# MODEL UBSRD AND UBSRD-P

REMOTE DRIVE UPBLAST PROPELLER ROOF EXHAUSTER



## **MODEL FEATURES**

• Exhaust air up to 67,000 CFM in static pressure applications up to 1" w.g.

S<sub>2</sub>P

- Motor and drives are located outside of the exhaust airstream
- UBSRD is suited for removal of heated or contaminated air
- Capable of continuous operation exhausting air up to 200°F
- · Belt drives permit easy performance adjustments when needed
- cULus 705 Listed

## MODEL OVERVIEW

Model UBSRD units are high capacity, belt driven roof mounted exhausters rated from 3,700 to  $\hat{I}$  ,000 CFM. The motor and drives are located outside of the exhaust airstream, making these units especially suited for the removal of heated or contaminated air from commercial and industrial buildings or Áprocesses where these conditions exist. All models are capable of continuous operation exhausting air to 200°F.

The remote drive construction allows for easy rooftop belt and motor access for maintenance. For increased air performance (in clean conditions) with the same easy maintenance access, the UBSRD is available without the belt and bearing enclosures. Straight-through air flow design results in maximum exhaust efficiency. During operation, high air flow velocity opens butterfly dampers and prevents rain or snow from entering. Dampers close and cover the venturi opening when unit is not in use.

The roof mounted location eliminates interference with processes and equipment inside the building. It also permits locating the exhauster over a source of heated or contaminated air, allowing direct upward venting to the outside, unlike an wall mounted exhauster which may move contaminated air through adjacent work spaces.

The UBSRD-P is an excellent choice for applications that require access to the internal components of the fan from the roof, and do not need UL793 high temperature components. The UBSRD-P also has a highly efficient polypropylene propeller that that can withstand most applications.

#### 2 year fan housing warranty, 1 year motor warranty

S<sub>2</sub>P

## CONSTRUCTION/SPECIFICATION CHECKLIST

## Panel Assembly

- Heavy-gauge G90 galvanized steel panel, size 24-60.
- One piece venturi for maximum efficiency and strength.
- Motor mounting plates of heavy-gauge galvanized steel.
- Bearing mounting plates of heavy-gauge galvanized steel.
- Lifting eyes standard for ease of installation.

## Windband/Butterfly Dampers

- Heavy-gauge galvanized steel windband.
- Galvanized steel butterfly dampers standard.
- Galvanized rain channel drains water from damper area to roof.
- Galvanized damper shaft rotates in bronze bushing.

## Propeller

- UBSRD: Steel hub plate with steel taper lock bushing.
- UBSRD: Die formed, heavy-gauge, epoxy coated, steel blades
- UBSRD-P: Glass Reinforced polypropylene

## Drives

- Shielded from airstream by galvanized steel enclosure (Optional).
- Sized for minimum 150% of drive horsepower.
- Single belt adjustable pitch sheaves through 3HP.
- Two belt fixed pitch sheaves 5HP through 10HP.
- Adjustable pitch sheaves are optional above 3HP.
- Tilt motor base for belt adjustment.
- Nonstatic, oil resistant v-belts.
- Keyed, turned, ground and polished shafts.

## Bearings

- Bearings designed for minimum 200,000 hour life, L50.
- Cast iron self-aligning pillow block ball bearings.
- Bearings are sealed, prelubricated and furnished with relube fittings.

## Motors

- · Located outside airstream under weather cover.
- Brands are nationally recognized and locally serviced.
- Open drip-proof construction is standard.



**Roof Curb:** Prefabricated heavy-gauge galvanized steel, welded construction, 12" high with 1-1/2" wood nailer. Options include burglar bars, single and double pitch construction, and additional curb heights.



**Disconnect Switch:** Nonfused safety disconnects are available for all motor sizes in rain-tight or open enclosures.

Magnetic Latches: Help reduce damper chatter when the units are not in operation.

Noninsulated Belt Cover (Belt Tube): To isolate drive components from airstreams.

**Outlet Guard:** 1/2" x 1" wire mesh guard will prevent birds and other objects from entering fan.

**Propeller Blade Side Safety Guard:**  $\frac{1}{2} \times 1^{\circ}$  galvanized wire guard. **Important:** For all nonducted applications, the manufacturer recommends that a safety guard must be installed as a safety precaution for personnel below unit.

**Extended Grease Lines:** Extended grease lines allow fan bearings to be relubricated from the exterior.

**Special Coatings:** Powered roof exhausters often require special coatings for protective and decorative purposes. Available coatings include: Synthetic Resin, Epoxy, and Heresite (air-dried phenolic). Contact your representative or the factory for more information on available coatings and colors.



## **MODELS UBSRD-HT & UBSRD-HT1** REMOTE DRIVE UPBLAST PROPELLER ROOF EXHAUSTERS

FOR HEAT AND SMOKE REMOVAL

## MODEL FEATURES

- Exhaust air up to 52,000 CFM in static pressure applications up to 3/4" w.g.
- Motor and drives are located outside of the exhaust airstream
- Designed and tested for emergency heat and smoke removal
- Successfully passed heat test of 1000°F for 15 minutes and 500°F for over 4 hours
- · Belt drives permit easy performance adjustments when needed
- cULus 705 Listed

## **MODEL OVERVIEW**

Model UBSRD-HT/HT1 has been designed and tested for emergency heat and smoke removal. This design also lends itself to everyday nonemergency high capacity industrial and commercial roof exhaust applications. Model UBSRD-HT/HT1 successfully passed heat test of 1000°F for fifteen (15) minutes, and 500°F for over four (4) hours by an independent testing agency. Model UBSRD-HT/

Features	UBSRD-HT	UBSRD-HT1
165°F (74°C) Fusible Link and Spring Damper Lifters		٠
Belt tube with heat shield	•	•
Dual Drives	•	•
High Temperature Bearing Grease	•	•

HT1 exceeds I.R.I (Industrial Risk Insurers) guidelines as "Power Ventilator for Smoke Control Systems."

The heavy-gauge design allows for years of standard commercial use and the dependability required in a fire emergency. The upblast configuration exhausts heat and smoke high above the roof line aiding in the access and capabilities of firefighters. Unlike complete design dependence on gravity vents which are sometimes limited by air temperature and wind velocity, the UBSRD-HT/HT1 in conjunction with gravity vents, will more effectively remove smoke, hot air, and gases when used in a properly designed system. With the UBSRD-HT1 unit, in the event of electrical failure, the 165°F fusible link will activate the spring assisted damper doors to provide gravity ventilation. Fan CFM, sizing and location for both exhaust and supply air are an important part of the overall heat and smoke venting building design needs. Refer to I.R.I., NFPA (National Fire Protection Association), and local fire codes for help in proper system design. Final approval for the complete system design should be authorized by the local authority having jurisdiction.

Fan selections are available in 24, 30, 36, 42, 48, 54 and 60 inch sizes. Horsepower and CFM range to 52,000 CFM and 10HP. Units are tested in accordance with AMCA Standard 301 (sound) and AMCA 210 (air) in an AMCA certified laboratory. Every unit is completely assembled and factory tested for quality assurance prior to shipment.

## 1 year fan housing warranty, 1 year motor warranty



REMOTE DRIVE UPBLAST PROPELLER ROOF EXHAUSTERS FOR HEAT AND SMOKE REMOVAL

## CONSTRUCTION/SPECIFICATION CHECKLIST

S&P

- 1. Successfully heat tested by independent laboratory for;
  - (a) 1000°F for 15 minutes.
  - (b) 500°F for minimum 4 hours.
- 2. All ferrous construction in airstream.
- 3. 165°F fusible link in damper spring mechanism (HT1 unit only).
- 4. Motor out-of-airstream design.
- 5. Belt & bearings enclosed in ventilated housing.
- 6. Minimum dual groove drive/belt combination.
- 7. Shaft heat slinger.
- 8. Belt tube and cover standard.
- 9. Die formed, heavy-gauge, epoxy coated, steel blades.
- 10. High temp grease.

#### Drives

Motors, bearings and belt are shielded from the airstream by a sheet metal enclosure, with cooling provided by fresh outside air. Drives are fixed, sized for a minimum 150% of drive horsepower. Drives are minimum dual groove sheaves. Adjustable sheaves are available as an option. Bearings are heavy-duty cast iron, pillow block with relubricable fittings. Standard bearings are designed for minimum 200,000 hour, L50 life. All shafts are turned, ground and polished steel coated with an anti-rust compound to resist corrosion.

#### **Electrical Power**

Electrical power should be independent of the general building. Wiring requires special, heat resistant qualities as determined by local fire codes. Switching should always be arranged so that automatic start-up can be achieved through safety devices such as, but not limited to, sprinkler systems and smoke or heat sensors.

#### High Temperature Option

## 500°F (260°C) for a minimum of 4 hours

#### 1000°F (538°C) for a minimum of 15 minutes

This construction exceeds specifications for IRI requirements of 500°F (260°C) air for a minimum of 4 hours and the SBCCI "Standard Fire Prevention Code" requirements of 1000°F (538°C) for a minimum of 15 minutes in emergency smoke removal applications. In addition, this construction exceeds British Standards 7346 Class B (250°C for 2 hours), Class C (300°C for 15 minutes), and Class D (300°C for 1 hour) temperature requirements. Temperature ratings tested in accordance to UL smoke control systems.

## **OPTIONS/ACCESSORIES**

**Roof Curb:** Prefabricated heavy-gauge galvanized steel, welded construction, 12" high with 1-1/2" wood nailer. Options include burglar bars, single and double pitch construction, and additional curb heights.



Disconnect Switch: Nonfused safety disconnects are available for all motor sizes in rain-tight or open enclosures.

Outlet Guard: 1/2" x 1" wire mesh guard will prevent birds and other objects from entering fan.

**Propeller Blade Side Safety Guard:**  $\frac{1}{2} \times 1^{\circ}$  galvanized wire guard. **Important:** For all nonducted applications, the manufacturer recommends that a safety guard must be installed as a safety precaution for personnel below unit.

**Special Coatings:** Powered roof exhausters often require special coatings for protective and decorative purposes. Available coatings include: Synthetic Resin, Epoxy, and Heresite (air-dried phenolic). Contact your representative or the factory for more information on available coatings and colors.



## PERFORMANCE DATA

10

817

10.5

54

HH    Viral    BH 2    Q.375    0.000    0.12    0.100    0.027    0.500    0.620    0.620    0.237    0.500    0.620    0.620    0.237    0.500    0.620    0.620    0.500    0.620    0.620    0.500    0.676    0.500    0.676    0.500    0.676    0.500    0.676    0.500    0.676    0.500    0.676    0.500    0.50	Medel	Motor	DDM	Max.	Sones	CFM @ Static Pressure in Inches of Water										
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48L    1-1/2    460    1.65    22    21919    19765    19227    18470    16957    15444      3    579    3.3    26    27616    25907    2580    2004    24053    23102    21872    20026      5    670    5.1    33    31937    30459    30090    29721    2882    28243    27308    25905    23195    20385      48H    7    791    5.5    40    32797    30939    30474    30136    29461    28786    27950    26696    24225       48H    7    71/2    908    8.25    48    37629    35906    35475    35172    34565    33958    33369    32486    30522    28440      10    970    10.1    50    40214    38602    38199    37896    37289    36682    36131    35305    3727    31778    29735      541    2    442    2.2	42H	7-1/2	1155	7.88	53	30440	29784	29620		29121	28788	28339	27665	26596	25568	24449
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5    791    5.5    40    32797    30939    30474    30136    29461    28786    27950    26696    24225      48H    7-1/2    908    8.25    48    37629    35906    35475    35172    34565    33958    33369    32486    30522    28440      10    970    10.1    50    40214    38602    38199    37896    37289    36682    36131    35305    33727    31778    29735      54L    2    442    2.2    17    27060    23788    22970    21627    18942    16256      20331    20309    16227        2018    21026    20136      20331    20309    16227        33305    32818    31844    30870    29178    26640    20018         24765    22967      5	48L	3	579	3.3	26	27616	25907	25480	25004	24053	23102	21872	20026			
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		5	670	5.1	33	31937	30459	30090	29721	28982	28243	27308	25905	23195	20385	
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		5	791	5.5	40	32797	30939	30474	30136	29461	28786	27950	26696	24225		
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	48H	7-1/2	908		48	37629				34565				30522	28440	
54L    1-1/2    402    1.65    16    24586    21026    20136      54L    2    442    2.2    17    27060    23788    22970    21627    18942    16256      3    504    3.3    19    30851    27673    26879    26109    24570    23031    20309    16227      5    600    5.5    25    36726    33989    3305    32818    31844    30870    29178    26640    20018      5    600    5.5    25    36726    28700    28194    27748    26856    25964    24765    22967        2640    20018         23389    3305    32818    31844    30870    29178    26640    20018          2967       30726    28700    28194    27748    26856    25964    24															31778	29735
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$																
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$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	54L	3										20309	16227			
3    633    3.3    37    30726    28700    28194    27748    26856    25964    24765    22967      5    771    5.5    51    37430    35799    35391    34990    34187    33385    32652    31553      7-1/2    882    8.25    54    42804    41386    41032    40659    39912    39165    38537    37596    35925      10    939    10.5    57    45565    44233    43900    43553    42858    42163    41533    40589    39167    37334    35314      60L    5    495    5.49    26    44233    41132    40357    39495    37771    36047    32622    27485    22405      38364    30821    26382      3    564    3.3    37    36030    33791    33231    3238    30702    29016      2405       33058 </td <td></td> <td>20018</td> <td></td> <td></td>														20018		
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54H    7-1/2    882    8.25    54    42804    41386    41032    40659    39912    39165    38537    37596    35925      10    939    10.5    57    45565    44233    43900    43553    42858    42163    41533    40589    39167    37334    35314      60L    5    495    5.49    26    44233    41132    40357    39495    37771    36047    32622    27485    22405         4163    30821    26382      30417    37334    35314      60L    5    495    5.49    26    44233    41132    40357    39495    37771    36047    32622    27485    22405        40357    39495    37771    36047    32622    27485    30821    26382        40353    41464    38364    30821    26382																
10    939    10.5    57    45565    44233    43900    43553    42858    42163    41533    40589    39167    37334    35314      3    418    3.3    24    37362    33644    32715    31036    27677    24318    21876    18214	54H													35925		
3  418  3.3  24  37362  33644  32715  31036  27677  24318  21876  18214    60L  5  495  5.49  26  44233  41132  40357  39495  37771  36047  32622  27485  22405    7-1/2  555  8.15  35  50459  47741  47062  46356  44943  43530  41464  38364  30821  26382    3  564  3.3  37  36030  33791  33231  32388  30702  29016    5  664  5.5  47  42397  40441  39952  39405  38310  37216  35553  33058															37334	35314
60L    5    495    5.49    26    44233    41132    40357    39495    37771    36047    32622    27485    22405      7-1/2    555    8.15    35    50459    47741    47062    46356    44943    43530    41464    38364    30821    26382      3    564    3.3    37    36030    33791    33231    32388    30702    29016      5    664    5.5    47    42397    40441    39952    39405    38310    37216    35553    33058																
7-1/2    555    8.15    35    50459    47741    47062    46356    44943    43530    41464    38364    30821    26382      3    564    3.3    37    36030    33791    33231    32388    30702    29016      5    664    5.5    47    42397    40441    39952    39405    38310    37216    35553    33058	601													22405		
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5 664 5.5 47 42397 40441 39952 39405 38310 37216 35553 33058													00007	00021		
												35553	33058			
60H 7-1/2 744 8.25 51 47555 45805 45368 44965 44160 43354 41982 39924 36140 32640 27799	60H													36140	32640	27700

Performance shown is for roof ventilators for installation type A: Free inlet, Free outlet. The power rating (BHP) does not include drive losses. Performance ratings do not include the effects of appurtenances in the airstream.

52173 50579 50180 49803 49048 48293 47339

45907

42619

39077

Sound ratings are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values are for installation type A: Free inlet fan sone levels.



35879

Due to air stream cooling, the motor loading into the service factor shown does not overheat the motor and is within NEMA recommended limits. BHP at most static pressure points is less than the maximum power shown - in many cases substantially less. Please refer to the Optisizer Selection Program for additional sound data and for selections at other static pressures, and to see the exact BHP for your selection.

## PERFORMANCE DATA

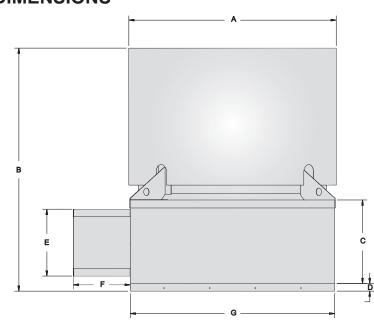
Size	НР	RPM	Static Pressure (in. wg)																	
			0.00	00	0.1	25	0.2	50	0.3	75	0.5	00	0.6	25	0.7	50	0.8	75	1.0	00
	0.5	1,180	6975	0.52	6157	0.52	5210	0.51	3303	0.49	-	-	-	-	-	-	-	-	-	-
24	0.75	1,350	7980	0.78	7271	0.78	6507	0.78	5634	0.75	3610	0.73	-	-	-	-	-	-	-	-
	1	1,510	8926	1.09	8295	1.09	7635	1.10	6895	1.08	6000	1.04	4037	1.02	-	-	-	-	-	-
	1.5	1,715	10137	1.60	9585	1.60	9014	1.60	8412	1.60	7737	1.57	6955	1.53	5616	1.50	-	-	-	-
	0.75	995	10011	0.62	9203	0.69	8373	0.75	7474	0.81	6240	0.83	4101	0.77	-	-	-	-	-	-
	1	1,095	11018	0.83	10285	0.91	9537	0.98	8757	1.04	7884	1.11	6610	1.11	4609	1.02	-	-	-	-
30	1.5	1,255	12628	1.25	11991	1.34	11340	1.42	10683	1.49	9995	1.57	9248	1.65	8322	1.68	6846	1.63	-	-
	2	1,385	13936	1.68	13360	1.78	12774	1.88	12183	1.96	11579	2.04	10947	2.12	10271	2.21	9470	2.26	8359	2.24
	3	1,595	16049	2.57	15550	2.68	15044	2.80	14533	2.90	14018	2.99	13495	3.08	12957	3.17	12398	3.27	11801	3.38
	1	875	13609	0.87	12563	0.96	11349	1.04	10012	1.11	7824	1.13	-	-	-	-	-	-	-	-
	1.5	1,000	15554	1.29	14652	1.40	13642	1.50	12541	1.59	11328	1.66	9431	1.68	7203	1.71	-	-	-	-
36	2	1,095	17031	1.70	16214	1.82	15322	1.93	14337	2.03	13325	2.12	12128	2.19	10316	2.21	8301	2.24	-	-
	3	1,260	19597	2.59	18894	2.72	18148	2.85	17337	2.98	16472	3.10	15596	3.20	14655	3.29	13456	3.35	11773	3.36
	5	1,515	23564	4.50	22984	4.66	22381	4.82	21751	4.97	21081	5.13	20377	5.27	19646	5.41	18918	5.54	18176	5.64
	1	685	17776	0.88	15732	0.98	13530	1.07	10845	1.14	-	-	-	-	-	-	-	-	-	-
	1.5	785	20371	1.33	18603	1.45	16745	1.55	14723	1.63	12253	1.71	-	-	-	-	-	-	-	-
42	2	860	22318	1.74	20711	1.88	19035	1.99	17269	2.09	15319	2.18	13012	2.27	-	-	-	-	-	-
	3	980	25432	2.58	24029	2.73	22576	2.87	21082	3.00	19509	3.11	17810	3.20	15831	3.31	12687	3.40	-	-
	5	1,180	30622	4.50	29463	4.69	28277	4.87	27060	5.03	25825	5.19	24550	5.32	23218	5.45	21813	5.56	20276	5.68
	7.5	1,350	35033	6.74	34024	6.96	32995	7.17	31948	7.36	30883	7.55	29802	7.72	28700	7.89	27564	8.04	26386	8.18
	1.5	525	20634	1.15	18602	1.37	16356	1.51	13713	1.58	10156	1.66	-	-	-	-	-	-		
	2	580	no	1.55	20973	1.80	18990	1.97	16839	2.09	14206	2.16	10867	2.24	-	-	-	-		
48	3	765	31183	2.72	29256	2.87	26805	2.97	24055	3.08	21024	3.26	16064	3.37	-	-	-	-	-	-
	5	910	37094	4.58	35517	4.76	33687	4.90	31488	5.01	29188	5.15	26769	5.34	23998	5.56	19573	5.67	-	-
	7.5	1,050	42800	7.04	41455	7.24	39976	7.43	38546	7.56	36321	7.70	34328	7.85	32295	8.04	30120	8.29	27659	8.54
	10	1,175	47896	9.87	46704	10.10	45423	10.31	44013	10.50	42413	10.65	40661	10.79	38875	10.95	37088	11.16	35215	11.39
	1.5	515	28125	1.31	24834	1.51	21140	1.66	16131	1.69	-	-	-	-	-	-	-	-	-	-
	2	565	30855	1.73	27882	1.95	24624	2.13	20875	2.24	15232	2.18	-	-	-	-	-	-	-	-
54	3	645	35224	2.58	32646										-	-	-	-	-	-
	5	770	42051	4.39									30178				23124		17802	5.42
	7.5	880											38024				33292			8.48
	10	970	52973										44041	10.54	42064	10.82	40014	11.07	37869	11.26
	3	575					30271		25965				-	-	-					
60	5	775			49398										-	-	-	-		
	7.5	885			57512												-	-		
	10	975	67191	11.16	64053	11.28	60747	11.36	57323	11.38	53433	11.35	48283	11.19	41262	10.77	34032	10.43		

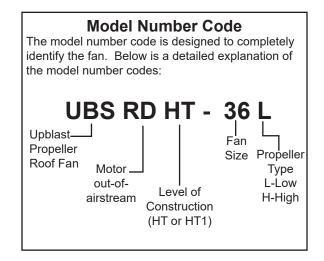
Performance shown is for roof ventilators for installation type A: Free inlet, Free outlet. The power rating (BHP) does not include drive losses. Performance ratings do not include the effects of appurtenances in the airstream.

Due to air stream cooling, the motor loading into the service factor shown does not overheat the motor and is within NEMA recommended limits. BHP at most static pressure points is less than the maximum power shown - in many cases substantially less. Please refer to the Optisizer Selection Program for additional sound data and for selections at other static pressures, and to see the exact BHP for your selection.



MODELS UBSRD, UBSRD-HT & UBSRD-HT1 REMOTE DRIVE UPBLAST PROPELLER ROOF EXHAUSTERS DIMENSIONS





Model	Α	В	С	D	E	F	G	н	I	Wt. (Ibs)
24	30	49	22	2	17-1/2	15	29-1/2	28-1/2	25-1/2	310
30	36	52	22	2	17-1/2	15	35-1/2	34-1/2	31-1/2	340
36	42	58	22	2	17-1/2	15	41-1/2	40-1/2	37-1/2	430
42	48	61	22	2	17-1/2	15	47-1/2	46-1/2	43-1/2	490
48	54	64	22	2	17-1/2	15	53-1/2	52-1/2	49-1/2	640
54	60	67	22	2	17-1/2	15	59-1/2	58-1/2	55-1/2	840
60	66	70	22	2	17-1/2	15	65-1/2	64-1/2	61-1/2	1000

A - Outside Diameter Windband

 ${\bf B}$  - Total Height of Unit

C - Housing Height

D - Curb Cap Depth

E - Motor Cover Height

F - Motor Cover Width

**G** - Inside Dimension of Square Curb Cap **H** - OD of factory built prefab curb.

I - Recommended roof opening (inside dimension of factory built prefab curb.)

Model	Windband	Curb		terfly nper	Housing (galv)	Drive	Channel	Motor	Drive Shaft	Max Motor Frame
Model	(galv)	Cap (Galv)	Galv	Alum	Front/ Back	Support Channel	Support	Bracket	Size	Size
24	20	14	20	0.04	18	12	12	10	1	145T
30	20	14	20	0.04	18	12	12	10	1	184T
36	20	14	20	0.04	18	12	12	10	1	184T
42	20	14	20	0.04	18	12	12	10	1-7/16	215T
48	20	14	20	0.04	18	12	12	10	1-7/16	215T
54	20	14	20	0.04	18	12	12	10	1-7/16	215T
60	20	14	20	0.04	18	12	12	10	1-7/16	215T

