONDITIONS

MAXIMUM SPEED
TEMPERATURE RANGE
MAXIMUM PRESSURE

0.5 m/sec
-40°C + 110°C
350 bar

1.5 ft/sec
-40°F + 230°F
5000 p.s.i.

MAXIMUM EXTRUSION GAP

(1/4" section and above)

PRESSURE bar
PRESSURE p.s.i.
MAXIMUM GAP in

Figures show the maximum permissible gap all on one side, for rod seals using minimum rod \varnothing and maximum clearance \varnothing and for piston seals using the minimum clearance \varnothing and maximum bore \varnothing

| | | |
|--------------|--------------|--------------|
| 160 | 250 | 350 |
| 2400 | 3750 | 5000 |
| 0.024 | 0.020 | 0.016 |

SURFACE ROUGHNESS

DYNAMIC SEALING FACE $\varnothing d_1$
STATIC SEALING FACE $\varnothing D_1$
STATIC HOUSING FACES L_1

| μmRa | μmRt | μinCLA | μinRMS |
|------------------|-----------------|-------------------|-------------------|
| 0.1 ↔ 0.4 | 4 max | 4 ↔ 16 | 5 ↔ 18 |
| 1.6 max | 10 max | 63 max | 70 max |
| 3.2 max | 16 max | 125 max | 140 max |

CHAMFERS & RADII

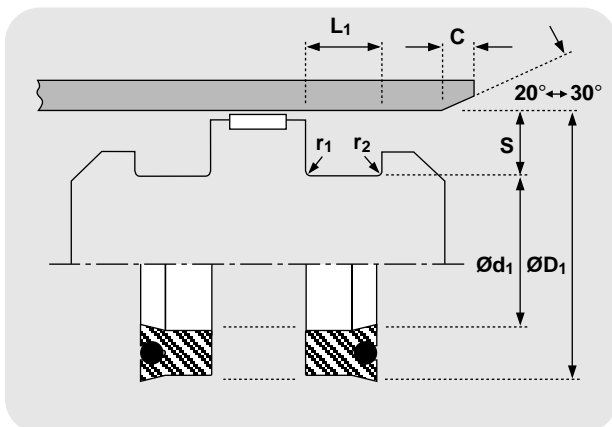
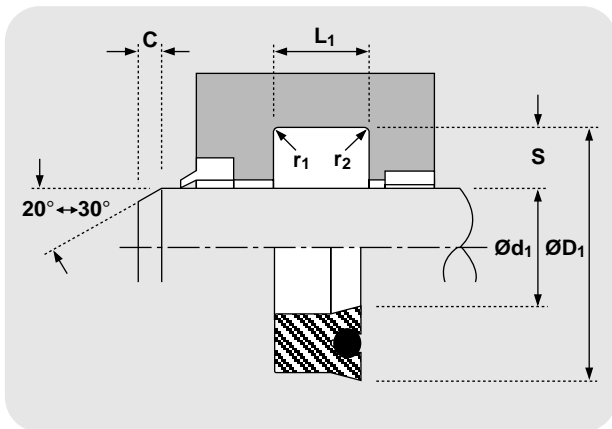
GROOVE SECTION $\leq S$ in
MIN CHAMFER C in
MAX FILLET RAD r_1 in
MAX FILLET RAD r_2 in

| | | | | | |
|--------------|--------------|--------------|--------------|--------------|--------------|
| 0.125 | 0.187 | 0.250 | 0.312 | 0.375 | 0.500 |
| 0.093 | 0.093 | 0.125 | 0.156 | 0.187 | 0.187 |
| 0.008 | 0.008 | 0.016 | 0.032 | 0.032 | 0.032 |
| 0.016 | 0.016 | 0.032 | 0.047 | 0.047 | 0.047 |

TOLERANCES

Please refer to specified tolerances in the introduction
- Housing & installation data - Hallite 500 Series

512



DESIGN

The Hallite 512 is a standard profile loaded U cup utilising a polyurethane or polyester shell energised by a high specification O ring.

At zero or low pressure, the O ring helps to increase the sealing force, preventing any by-pass. As pressure rises, so the sealing force increases, with the O ring ensuring complete lip actuation under most conditions.

The deep profile of this seal provides extra stability needed to resist rolling in the groove and together with the knife trimmed precision sealing lips, the results are improved life and sealing. The 512 can be used for single acting applications or fitted back to back for double acting applications. Although it can also be used as a rod seal, Other profiles like 513, 605 or 621 are a better option.

Technical details shown are for standard material option.

FEATURES

- FLEXIBLE FOR EASY INSTALLATION
- EXCELLENT RESISTANCE TO ABRASION
- POSITIVE LIP ACTUATION
- DEEP PROFILE FOR STABILITY
- WIDE RANGE OF SIZES AND MATERIAL OPTIONS

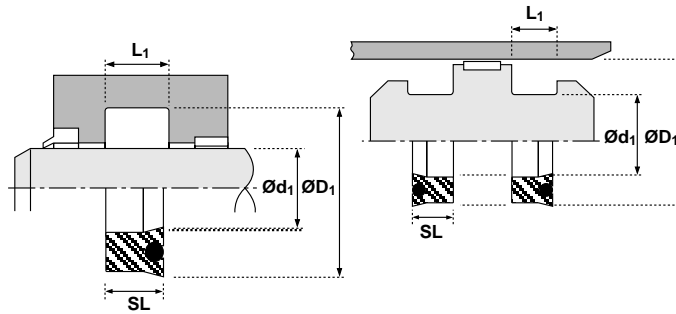
MATERIALS

| | |
|------------------------|---------------------------|
| Seal material - O-Ring | last digit of part number |
| Standard material: | |
| Polyurethane - NBR | ----- 10 |
| Material options: | |
| Polyester - NBR | ----- 11 |
| Polyester - FKM | ----- 12 |

Rod/Piston seals

512

inch



| Ød ₁ | ØD ₁ | SL | L ₁ | STD. REF. | PART No. |
|-----------------|-----------------|----|----------------|-----------|----------|
|-----------------|-----------------|----|----------------|-----------|----------|

1/8 CROSS SECTION

| | | | | | |
|-------|-------|------|------|--------------|---------|
| .250 | .500 | .250 | .275 | 12500250-250 | 8820210 |
| .500 | .750 | .250 | .275 | 12500500-250 | 8870510 |
| .625 | .875 | .250 | .275 | 12500625-250 | 8820510 |
| .750 | 1.000 | .250 | .275 | 12500750-250 | 8820710 |
| 1.000 | 1.250 | .250 | .275 | 12501000-250 | 8821210 |
| 1.125 | 1.375 | .250 | .275 | 12501125-250 | 8854910 |
| 1.188 | 1.438 | .188 | .207 | 12501187-187 | 8858010 |
| 1.250 | 1.500 | .250 | .275 | 12501250-250 | 8821810 |
| 1.375 | 1.625 | .250 | .275 | 12501375-250 | 8822110 |
| 1.500 | 1.750 | .250 | .275 | 12501500-250 | 8822310 |
| 1.625 | 1.875 | .250 | .275 | 12501625-250 | 8870610 |
| 1.750 | 2.000 | .250 | .275 | 12501750-250 | 8822810 |
| 2.000 | 2.250 | .250 | .275 | 12502000-250 | 8823110 |

3/16 CROSS SECTION

| | | | | | |
|-------|-------|------|------|--------------|---------|
| .750 | 1.125 | .313 | .344 | 18700750-312 | 8820810 |
| 1.000 | 1.375 | .313 | .344 | 18701000-312 | 8821310 |
| 1.125 | 1.500 | .250 | .275 | 18701125-250 | 8820610 |
| 1.125 | 1.500 | .313 | .344 | 18701125-312 | 8821710 |
| 1.250 | 1.625 | .313 | .344 | 18701250-312 | 8821910 |
| 1.375 | 1.750 | .313 | .344 | 18701375-312 | 8822210 |
| 1.375 | 1.750 | .375 | .413 | 18701375-375 | 8870710 |
| 1.500 | 1.875 | .375 | .413 | 18701500-375 | 8822510 |
| 1.625 | 2.000 | .313 | .344 | 18701625-312 | 8858110 |
| 1.625 | 2.000 | .375 | .413 | 18701625-375 | 8822710 |
| 1.750 | 2.125 | .375 | .413 | 18701750-375 | 8822910 |
| 1.875 | 2.250 | .375 | .413 | 18701875-375 | 8870810 |
| 2.000 | 2.375 | .375 | .413 | 18702000-375 | 8823210 |
| 2.125 | 2.500 | .250 | .275 | 18702125-250 | 8865510 |
| 2.125 | 2.500 | .375 | .413 | 18702125-375 | 8870910 |
| 2.188 | 2.563 | .375 | .413 | 18702187-375 | 8858210 |
| 2.250 | 2.625 | .313 | .344 | 18702250-312 | 8858310 |
| 2.250 | 2.625 | .375 | .413 | 18702250-375 | 8823410 |
| 2.375 | 2.750 | .375 | .413 | 18702375-375 | 8858410 |
| 2.500 | 2.875 | .375 | .413 | 18702500-375 | 8871010 |
| 2.625 | 3.000 | .313 | .344 | 18702625-312 | 8858510 |
| 2.625 | 3.000 | .375 | .413 | 18702625-375 | 8823710 |

| Ød ₁ | ØD ₁ | SL | L ₁ | STD. REF. | PART No. |
|-----------------|-----------------|----|----------------|-----------|----------|
|-----------------|-----------------|----|----------------|-----------|----------|

| | | | | | |
|-------|-------|------|------|--------------|---------|
| 2.750 | 3.125 | .375 | .413 | 18702750-375 | 8871110 |
| 2.875 | 3.250 | .250 | .275 | 18702825-250 | 8865610 |
| 3.000 | 3.375 | .375 | .413 | 18703000-375 | 8823910 |
| 3.125 | 3.500 | .250 | .275 | 18703125-250 | 8867310 |
| 3.125 | 3.500 | .375 | .413 | 18703125-375 | 8871210 |
| 3.188 | 3.563 | .375 | .413 | 18703187-375 | 8858610 |
| 3.250 | 3.625 | .313 | .344 | 18703250-312 | 8858710 |
| 3.250 | 3.625 | .375 | .413 | 18703250-375 | 8824010 |
| 3.375 | 3.750 | .375 | .413 | 18703375-375 | 8858810 |
| 3.500 | 3.875 | .375 | .413 | 18703500-375 | 8824110 |
| 3.625 | 4.000 | .313 | .344 | 18703625-312 | 8864010 |
| 3.625 | 4.000 | .375 | .413 | 18703625-375 | 8824210 |
| 3.750 | 4.125 | .375 | .413 | 18703750-375 | 8855010 |
| 3.875 | 4.250 | .250 | .275 | 18703875-250 | 8820910 |
| 4.000 | 4.375 | .375 | .413 | 18704000-375 | 8824310 |
| 4.125 | 4.500 | .313 | .344 | 18704125-312 | 8867210 |
| 4.125 | 4.500 | .375 | .413 | 18704125-375 | 8871310 |
| 4.188 | 4.563 | .375 | .413 | 18704187-375 | 8859010 |
| 4.250 | 4.625 | .313 | .344 | 18704250-312 | 8859110 |
| 4.250 | 4.625 | .375 | .413 | 18704250-375 | 8824410 |
| 4.375 | 4.750 | .375 | .413 | 18704375-375 | 8859210 |
| 4.500 | 4.875 | .375 | .413 | 18704500-375 | 8824510 |
| 4.625 | 5.000 | .313 | .344 | 18704625-312 | 8859310 |
| 4.625 | 5.000 | .375 | .413 | 18704625-375 | 8855410 |
| 4.875 | 5.250 | .250 | .275 | 18704875-250 | 8821510 |

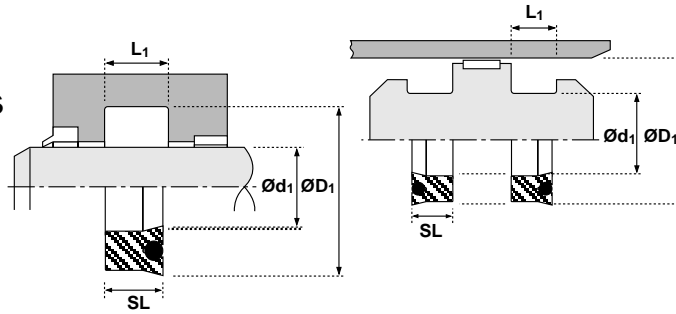
1/4 CROSS SECTION

| | | | | | |
|-------|-------|------|------|--------------|---------|
| .438 | .938 | .250 | .275 | 25000437-375 | 8863110 |
| .750 | 1.250 | .375 | .413 | 25000750-375 | 8825010 |
| 1.000 | 1.500 | .375 | .413 | 25001000-375 | 8825210 |
| 1.125 | 1.625 | .375 | .413 | 25001125-375 | 8847610 |
| 1.250 | 1.750 | .375 | .413 | 25001250-375 | 8825410 |
| 1.375 | 1.875 | .375 | .413 | 25001375-375 | 8825610 |
| 1.500 | 2.000 | .313 | .344 | 25001500-312 | 8821010 |
| 1.500 | 2.000 | .375 | .413 | 25001500-375 | 8825710 |
| 1.750 | 2.250 | .375 | .413 | 25001750-375 | 8825910 |
| 2.000 | 2.500 | .375 | .413 | 25002000-375 | 8826210 |
| 2.125 | 2.625 | .375 | .413 | 25002125-375 | 8826410 |

Rod/Piston seals

512

inch



| $\text{Ø}d_1$ | $\text{Ø}D_1$ | SL | L_1 | STD. REF. | PART No. |
|---------------|---------------|------|-------|--------------|----------|
| 2.250 | 2.750 | .375 | .413 | 25002250-375 | 8826510 |
| 2.250 | 2.750 | .563 | .619 | 25002250-562 | 8864110 |
| 2.500 | 3.000 | .313 | .344 | 25002500-312 | 8821110 |
| 2.500 | 3.000 | .375 | .413 | 25002500-375 | 8826810 |
| 2.750 | 3.250 | .375 | .413 | 25002750-375 | 8826910 |
| 3.000 | 3.500 | .375 | .413 | 25003000-375 | 8827010 |
| 3.000 | 3.500 | .563 | .619 | 25003000-562 | 8850610 |
| 3.125 | 3.625 | .375 | .413 | 25003125-375 | 8859510 |
| 3.250 | 3.750 | .375 | .413 | 25003250-375 | 8827310 |
| 3.500 | 4.000 | .313 | .344 | 25003500-312 | 8865710 |
| 3.500 | 4.000 | .375 | .413 | 25003500-375 | 8827510 |
| 3.750 | 4.250 | .375 | .413 | 25003750-375 | 8827810 |
| 4.000 | 4.500 | .375 | .413 | 25004000-375 | 8827910 |
| 4.000 | 4.500 | .563 | .619 | 25004000-562 | 8828010 |
| 4.125 | 4.625 | .375 | .413 | 25004125-375 | 8859610 |
| 4.250 | 4.750 | .375 | .413 | 25004250-375 | 8828210 |
| 4.250 | 4.750 | .563 | .619 | 25004250-562 | 8833710 |
| 4.500 | 5.000 | .313 | .344 | 25004500-312 | 8821410 |
| 4.500 | 5.000 | .375 | .413 | 25004500-375 | 8828610 |
| 4.500 | 5.000 | .563 | .619 | 25004500-562 | 8828710 |
| 5.000 | 5.500 | .375 | .413 | 25005000-375 | 8871510 |
| 5.000 | 5.500 | .563 | .619 | 25005000-562 | 8828810 |
| 5.500 | 6.000 | .375 | .413 | 25005500-375 | 8829110 |
| 5.500 | 6.000 | .563 | .619 | 25005500-562 | 8829210 |
| 6.000 | 6.500 | .563 | .619 | 25006000-562 | 8829310 |
| 6.500 | 7.000 | .375 | .413 | 25006500-375 | 8829510 |
| 6.500 | 7.000 | .563 | .619 | 25006500-562 | 8829710 |
| 7.000 | 7.500 | .375 | .413 | 25007000-375 | 8822610 |
| 7.000 | 7.500 | .563 | .619 | 25007000-562 | 8877210 |
| 7.500 | 8.000 | .375 | .413 | 25007500-375 | 8829610 |
| 7.500 | 8.000 | .563 | .619 | 25007500-562 | 8877310 |
| 8.500 | 9.000 | .375 | .413 | 25008500-375 | 8829810 |
| 8.500 | 9.000 | .563 | .619 | 25008500-562 | 8855110 |

5/16 CROSS SECTION

| | | | | | |
|-------|-------|------|------|--------------|---------|
| 1.000 | 1.625 | .500 | .550 | 31201000-500 | 8825310 |
| 1.375 | 2.000 | .500 | .550 | 31201375-500 | 8871610 |
| 1.500 | 2.125 | .500 | .550 | 31201500-500 | 8825810 |

| $\text{Ø}d_1$ | $\text{Ø}D_1$ | SL | L_1 | STD. REF. | PART No. |
|---------------|---------------|------|-------|--------------|----------|
| 1.750 | 2.375 | .500 | .550 | 31201750-500 | 8826010 |
| 1.875 | 2.500 | .500 | .550 | 31201875-500 | 8826110 |
| 2.000 | 2.625 | .500 | .550 | 31202000-500 | 8826310 |
| 2.250 | 2.875 | .500 | .550 | 31202250-500 | 8871710 |
| 2.375 | 3.000 | .500 | .550 | 31202375-500 | 8826710 |
| 2.500 | 3.125 | .500 | .550 | 31202500-500 | 8871810 |
| 2.750 | 3.375 | .500 | .550 | 31202750-500 | 8871910 |
| 2.875 | 3.500 | .500 | .550 | 31202875-500 | 8872010 |
| 3.000 | 3.625 | .500 | .550 | 31203000-500 | 8827110 |
| 3.375 | 4.000 | .500 | .550 | 31203375-500 | 8872110 |
| 3.500 | 4.125 | .500 | .550 | 31203500-500 | 8827710 |
| 3.750 | 4.375 | .500 | .550 | 31203750-500 | 8872210 |
| 3.875 | 4.500 | .500 | .550 | 31203875-500 | 8872310 |
| 4.375 | 5.000 | .500 | .550 | 31204375-500 | 8828410 |
| 4.375 | 5.000 | .625 | .688 | 31204375-625 | 8872410 |
| 4.500 | 5.125 | .625 | .688 | 31204500-625 | 8872510 |
| 5.375 | 6.000 | .625 | .688 | 31205375-625 | 8872610 |
| 6.375 | 7.000 | .625 | .688 | 31206375-625 | 8829410 |
| 7.000 | 7.625 | .625 | .688 | 31207000-625 | 8859710 |
| 7.375 | 8.000 | .625 | .688 | 31207375-625 | 8855310 |

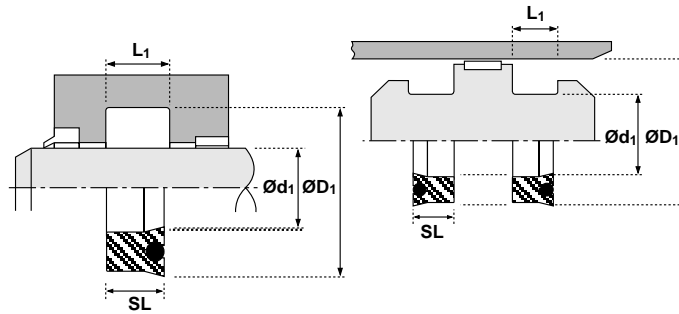
3/8 CROSS SECTION

| | | | | | |
|-------|-------|------|------|--------------|---------|
| 1.500 | 2.250 | .500 | .550 | 37501500-500 | 8872710 |
| 1.500 | 2.250 | .625 | .688 | 37501500-625 | 8872810 |
| 1.750 | 2.500 | .500 | .550 | 37501750-500 | 8830010 |
| 2.000 | 2.750 | .500 | .550 | 37502000-500 | 8830310 |
| 2.000 | 2.750 | .625 | .688 | 37502000-625 | 8830410 |
| 2.250 | 3.000 | .500 | .550 | 37502250-500 | 8872910 |
| 2.250 | 3.000 | .625 | .688 | 37502250-625 | 8873010 |
| 2.500 | 3.250 | .500 | .550 | 37502500-500 | 8879210 |
| 2.500 | 3.250 | .625 | .688 | 37502500-625 | 8830510 |
| 2.750 | 3.500 | .500 | .550 | 37502750-500 | 8830710 |
| 2.750 | 3.500 | .625 | .688 | 37502750-625 | 8830810 |
| 3.000 | 3.750 | .500 | .550 | 37503000-500 | 8831010 |
| 3.000 | 3.750 | .625 | .688 | 37503000-625 | 8878710 |
| 3.250 | 4.000 | .500 | .550 | 37503250-500 | 8831110 |
| 3.250 | 4.000 | .625 | .688 | 37503250-625 | 8831210 |
| 3.375 | 4.125 | .625 | .688 | 37503375-625 | 8855910 |

Rod/Piston seals

512

inch



| Ød ₁ | ØD ₁ | SL | L ₁ | STD. REF. | PART No. |
|-----------------|-----------------|------|----------------|--------------|----------|
| 3.500 | 4.250 | .500 | .550 | 37503500-500 | 8878810 |
| 3.500 | 4.250 | .625 | .688 | 37503500-625 | 8831310 |
| 3.750 | 4.500 | .500 | .550 | 37503750-500 | 8831410 |
| 4.000 | 4.750 | .500 | .550 | 37504000-500 | 8878910 |
| 4.000 | 4.750 | .625 | .688 | 37504000-625 | 8831610 |
| 4.250 | 5.000 | .500 | .550 | 37504250-500 | 8831810 |
| 4.250 | 5.000 | .625 | .688 | 37504250-625 | 8831910 |
| 4.500 | 5.250 | .500 | .550 | 37504500-500 | 8832010 |
| 4.500 | 5.250 | .625 | .688 | 37504500-625 | 8832110 |
| 4.750 | 5.500 | .625 | .688 | 37504750-625 | 8832210 |
| 5.000 | 5.750 | .500 | .550 | 37505000-500 | 8879110 |
| 5.000 | 5.750 | .625 | .688 | 37505000-625 | 8832310 |
| 5.250 | 6.000 | .625 | .688 | 37505250-625 | 8832610 |
| 5.750 | 6.500 | .500 | .550 | 37505750-500 | 8829010 |
| 5.750 | 6.500 | .625 | .688 | 37505750-625 | 8832810 |
| 6.000 | 6.750 | .625 | .688 | 37506000-625 | 8833010 |
| 6.250 | 7.000 | .500 | .550 | 37506250-500 | 8833210 |
| 6.250 | 7.000 | .625 | .688 | 37506250-625 | 8833310 |
| 6.500 | 7.250 | .625 | .688 | 37506500-625 | 8833410 |
| 6.750 | 7.500 | .625 | .688 | 37506750-625 | 8850810 |
| 7.000 | 7.750 | .500 | .550 | 37507000-500 | 8859810 |
| 7.000 | 7.750 | .625 | .688 | 37507000-625 | 8877610 |
| 7.250 | 8.000 | .625 | .688 | 37507250-625 | 8833510 |
| 7.750 | 8.500 | .625 | .688 | 37507750-625 | 8859910 |
| 8.250 | 9.000 | .500 | .550 | 37508250-500 | 8860010 |
| 8.250 | 9.000 | .625 | .688 | 37508250-625 | 8853710 |

| Ød ₁ | ØD ₁ | SL | L ₁ | STD. REF. | PART No. |
|-------------------|-----------------|------|----------------|--------------|----------|
| 1/2 CROSS SECTION | | | | | |
| 1.500 | 2.500 | .750 | .825 | 50001500-750 | 8820310 |
| 2.000 | 3.000 | .750 | .825 | 50002000-750 | 8853410 |
| 3.000 | 4.000 | .750 | .825 | 50003000-750 | 8850510 |
| 3.500 | 4.500 | .750 | .825 | 50003500-750 | 8823010 |
| 4.000 | 5.000 | .750 | .825 | 50004000-750 | 8853510 |
| 4.375 | 5.375 | .750 | .825 | 50004375-750 | 8850410 |
| 5.000 | 6.000 | .750 | .825 | 50005000-750 | 8832410 |
| 5.500 | 6.500 | .750 | .825 | 50005500-750 | 8823310 |
| 6.000 | 7.000 | .750 | .825 | 50006000-750 | 8833110 |
| 7.000 | 8.000 | .750 | .825 | 50007000-750 | 8851910 |
| 7.500 | 8.500 | .750 | .825 | 50007500-750 | 8820410 |
| 8.000 | 9.000 | .750 | .825 | 50008000-750 | 8855210 |
| 8.250 | 9.250 | .750 | .825 | 50008250-750 | 8904710 |